Author's response to reviews

Title: Psychological and behavioural factors associated with sexual risk behaviour among Slovak students

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Version: 3 Date: 2 November 2008

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

Many thanks for the comments regarding our manuscript ‘Psychological and behavioural factors associated with sexual risk behaviour among Slovak students’. We have revised the manuscript extensively based on these very informative comments. Please find attached an appendix in which we summarize all comments and explain the way in which we responded to these comments.

With kind regards,
Also on behalf of the (co)authors,
Sijmen A. Reijneveld

Reviewer: Donald Langille

Major Compulsory Revisions

1
R: With respect to the research question, the Background section makes it fairly clear what authors wish to do, but the question is not presented in the form of a hypothesis or theory, or even a solid reason for carrying out the study, other than to explore associations of behavioural and psychological factors with sexual risk-taking. Other than indicating that the factors they examine have been shown in the literature to be associated with sexual risk-taking, they do not indicate why these factors, and not others, have been chosen. In addition, they state that studies of sexual behaviour are rare in central and eastern Europe, but do not provide what background does exist. Beyond merely stating a wish to explore these associations, a more convincing rationale for the study should be given.

A: We agree with the comments of the reviewer and therefore restructured the Introduction. Several parts of the Background were rewritten and changed following comments of reviewer.

We provide here a list of the main messages by paragraph:
1st Our study will show information concerning the sexual behaviour of young adults that so far has been unknown.
2nd (new paragraph) We try to provide the background which exists in the context of CEE sexual behaviour research and studies. Based on HBSC studies, we may state that adolescents from CEE differ from those in other countries.
3rd The research should also focus on other types of sexual risk behaviour, not only on inconsistent condom use. We provide information and the research background about the types of sexual risk behaviour.
4th We try to rationalize our intention to explore other types of risk behaviour (alcohol and tobacco use) by using ESPAD reports.
5th Early sexual initiation could have a wide range of effects on sexual health later on.
6th Possible theoretical background concerning the connection between sexual risk behaviour and other risk behaviour and psychological factors is presented
7th Many studies have explored the role of psychological factors. Especially high levels of self-esteem and self-efficacy could occur with less risky sexual behaviour.

2.
R: In the Methods section it should be explained why a category of “risky occasion” was created by answering yes to any of three questions. I would have preferred to see these examined as separate risk behaviours, especially since, as the authors later acknowledge, the
alcohol data they examine is not related in time to sexual risks. Though I doubt this can be addressed, “ever” having had a risky behaviour may not mean that the person is still at risk, yet other behavioural risks shown to be associated with risky occasion are very recent events, and the time frames are not mentioned for psychological measures.

**A:** The question of risky occasion was formulated as: ‘Have you ever had sexual intercourse under risky occasion (short relationship, alcohol use, drug use)?’ We did not ask students separate questions on each of these risk behaviours. Therefore, to split this question into separate risk behaviours is not possible.

We added a remark on this to the text (page 11):

‘It should be noted that our measurement of having sex under risky conditions covers lifetime history, which might be the reason for the high proportion, but on the other hand, lifetime history in this age group represents only about 4 years of life.’

The entire, adapted, paragraph now is:

In line with several other studies [33-36], our study shows that alcohol use is one of the most consistent predictors of SRB. This finding supports the explanations that less self-control leads to risk behaviour and that certain people have a psychological predisposition to seek sensation and are thus more likely than others to engage in a variety of risk behaviours [37]. However, without contextual information about this event, we cannot clearly state that alcohol or drug use has a causal relation to SRB. *It would be worth pointing out here that our measurement of having sex under risky conditions covers lifetime history, which might be the reason for the high proportion, but on the other hand, lifetime history in this age group represents only about 4 years of life.* Future analyses should go more deeply into the dimensions of a relationship like trust, intimacy, commitment and communication and their effect on behaviour. Our approach is important especially among the young population, where the age of the first contact with alcohol consumption is rapidly dropping [1].

3.

**R:** A particular concern with the Methods is the process of randomization. It is stated in the first paragraph of page 5 that 882 students were randomly selected to complete a questionnaire during a “compulsory lecture”. Was this a regular lecture during a university course, or was it a lecture about the study itself to which truly randomized students were invited? If it was a regular lecture, and all students at the lecture were included, then students cannot be said to have been truly randomized.

