PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Pathways connecting socioeconomic variables, substance abuse and gambling behavior: a cross-sectional study on a sample of Italian high-school students.
AUTHORS	Buja, Alessandra; Mortali, Claudia; Mastrobattista, Luisa; Minutillo, Adele; Pichini, Simona; Genetti, Bruno; Vian, Paolo; Andreotti, Alessandra; Grotto, Giulia ; Baldo, Vincenzo; Pacifici, Roberta

VERSION 1 – REVIEW

REVIEWER	Adilson Marques Faculdade de Motricidade Humana, Universidade de Lisboa, Portugal
REVIEW RETURNED	25-May-2019

GENERAL COMMENTS	Journal BMJ Open Title Pathways connecting socio-economic status and health-risk behaviors Manuscript ID bmjopen-2019-031737 Comments Thank you for the opportunity to read this paper. After reading the paper I have some comments and concerns that I will address in the following comments. Abstract Page 5, lines 10-15. The first sentence of the introduction can be deleted because it does not add anything meaningful to the article. Introduction Page 7, line 18. The relationship between pathological gambling and comorbidities for alcohol-related disorders should be eliminated. The article does not address this particular issue. By keeping this idea here, we should also explore the comorbidity rates associated with other dependencies. The introduction and the title do not seem to coincide. When reading the introduction the reader does not know that the article is related to gambling risk factors. This should be better explained in the title. Methods There is no mention of the ethics committee approval.

Page 10, line 40. What was the criterion for grouping the ages in this way?

Page 10, lines 40-56. How were the variables (education, employment status, and household income integrated to calculate ESE? This should be explained clearly.

Page 11, line 47. The first sentence of the Statistical analysis subsection can be deleted.

Page 11, line 52-54. Please specify the "other variables".

Results
If possible, please add a table (table 1) with participants' characteristics.

Table 1 presents the bivariate relationship between SES variables and risk behaviors. However, this relationship is not always real, because the analyzes are not adjusted. Thus, I suggest that the analyzes be done through logistic regression, in which risk behaviors enter as dependent variables, and the SES variables enter as independent variables. A model must be made for each risky behavior. With the logistic regression model, they will have the odds ratio and confidence interval, which is more important than p-value.

Reading the results section, I feel that the pathways were not properly explored. Theres is a figure and seem to be all.

Discussion
Page 18, line 19. I could see were the odds ration were presented in the results section.

Page 18, line 37. Delete "Error! Bookmark not defined."

REVIEWER	Professor Simon Coulton University of Kent UK
REVIEW RETURNED	25-Jul-2019

GENERAL COMMENTS	The authors present an interesting piece of research and a very readable, competent manuscript. There are a few minor issues they may want to take into account and I present them below 1. The authors have published similar studies in a similar population previously and I wondered whether it was worth comparing the results of these studies with this one. I particularly note that the province of problem gambling in this population is almost threefold the prevalence reported in the 2013 survey of a similar population. 2. An issue I have with path analysis is the way it is represented. In my understanding with a survey such as this you are exploring the extent to which the data fits an underlying hypothesised model, is it worth putting some more detail regarding the hypothesised model in the manuscript.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Adilson Marques
Institution and Country: Faculdade de Motricidade Humana, Universidade de Lisboa, Portugal
Please state any competing interests or state 'None declared': none.

Please leave your comments for the authors below
Journal
BMJ Open

Title
Pathways connecting socio-economic status and health-risk behaviors

Manuscript ID
bmjopen-2019-031737

Comments
Thank you for the opportunity to read this paper. After reading the paper I have some comments and concerns that I will address in the following comments.

Abstract
Q1 Page 5, lines 10-15. The first sentence of the introduction can be deleted because it does not add anything meaningful to the article.

R1 We have deleted the sentence.

Introduction
Q2 Page 7, line 18. The relationship between pathological gambling and comorbidities for alcohol-related disorders should be eliminated. The article does not address this particular issue. By keeping this idea here, we should also explore the comorbidity rates associated with other dependencies.

R2 Thank you for your suggestion. The mention of alcohol-related disorders has been omitted and the sentence has been changed as follows: "Previous studies found that pathological gambling was often associated with alcohol, nicotine and substance dependence, suggesting that each of these types of behavior may serve as a primer for the others".

Q3 The introduction and the title do not seem to coincide. When reading the introduction the reader does not know that the article is related to gambling risk factors. This should be better explained in the title.

R3 The title has been changed as follows: "Pathways connecting socioeconomic variables, substance abuse and gambling behavior: a cross-sectional study on a sample of Italian high-school students".

Methods
Q4There is no mention of the ethics committee approval.

