Reviewer's report

Title: Predicting nicotine dependence profiles among adolescent smokers: The roles of personal and social-environmental factors in a longitudinal framework

Version: 1 Date: 6 November 2011

Reviewer: Jennifer O'Loughlin

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Major Compulsory Revisions

Methods

1. The nicotine dependence profiles are interesting. However, it is possible that these simply represent novice smokers at different stages of the smoking onset process, especially given the description of how individuals changed over time in terms of these profiles. If these classes in fact represent individuals at different stages, how does this influence the interpretation of the data?

2. Can the authors develop the argumentation that the four nicotine classes differ? Figure 1 seems to suggest that the shape of each class is the same – they simply have different intercepts.

3. Was the original LCA conducted in the same sample or an entirely different sample?

4. The rationale for using an analytic strategy that compares one class to another seemingly as separate variables is not well justified. How efficient is this approach? Was clustering by school or by student over time taken into account?

Results

1. The titles of the tables and figures will need to be reworked so that it is clear what the objective of the table is and what data they include. In addition used of unclear variable labels will need to be revised. In general tables should be independently interpretable without having to refer to the text (for example, Table 2 is difficult to interpret as presented).

2. In step 1, how is it possible that none of the smoking-related variables (age of initiation, smoking frequency, smoking quantity) are statistically significant? Since the outcome is nicotine dependence (in essence) one or all of these must be related. Did the authors check for multi-collinearity?

3. Multiple testing may be an issue here, especially with the interaction terms tested. How many models were run? Was multiple testing taken into account and corrected?

Discussion

1. Careful revision of the wording in the manuscript is needed so that cigarette smoking is distinguished from nicotine dependence……these are confused in some parts of the manuscript. The notion that these are different constructs and
therefore may have different predictors is not carefully developed in the manuscript.

2. While tailored interventions may be needed, how specifically do the authors think these can be implemented realistically given the generally low levels of funding available for public health programs.

3. The measurement of nicotine dependence is not cited as a possible limitation. The Fagerstrom for example includes items that measure smoking, and yet smoking frequency is used as a control variable. This means that smoking frequency is included on both the left and right-hand side of the models, which is conceptually flawed.

Minor Essential Revisions

Abstract

1. The objectives as described in the abstract are very general, whereas the introduction suggests that the researchers are testing a specific hypothesis about personality characteristics. The objectives in the abstract should be re-worked to match those in the introduction.

2. Please describe the 4 dependence profiles in the abstract

3. How specifically do these results inform interventions?

Introduction

1. Why is tobacco referred to as a recreational substance? Please provide a reference for this terminology.

2. The introduction should provide 1-2 sentences that describe what is already known about the risk factors for nicotine dependence in adolescents

3. The paragraphs on the measurement of nicotine dependence is quite interesting but may be better positioned in the methods section, when the methods for ascertaining nicotine dependence are described.

4. The manuscript will need editing to improve grammar, to assure that the meaning of the sentences are clear, to assure that each section does not overlap with others (i.e., analytic methods are mentioned in the last paragraph of the introduction – these should be described in the data analysis section), to correct run-on sentences, and to minimize redundancy.

Methods

1. How would the authors characterize their study design since the outcome is prevalent (not incident) nicotine dependence?

2. While the schools were selected randomly, is there any assurance that the telephone book provided a complete listing of all schools in each region? Can the authors conclude that the sample was a representative population-based sample?

3. What proportion of respondents had graduated?

4. Only 169 of the 219 baseline smokers were classified as smokers at T2 – what status was given to the 23% who denied smoking at T2?
Discretionary Revisions
None

Level of interest: An article of importance in its field

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’