Reviewer's report

Title: Association between substance use and psychosocial characteristics among adolescents of the Seychelles

Version: 1 Date: 18 March 2011

Reviewer: Harold D Green

Reviewer's report:

Overall:
I believe that this investigation of the associations between substance use and psychosocial characteristics of adolescents of the Seychelles has the potential to be a useful contribution to our understanding of this issue in Africa and to our understanding of how they might compare to findings from Western countries. However, I feel that the study falls a little short of making the best contribution it can. I feel that the manuscript was written by several authors and then pasted together without much attention to integrating the tone. This needs to be addressed. Beyond that, I have some concerns about the ethics of the study that I believe can be resolved with clarification. I have some concerns about the methodology that I believe can be resolved. I have some questions regarding the rationale behind the measures chosen which can likely be resolved with clarification. I have some requests for further analyses if they are possible. And I have some requests for extending the discussion. I believe that the authors could more clearly state their research question and the motivations for it (beyond that data are lacking for non-Western countries). Some of the methods need to be better justified and explained. The data are sound. The manuscript does adhere to standards for reporting and data deposition. The manuscript also needs to provide more information on the statistical results. The discussion and conclusions are appropriate for these analyses. The limitations of the work are clearly stated. The authors could do a better job discussing their motivations and the work they are building upon. The title and abstract are acceptable. The writing needs some minor improvement. With revisions, however, I believe that this manuscript is publishable.

- Major Compulsory Revisions

1. Introduction: Why can assessing risk behavior patterns in the Seychelles provide useful insight? That is, can you say that adolescents in the Seychelles are similar to their African counterparts on other factors that suggest that knowing what is going on with their risk behaviors will give us a better understanding of risk behaviors among African adolescents as a whole? I guess I want a better or fuller justification for analyzing the data in the Seychelles. Are these risk behaviors particularly pervasive here? Particularly problematic here? Representative of other African countries, etc...

2. Methods: I believe that you need to explain the informed consent process more
clearly. I do not believe that asking adolescents about their tobacco, alcohol, and cannabis use is ‘non-sensitive’. Please explain more clearly why the study was considered ‘non-sensitive’ and why parental consent was not sought. I understand that the key piece of information is that the Ministry of health and the Ministry of Education approved the study, the questionnaire, and the elimination of parental consent procedures, but Western readers will want to know more about why the study is seen as safe for this type of approach.

3. Methods: You restricted your sample to those who had complete data for all variables of interest. Did those you excluded differ from those you included on any variables? This comparison needs to be completed and discussed in the paper.

4. Methods: You dichotomized ‘on the basis of definitions used by prior studies on risk behaviors’. Please give more detail. I assume that for each risk behavior you provide references to studies that dichotomize as you did. Explain that. Further, explain why dichotomization was necessary. Discuss the distribution of your important outcome variables: risk behaviors.

5. Methods: why were tobacco and cannabis use defined in the last 30 days while alcohol use was defined in the lifetime? I don’t like this inconsistency. I strongly urge you to use past 30 days for alcohol use as well. This way you are grouping dichotomized ‘recent risk behaviors’ together, to form a more coherent scale in subsequent analyses.

6. Methods: why were only three questions chosen from the mental health module to assess psychological characteristics? How many were in the module? What rationale led you to choose the ones you chose? Likewise for the parental monitoring and bonding questions? I want to know why these particular questions were chosen above and beyond that they have relationships with the outcome variables in previous studies.

7. Methods: I am still unsure why one would need to do any factor analysis for this study. It’s fairly well known that risk factors, parental involvement variables, and psychological variables would each fall into separate groups. They are even from separate modules of the questionnaire. Was this just to confirm that for these data that was indeed the case? The authors need to justify why they report this analysis.

8. Results: given the very different levels of risk behaviors for boys and girls, why did the authors choose not to run separate regressions for girls and for boys. Indeed, the only similarity is in lifetime alcohol use. I bet that if past 30 day alcohol use is investigated, the proportions would be more like we see for tobacco and cannabis use. I believe that it would be very informative to see whether the regression results were different if gendered analyses were run. Many studies that find such large differences between genders choose to run separate analyses. It might be that including genders in the same model are obscuring important effects that differ for boys or girls but that are obscured by their being in the same analyses.
9. Results: I want to know how the boys and girls compared on the descriptive factors. Are they significantly different from each other? This information needs to be added to Table 1.