R4 Thank you for pointing this out. We have now added the following sentence: "This study was approved by the ethics committee of the National Health Institute."

Q5Page 10, line 40. What was the criterion for grouping the ages in this way?

R5 We divided the age range of the sample of students into two symmetrical groups.

Q6 Page 10, lines 40-56. How were the variables (education, employment status, and household income integrated to calculate ESE? This should be explained clearly.

R6 The abovementioned variables were individually entered in the analysis, so we did not use a combined variable to calculate socioeconomic status. This affords a better understanding of the role of the single variables in the pathway analysis. When we wanted to mention these groups of variables in the body of the manuscript we referred to them as "socioeconomic status" because they are typically considered indicators of socioeconomic status, but as this could be confusing, we have replaced the term "status" with "variables".

Q7 Page 11, line 47. The first sentence of the Statistical analysis subsection can be deleted.

R7 We have deleted the sentence as suggested. Thank you.

Q8 Page 11, line 52-54. Please specify the "other variables".

R8 We have specified the variables by modifying the sentence as follows: "A set of Pearson's chi-squared tests was used to highlight any associations between each health-risk behavior (gambling, alcohol consumption, smoking and cannabis use) and the demographic and socioeconomic variables (sex, age bracket, weekly income, level of economic dissatisfaction, paternal education, maternal employment, paternal employment, death of a parent, type of school, and geographical area)."

Results
Q9 If possible, please add a table (table 1) with participants' characteristics.

R9 We have added Table 1 with the participants' characteristics

Q10 Table 1 presents the bivariate relationship between SES variables and risk behaviors. However, this relationship is not always real, because the analyzes are not adjusted. Thus, I suggest that the analyzes be done through logistic regression, in which risk behaviors enter as dependent variables, and the SES variables enter as independent variables. A model must be made for each risky behavior. With the logistic regression model, they will have the odds ratio and confidence interval, which is more important than p-value.
Reading the results section, I feel that the pathways were not properly explored. Theres is a figure and seem to be all.

R10 The aim of this study was to create a pathway model comprehensively describing how the variables considered were associated with multiple outcomes and the statistical method used for this purpose was a multivariate regression analysis, which connects independent variables with multiple outcomes. A single logistic regression analysis would not allow us to describe the association between independent variables and more than one dependent variable, and does not enable a pathway to be built.

Discussion
Q11 Page 18, line 19. I could see were the odds ration were presented in the results section.

R11 We have deleted the repetition. Thank you for your suggestion.

Q12 Page 18, line 37. Delete "Error! Bookmark not defined."

R12 Thank you for noticing this error. It has been deleted.

Reviewer: 2
Reviewer Name: Professor Simon Coulton
Institution and Country:
University of Kent
UK
Please state any competing interests or state 'None declared': none

Please leave your comments for the authors below
The authors present an interesting piece of research and a very readable, competent manuscript.
There are a few minor issues they may want to take into account and I present them below

Q1b The authors have published similar studies in a similar population previously and I wondered
whether it was worth comparing the results of these studies with this one. I particularly note that the
province of problem gambling in this population is almost threefold the prevalence reported in the
2013 survey of a similar population.

R1b In the study referring to the 2013 survey the two categories - at risk gamblers and problematic
gamblers - were considered separately, and their prevalence was 4.1% and 3.1%, respectively. In the
present study we pooled both problematic and at risk gamblers into the same category, as explained
in the Methods section ("For the purpose of this study, the variable assessing gambling behavior was
divided into two categories: non-gamblers and non-problem gamblers vs at risk and problem
gamblers".), and their prevalence was 6.5%. So the prevalence of problem/at-risk gambling is actually
similar in the two studies.

Q2b. An issue I have with path analysis is the way it is represented. In my understanding with a
survey such as this you are exploring the extent to which the data fits an underlying hypothesised
model, is it worth putting some more detail regarding the hypothesised model in the manuscript.

R2b We have added the following sentences in the Methods section. "Previous studies found that
people who gambled also tended to have problems with substance abuse, and that certain
sociodemographic factors were shared with determinants of these health-risk behaviors. No studies
currently available in the literature have considered a broader framework, however, to test for the
existence of a comprehensive structure of associations. We use a path analysis to test these
associations. Such an approach can be useful in planning multi-component public health care and
prevention programs."

REVIEWER	Adilson Marques Faculdade de Motricidade Humana, Universidade de Lisboa
REVIEW RETURNED	06-Sep-2019

GENERAL COMMENTS	I am pleased with the authors' revision.

REVIEWER	Professor Simon Coulton University of Kent UK
REVIEW RETURNED	14-Sep-2019

GENERAL COMMENTS	The authors have responded to the previous review and addressed the issues raised