**A:** With the aim of achieving a representative sample of 1st year university students, we asked the Faculty of Science, the Technical Faculty and the Medical Faculty to provide us a list with possible study groups which fit the criteria for the purpose of our study. From this list we randomly selected the study groups which were finally included in the study. Each study group filled out the questionnaire during a compulsory regular lecture.

We added a remark on this to the text (page 5):

Students were recruited from randomly selected study groups *provided by the faculties concerned* .

The entire, adapted, paragraph now is:

Data were collected in April and November 2004. The *sample consisted of 882 first-year students at two universities located in Kosice (230,000 inhabitants) the P.J. Safarik University (7000 students) and the Technical University (12,000 students)* who complete a questionnaire.
concerning health behaviour under the guidance of field workers during a compulsory lecture. Students were recruited from randomly selected study groups provided by the faculties concerned and their participation was voluntary. All procedures concerning data collection were explained to respondents before data collection.

4. R: The reason for choosing having 4 or more lifetime partners as the cut point for multiple partners is not explained and no rationale is provided for choosing levels of drinking, smoking and age of early sex. These choices should be justified.

A: Our reason for choosing 4 or more lifetime partners come from references on studies that were done in a similar way [27-29]. Before age 16 was chosen as early sexual debut following studies which found that having sex before this age could cause gynaecological problems and symptoms, see reference [15]. For the levels of smoking and alcohol use, we adhered levels that had been used in previous studies [30-32].

We added a remark on this to the text (page 6):
‘Categorisations regarding number of sexual partners, drunkenness and smoking were similar to ones that have been used in previously studies [15,27-32].’

The entire, adapted, paragraph now is:
Behavioural factors concerned binge drinking, smoking and early experience of sexual intercourse. Respondents were asked (1) how many times they had been drunk during the previous month (never / 1 or more); (2) how many cigarettes they had smoked during the previous week (none / one or more) and (3) at what age they had had sexual intercourse for the first time. Those who had been drunk at least once during last month, smoked at least one cigarette per week and had sex before age of 16 were indicated as behaving riskily. Categorisations regarding number of sexual partners, drunkenness and smoking were similar to ones that have been used in previously studies [15,27-32].

5. R: Was there a specific time frame for consistent condom use? If this was left open to interpretation, the results are probably not valid.

A: The question on condom use was formulated in such way that it implicitly covers present daily practice. Moreover, taking into account relatively recent “onset” of their experience with sexual experience (80% of them having sex for first time no earlier than when they were 17 years old, which means no more than 3 years ago), we might take this measure as proxy indicator of their daily practice.

6. R: The authors should explain their choices not to include age in the models.

A: In fact we performed a preliminary analysis including age, but no significant associations were found.

We added a remark on this to the text (page 8):
‘We repeated these analyses with addition of age into the models, which yielded very similar results (not shown).’

The entire, adapted, paragraph now is:
We first examined the proportion of students that had had sexual intercourse. Next, for those having had intercourse at least once (n=455), we examined the association of each indicator of SRB with behavioural and psychological factors separately for males and females using logistic regression. First we computed crude odds ratios for each type of SRB regarding each factor. Next we determined the mutually adjusted predictors of SRB by forward selection procedures, starting with factors that had statistically significant crude odds ratio. We repeated these analyses with addition of age into the models, which yielded very similar results (not shown). All analyzes were done with SPSS software, version 14.00.

7.
R: The Discussion makes the point that the occurrence of sex in risky situations is quite high, but does not mention that the behaviours (short relationship or sex while using alcohol or drugs) is both an indication of yes response to any of these questions, and more importantly a behaviour which could have occurred at any time in the past, therefore perhaps not representing current risk.

A: This part of the discussion was rewritten following the comments made by the reviewer (3rd paragraph, page 11).
The occurrence of sexual intercourse under risky conditions is also very high, varying between 33-44% among the sexually experienced respondents. This measure covers lifetime history, which might be the reason for such a high proportion, but on the other hand, lifetime history in this age group represents only about 4 years of life.