10. Results: you report on the variance explained but don’t interpret these numbers. For ‘having 0-1 friends’ or ‘having pocket money’ what does it mean that 87-90% of their variance remained unexplained? Further, what does that mean for your particular study? Similarly for 51% of the total variance remaining unexplained. What does this mean with respect to the multivariate structure of the data and with respect to your study in particular? It is nice that you have done this factor analysis, but what did it tell you and how did that inform your analyses? Currently it just seems like it was tacked onto this manuscript because it was something else that was done with these data. Not an integral part of this study, which is more about the logistic regressions.

11. Results: this relates a bit to the methods section as well. What motivation do you have for summing the risk factors into a scale. Is it based on the factor analyses? If so, then say so. If there are other reasons why, then mention those as well. That way, when the ‘overall’ model is presented it makes sense to the readers why. Currently, readers must agree that past month smoking in the 66th percentile, past month cannabis use in the 66th percentile, and lifetime drunkenness in the 66th percentile are all relatively ‘equal’ conceptually and worth summing into a measure of a child’s overall risk behavior score. I think you need to make that argument more strongly.

12. Discussion: Overall I wanted to have these results compared to findings from the West. Why? The justification for the analyses was that information on non-Western countries was lacking (true). Inherent in that argument is that non-Western countries might be different. Are they? I want to know.

13. Discussion: your mention that the risk behavior prevalence was higher among boys than girls again suggests that gendered analyses would be very appropriate.

14. Discussion: you briefly mention that the protective effect of being female against engaging in risk behaviors has been documented to be stronger in the African region than in the United States. Spend more time discussing this and talking about the socio-cultural differences that might lead to this. That is, are girls treated differently in Africa? Could that be why they have less opportunity to participate in risk behaviors? Or is there some psychological or individual difference that may lead them to choose less risky behaviors?

15. Discussion: Provide a bit more detail on why the clustering of risk behaviors is consistent with Jessor’s risk behavior syndrome theory. What, briefly, does this theory say and how is it relevant? I do not believe that the suggestion that effective programs should simultaneously address multiple risk behaviors is new. What would make this more relevant would be to discuss how this compares to existing interventions used in the African context or in the context of the
Seychelles. THAT would be interesting.

16. Discussion: you mention that adolescents who experience depressive symptoms are at increased risk of engaging in risk behaviors. Could it not be the other way as well: adolescents who engage in risk behaviors are at increased risk of depressive symptoms? I think you must acknowledge this co-evolving relationship and your inability (with cross-sectional data) to tease these two apart.

17. Discussion: you quote ‘parental understanding of adolescents problems’. Why? Is it from a paper you want to reference? If so, you need to cite it (including the page number). You also need to add an apostrophe to adolescents, which I believe you want to be possessive, but I cannot determine if it is singular or plural (I think it should be plural). I also want more description of how your measures get at ‘parental understanding’. Checking homework and knowing what a child is doing aren’t really ‘understanding’ as I see it. I need to know what YOU think the connection is. Further, are you suggesting that the inconsistencies you find (I want more detail on that) are cultural differences?

18. Introduction: this comes from my reading of the discussion. I’m curious about the context of risk behaviors in the Seychelles. What is the age of initiation of tobacco use, cannabis use, and alcohol use? How does that compare to Western countries? Are there laws prohibiting use of substances by minors or by the entire population as there are in some western countries? I believe that to understand the relevance of your findings we need more information on risk behaviors in the Seychelles context.

19. Discussion: regarding popularity and risk behaviors: studies have shown a non-linear relationship. Having few or no friends is related to risk behaviors, as is having many friends. Having a moderate number of friends is protective. You may want to find these papers and refer to them in your discussion.

20. Discussion: I am still not sure what is new or novel about the clustering of health (this should say risk) behaviors. I think that for the conclusion you should say something more like: ‘We find that psychosocial characteristics were related to multiple adolescent risk behaviors. Specifically, our findings suggest that health promotion programs aimed at preventing or reducing those risk behaviors in adolescents should target multiple risk behaviors simultaneously. These programs should aim to reduce risk factors and promote the protective characteristics at the individual and family levels.’

