Reviewer’s report

Title: Adverse Childhood Experiences and Frequent Insufficient Sleep in 5 U.S. States, 2009

Version: 2 Date: 1 October 2012

Reviewer: Karolin Roeser

Reviewer’s report:

Minor issues not for publication
1. The title on the title page differs from the title placed before the background section. Please use the correct title consistently.

2. The authors introduce ACE as an abbreviation in the abstract, 1st paragraph. Please consistently use this abbreviation throughout the manuscript (Abstract, 1st paragraph, 2nd sentence and Background, 5th paragraph).

3. The structure of the 1st sentence of the methods section needs to be revised.

Discretionary Revisions
1. It would be helpful if the authors specified “psychological factors” and “traditional risk factors” referred to in the background section, 1st paragraph.

2. Please provide the distribution of ACE scores (median, range) and explain why, of all scores, 5 or more were combined into one category (Methods section, Adverse childhood experiences, last paragraph).

3. In the results section, please indicate whether or not the study sample was representative of the total population.

4. In the discussion section, 3rd paragraph, the authors correctly state that sleep disturbance is a criterion for the diagnosis of depression. Moreover, post-traumatic stress disorder is also characterized by sleep problems/nightmares and could possibly result from childhood abuse. The authors may wish to include this aspect in their discussion section.

5. The authors may wish to comment on the different strengths of associations between single ACEs and insufficient sleep.

Minor Essential Revisions
1. Table 2 provides prevalence of insufficient sleep per percentage, but absolute numbers (N) do not reflect frequency of insufficient sleep.

Major Compulsory Revisions
1. In the results section of the abstract, the authors state that “All relationships were modestly attenuated by smoking and FMD, but remained significant.” However, in the result section of the manuscript (Mediating effects, last paragraph), it reads “However, frequent insufficient sleep was no longer significant for the associations with an incarcerated household member.
(AOR=1.23[0.95-1.60]), or parental divorce/separation (AOR=1.14[0.99-1.32]) with the addition of FMD to the model." Please clarify these inconsistent statements.

2. In the background section, 1st and 2nd paragraph, the authors describe associations of ACE and negative behavioral and health outcomes in adults. Could the authors provide any findings or hypotheses on the mechanisms underlying these associations? As “ACEs have been demonstrated to be highly interrelated to each other” (Background section, 2nd paragraph), one may speculate that the presence of ACEs might also increase the risk of having adverse experiences after age 18, which was not controlled for in the study.

3. The negative behavioral and health outcomes that the authors name in association with ACEs (substance abuse, depression, medication, somatic conditions, etc.) could contribute to or result from insufficient sleep. Apart from these variables and the covariates assessed, other confounding factors, such as primary sleep disorders, previous sleep problems in childhood, unfavorable living conditions or work schedules might have influenced participants’ sleep. Please explain why smoking was considered a potential mediating factor while other parameters affecting sleep were not accounted for?

It should be discussed that these variables might have contributed to sleep difficulties or mediate the relationship of ACEs and insufficient sleep. The authors might consider excluding individuals with current mental or physical illness and medication/substance use from the sample or controlling for these confounding factors on participants’ sleep.

4. Operationalization of the parameters assessed leaves questions unanswered:
   • “Not enough rest or sleep” does not unambiguously refer to sleep quality or sleep duration.
   • Is there any information available on onset and persistence of insufficient sleep?
   • Where previous sleep problems in childhood also assessed?
   • Why does physical abuse not include spanking?
   • Why is sexual abuse limited to offenders at least 5 years older than the victim?
   • FMD is only vaguely operationalized and its definition includes negative behavioral and health outcomes previously listed in association with ACEs (depression, emotional problems). The association of ACEs and FMD could therefore be circular logic.

5. In what way may “assessment of ACEs be useful in the evaluation of sleep insufficiency” (Abstract, conclusions section)? The authors should further elaborate on the implications of their findings in the discussion section.

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