Reviewer’s report

Title: Age at menarche in Canada: results from the National Longitudinal Survey of Children & Youth

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Reviewer: Paul Kaplowitz

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This is an interesting study looking at the age of menarche in a representative population of Canadian girls. The overall finding of the mean age of menarche at 12.72 years is not surprising and close to what US studies have found. Differences between provinces in % of early-maturing girls are larger than I would have guessed, but in at least one case, New Brunswick, the number of girls in the sample was so small that the 30% figure should be interpreted with caution.

1. The authors should speculate more on how differing ethnic compositions could account for some of the differences across provinces.

2. The biggest flaw in this study is that there is no information (presumably because height and weight were not available) on how BMI would affect the results, as there is abundant evidence that high BMI SD score is a major risk for earlier menarche. Unlike in the past when low economic status was often associated with thinness, in the US there is evidence that obesity is more prevalent in low SES families due to poor nutritional choices, and it is tempting to speculate that the finding of less early and more late puberty in higher SES families is due to their lower rates of obesity. Could the authors comment on this?

3. The finding of a higher % of early puberty in girls who live with one parent is a very interesting finding which has many possible interpretations and future studies should explore this aspect in more detail.

4. The authors cite reference 13 as evidence that the mean age of menarche in US girls has declined significantly between 1991 and 2005-6, but the actual changes for specific ethnic groups is fairly modest and it is quite possible that the decrease in the mean age of menarche is due to ethnic groups with lower mean age at menarche being over-represented in the sample.

5. On page 9, the sentence: Roman et al. (2003) showed that girls without fathers are 2.62 times (95% CI: 1.58–4.33) more likely to have menarche before the age of 12 years [27] should be modified as I believe they are referring to "without fathers in the home" rather than without fathers.

Level of interest: An article of importance in its field

Quality of written English: Acceptable
**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