21. Table 1: are there significant differences in these proportions? Please report them.

22. Table 2: please report the test statistic and the global p-value of the factor analysis.

23. Table 3: (and the methods and results sections more generally) when discussing the analyses: did you account for clustering within schools, within grades, and within classrooms? If possible, this should be done.
24. Table 3: here you add a hyphen to psycho-social, where in the text you do not. Be consistent.

25. Table 3: please provide information on the global statistical tests for your models (test statistics and p-values).

- Minor Essential Revisions

1. Abstract, Results section: to say that the prevalence of tobacco use, alcohol misuse, and cannabis use was clustered is confusing. Prevalences cannot be clustered unless you mean in a geographic sense, where we might see high levels of use for these three variables in a particular neighborhood. I believe that what you mean is that based on these data, risk behaviors hang together, which would be expected because they are risk behaviors. However, you discuss that in the next sentence. I would suggest cutting the ‘and clustered’ here to avoid confusion.

2. Introduction, line three: in this sentence you describe a lot of individual-level outcomes. But you also include ‘juvenile crime rate’ which is, at least, a neighborhood level variable. Could you rephrase to something like ‘commission of crimes’ to bring it back to the same individual level as the others?

3. Introduction: Can you please briefly describe the ‘resiliency approach’ you mention here? And how do a resiliency approach and a ‘risk factor’ approach differ?

4. Introduction and Throughout: Subject –verb agreement: ‘while risk behaviors in youth HAVE been extensively researched in Western countries…’ The authors use the singular ‘has’. Please attend to issues of subject verb agreement throughout. A close reading with fresh eyes should help.

5. Introduction: An association is already a ‘linkage’. I suggest rephrasing this sentence: In this study, we examined the association between substance use (tobacco, alcohol, and cannabis use) and protective characteristics and risk factors among adolescents of the Seychelles.

6. Methods: Describe the GHSH questionnaire modules/methodology more completely. Many Western readers will be unfamiliar.

7. Methods: what is a ‘same health area’? please clarify this.

8. Methods and Throughout: use of the parenthetical abbreviations ‘i.e.’ and ‘e.g.’. They are always followed by a comma. (i.e., for example).

9. Results: spend more time discussing the results of the individual risk behavior regressions. I believe each one should receive its own sentence at least.

10. Results: the paragraph beginning with ‘in order to’. First, it is more grammatically correct to begin that sentence only with the word ‘to’. (To obtain...) Second, the discussion of the composite score and the analytic approach should be in the methods section where you discuss the rest of the measures and
analyses. This section is only for presenting the results. Third, it’s a ‘factor analysis’ not a ‘factorial analysis’.

11. Discussion and throughout: parenthetical abbreviations like ‘i.e.’ and ‘e.g.’ cannot be used outside parentheses. Use ‘in other words’ or ‘for example’ instead.

12. Discussion: I believe that this first paragraph could have better structure. That is, if risk behaviors are associated with individual and family characteristics, then write a sentence about individual characteristics (the ones mentioned are considering attempting suicide and missing school without permission) and a sentence about family characteristics (poor parental monitoring is mentioned). This way you don’t mix up the levels across sentences, making it easier for the reader.

13. Discussion: lengthy appositive phrases like ‘such as missing school without permission’ are set off by commas.

14. Discussion, last sentence of first paragraph: the use of ‘that are’ here is unnecessary. The sentence is stronger if you say: ‘these findings suggest that addressing characteristics associated with all three risk behaviors may strengthen the benefits of prevention to all three risk behaviors’ or something similar. Furthermore, between is used when there are two items. Among is used when there are three or more (as in this context).

15. Discussion: subject verb agreement: in the paragraph on limitations you say ‘data was’. The noun data is plural, so the correct phrase is ‘data were’.

- Discretionary Revisions

1. Methods: I believe that you could eliminate the sentence ‘age and sex were included as further explanatory variables in all models’ because you say you did ‘age and sex adjusted logistic regression’. Either one or the other is necessary. The authors can choose which they are more comfortable with.

2. Methods: you don’t mention what software program you used for the logistic regressions. I don’t believe you need to mention it in your discussion of the factor analysis.

3. Results: you can delete ‘while each variable is considered as a response variable in factor analysis,’ and just start the paragraph with ‘table three shows the results of logistic regressions…’

4. Discussion: first sentence of fourth paragraph and first sentence of fifth paragraph: delete the word several. It is vague and unnecessary.

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, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.