Reviewer's report

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

Version: 2 Date: 7 December 2011

Reviewer: Jennifer Rose

Reviewer's report:

The quality of the manuscript has been improved by this latest round of revisions. The reviewers’ comments appear to be adequately addressed. The clarification that the goal of the study was to identify predictors of the latent classes, as opposed to validating them, was particularly important as it resolved some of the issues described by Reviewer 2. For example, it makes perfect sense that Time 1 smoking frequency be included as a covariate in the analysis even though Time 2 smoking frequency was a classification variable in the LCA. It is important to separate out differences in the classes related to Time 1 smoking frequency in order to avoid potential confounding of Time 1 smoking frequency with the Time 1 personality and social environment predictors (see Reviewer 2, Comment #3 under Discussion header). The authors now discuss this rationale. Had the goal been validation of the classes, then it would have been inappropriate to include Time 1 smoking frequency in the analysis.

In addition, the more detailed description of the analytic strategy helps to clarify the efficiency of using a multinomial regression approach, which provides a comparison of each progressively more severe dependence class with the previous class. Although the authors indicate that the classes may be considered ordered by severity, the alternative method (ordinal logistic regression) is not ideal given that the restrictive proportional odds assumption often does not hold. This is especially likely given that qualitative differences between classes were identified, and are now explained in more detail. By using multinomial regression, which allows the odds for class comparisons to vary, this assumption is no longer necessary. The authors also appropriately accounted for uncertainty in class membership in the analysis.

Level of interest: An article of importance in its field

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.