We added a remark on this to the text (page 11):
‘It should be noted that our measurement of having sex under risky conditions covers lifetime history, which might be the reason for the high proportion, but on the other hand, lifetime history in this age group represents only about 4 years of life.’

The entire, adapted, paragraph now is:
In line with several other studies [33-36], our study shows that alcohol use is one of the most consistent predictors of SRB. This finding supports the explanations that less self-control leads to risk behaviour and that certain people have a psychological predisposition to seek sensation and are thus more likely than others to engage in a variety of risk behaviours [37]. However, without contextual information about this event, we cannot clearly state that alcohol or drug use has a causal relation to SRB. It should be noted that our measurement of having sex under risky conditions covers lifetime history, which might be the reason for the high proportion, but on the other hand, lifetime history in this age group represents only about 4 years of life. Future analyses should go more deeply into the dimensions of a relationship like trust, intimacy, commitment and communication and their effect on behaviour. Our approach is important especially among the young population, where the age of the first contact with alcohol consumption is rapidly dropping [1].

8.
R: The discussion about the appropriateness of using condoms all of the time as a risk criterion is confusing when it brings in the notion the study being of first year students since the age range here is 19-28

A: We fully agree with this comment. However, we did not split the sample into two or three age categories because 90% of the students were in the 19 to 23 age bracket. We added a short remark about this to the text on page 6.
We changed this text into:

*Of the 882 students included, 7 left the room before the beginning and 43 were excluded afterwards because they left major parts of the questionnaire incomplete (altogether 50). A total of 832 responded (94.3%), 355 male and 477 female, with 90% of the students aged 19-23 years (mean 20.5; SD 1.4).*

9.  
**R:** Many studies examining sexual behaviours and drinking at the time of their occurrence, as opposed to studies of the type carried out here, show no differences in condom use between drinking and non-drinking sexual encounters. The literature should be added to the discussion.

**A:** We added references to the literature on differences (45-47) in condom use with or without alcohol use to the discussion on page 13.

We changed this text into:

Studies which explored the role of alcohol use on condom use [45-47] and studies which assessed the length of a relationship [48] or the type of relationship [49] did not find any association between alcohol consumption and condom use. Moreover, these results do not support the persistent notion that alcohol causes people to engage in sexual risk that they would avoid when sober. Instead, people tend to follow their usual pattern of condom use, regardless of alcohol use [46].

10.  
**R:** A strength is said to be lack of selection bias due to a high response rate. I would be more convinced if the randomization process were more clear.

**A:** We described the sampling procedure more in detail.

11.  
**R:** The authors indicate that religiousness probably represents a number of important supportive construct, but provide no references to support their claim.

**A:** We added two references [38, 39] to support this claim in the Discussion on page 12.

We changed this text into:

Their lower levels of extroversion and higher levels of religiousness are associated with fewer sexual partners following other studies [38,39] where religiousness seems to be a protective factor against a high number of sexual partners among girls.

12.  
**R:** The bottom paragraph on page 12 state that studies of sexual behaviour are rare. If the authors mean globally this is an exaggeration; if they mean in central and eastern Europe they should say so, and provide references for the reason they indicate may be responsible for that situation.

**A:** We clarified that this statement applies to Central Europe. In fact we did not find any studies on SRB in Central Europe.

We changed this text into:

Due to possible methodological problems, studies on sexual behaviour in CEE countries are rare. (page 13)
Minor Essential Revisions

1.  
**R:** Wording of the response to condom use (always/ not always, occasionally, never) is puzzling and needs clarification – “not always” includes the latter two responses.

**A:** We corrected the wording in this section.

We changed this text into:
(3) how often they used condoms (always / almost always, occasionally, never).

2.  
**R:** It should be made clear whether all independent variables or only those significant in univariate analyses were included in the multiple regressions.

**A:** Only the significant variables from univariate analysis were included in the multiple regressions. We added this to the section on statistical analyses (page 8).

We changed this text into:
We computed crude odds ratios for each type of SRB regarding each factor. Subsequently, we determined the mutually adjusted associations of factors with SRB by forward selection procedures, starting with all factors that had a statistically significant crude odds ratio.

3.  
**R:** In Table 4, the confidence intervals for extroversion in males and multiple partners include one; I would suggest rechecking significance for this calculation.

