Reviewer's report

Title: Early pubertal onset and its relationship with sexual risk taking, substance use and anti-social behaviour: a cross-sectional study

Version: 2 Date: 5 July 2009

Reviewer: Steve Shoptaw

Reviewer's report:

This is an interesting report of outcomes from two samples studying self-assessed age of pubertal onset with recall of risk behaviors during and after onset of puberty. While there are substantial strengths to this report, including an outstanding introduction, careful definition of predictor and criterion variables, and a straightforward writing style, there are weaknesses that greatly diminish the ability for the authors to put forward an evidence-based argument that might guide health and social policy for maturing young adolescents. These include biases that spring from two different convenience based samples (one paper-based, one Internet based), biases due to recall regarding risk behaviors in relation to age of puberty, lack of careful description of the two samples that might better define the limits of the findings assembled, and using these data to make recommendations regarding education/prevention approaches to all maturing young adults instead of to groups of maturing young adults similar to those sampled. At best, these data are strong enough only to guide hypothesis generation for future work. As noted below, the report needs to be in keeping with the type of data that are reported.

Specific Comments:

1. The overall writing style for the paper is clear and direct.

2. A strength to the paper is the comprehensive and succinct review of the factors currently considered as correlated with early pubertal onset and the care the paper takes with defining age of puberty onset for males and females separately.

Major Compulsory Revisions:

1. A major weakness to the paper is that the inclusion of the Internet recruited sample introduces substantial biases by interfering with understanding who, exactly, the participants are. Just eyeballing Tables 1a and 1b, Female participants in the Internet dataset (compared to paper) were more likely to be older, have more childhood illnesses and be poorer growing up. Males in the Internet dataset (compared to paper) were more likely to be older, be gay/bisexual and have more childhood illnesses. These differences highlight a historical bias, which is recognized as an important factor in childhood obesity and early onset puberty.
2. The problem with these biases is magnified by repeated assertions that the two samples are considered as “independent” and as convenience samples, but the paper then makes sweeping generalizations/conclusions on health and social policy for maturing early adolescents. The biases inherent to these samples interfere with making any full-fledged generalizations or conclusions. The findings need to be constrained to guiding future confirmatory research.

3. It is disappointing that no hypotheses were proposed to guide the analyses, especially in light of the very thorough introduction section that set the stage for defining the variables measured. Providing some evidence showing expected (or by contrast, surprising) outcomes from the data analyses would help, especially since there are no family-wise alpha corrections made to reduce risks for Type I errors (which needs to be conducted in any revision of this report).

Minor Essential Revisions:
1. The number of male and female subjects for “age at survey” in Tables 1a and 1b do not equal the number of participants listed in the method section. As this would seem to be the most complete analysis, what happened to the missing participants?

2. Along this line, please explain how missing data were managed.

3. It is not appropriate to label Table 1a as “Age of Menarche” and 1b as “Age of Puberty” given the variables in the column were the “independent (or predictor) variables.” The dependent or criterion variables were age of menarche and age of puberty (as noted in the table legends).

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests with this manuscript.