**A:** We rechecked significance for this calculation and we got the same outcomes. This may be due to the fact that the variable extroversion is significantly related to the third level, the so called reference level (extroversion is a 3 level categorical variable; two levels are in the model and they represent the difference between a particular level and the third, reference level).

4.  
**R:** The sentence containing references 7, 29 and 30 on page 12 should have the word “consequences” changed to “associations” if these studies do not demonstrate a casual relationship between alcohol and lack of condom use. BTW, the sentence following this one is incomplete.

**A:** We changed the word “consequences” into “associated”.

We changed this text into:
These results are in accordance with previous research [8,42,43], which showed alcohol consumption to be negatively associated with condom use.

5.  
**R:** On page 13 the word “effect” should be changed to “associations” and “risk factors” to “risk markers”.

**A:** We agree and changed both words.
We changed this text into:
However, we confirm the associations of drinking and smoking on SRB, so we may suppose that smoking or binge drinking increase the probability of SRB, or, in other words, that they are risk indicators with regard to SRB in any case.

Discretionary Revisions

1.
R: The title of the HBSC study should be spelled out in full.

A: We now spell out the title of this study in full, the first time that we use it.

We changed this text into:
These findings fit with those from the *Health Behaviour in School-aged Children* (HBSC) study where a lower proportion of sexually experienced was reported already among 14 and 15 years old adolescents in Central European countries (Hungary, Czech Republic, Croatia, Poland) compared with adolescents from Western or Northern European countries [1].

2.
R: In females, religiousness was very close to significantly protective for risky occasion in univariate analysis. It might be worth mentioning this close associations.

A: We mentioned this close association in discussion on page 12.

We changed this text into:
‘On the border of significance was the association between a high level of religiousness and a low probability of having sex under risky conditions.’
Reviewer: Samuel O Obi

Discretionary revision:

1. 
**R:** Don’t you think it will be better to classify the level of drunkenness instead of just using word “been drunk”?

**A:** It might be of interest indeed, but it would be rather difficult to derive such information from a self-report questionnaire. For that reason we did not report it in this way.

Minor essential revision

2. 
**R:** Do you mean “Binge drinking at least once per week” or Binge drinking at least once per month?

**A:** We meant “Binge drinking at least once per month”. We corrected this mistake in Table 1.

3. 
**R:** What type of random sampling was done? It sounds like stratified sampling. How was it done?

**A:** With the aim of achieving a representative sample of 1st year university students, we asked the Faculty of Science, Technical Faculty and Medical Faculty to provide us a list with possible study groups which fit the criteria for the purpose of our study. From this list we randomly selected the study groups which were finally included in the study. Each study group filled out the questionnaire during a compulsory regular lecture.

We added a remark on this to the text (page 5):
Students were recruited from randomly selected study groups.

The entire, adapted, paragraph now is:
Data were collected in April and November 2004. The sample consisted of 882 first-year students at two universities located in Kosice (230,000 inhabitants) the P.J. Safarik University (7000 students) and the Technical University (12,000 students) who complete a questionnaire concerning health behaviour under the guidance of field workers during a compulsory lecture. Students were recruited from randomly selected study groups provided by the faculties concerned and their participation by the students was voluntary. All procedures concerning data collection were explained to respondents before data collection.

4. 
**R:** Were there any inclusion/exclusion criteria for the students?

**A:** We did not use any inclusion/exclusion criteria except for the one mentioned (i.e. that students were in the first grade of their study).

5. 
**R:** How many exactly returned the questionnaire? (Response rate) and how many questionnaires were left incomplete? (Missing data).
A: Together 7 students left the room before the beginning and 43 questionnaires were left incomplete. We added this information to the manuscript on page 6

We changed this text into:
Of the 882 students included, 7 left the room before the beginning and 43 were excluded afterwards because they left major parts of the questionnaire incomplete (altogether 50). A total of 832 responded (94.3%), 355 male and 477 female, with 90% of the students aged 19-23 years (mean 20.5; SD 1.4).

6.
R: What is your definition of short relationship?

A: In this specific question regarding having sex under risky conditions we did not define to the students what they could or could not report as a short relationship. We assumed that their own reflection would be the most proper way to answer this question