Reviewer’s report

Title: Interaction of sleep quality and psychosocial stress on obesity in African Americans: the Cardiovascular Health Epidemiology Study (CHES)

Version: 1 Date: 15 June 2010

Reviewer: Kristen L. Knutson

Reviewer’s report:

This paper examines the cross-sectional association between sleep quality, stress and BMI in a sample of African-Americans. The question of whether stress mediates the association between sleep and BMI in African Americans is an important one, however, I have some comments that need to be addressed.

Major Compulsory Revisions

# The major limitation to this analysis is the use of self-reported height and weight and a single sleep questionnaire (also self-report). The authors must include this limitation in the discussion.

# The authors alternate between PSQI divided into 3 categories versus tertiles. For example, Table 1 & Table 3 use the categories, but Table 2 uses the tertiles. In the text, they alternate as well, which is confusing. For example, on page 6 the second paragraph under the results that discusses Table 1 states, ”…sleep quality categorized into tertiles.”, but Table 1 does not use the tertiles. The authors should only use one of these methods (tertiles or categories). Also, the authors should explain why they are using 3 levels rather than the standard PSQI dichotomy of <=5 versus >5 (see Buysse et al, Psych Res 1989). Once the authors select which 3-level PSQI variable to use, then Table 1 & 2 can be combined. Finally, if tertiles are used, the authors should state what the PSQI score ranges are within each tertile.

# Please add self-reported sleep duration to Table 1 and describe it in the Methods section.

# In the Introduction & Discussion the authors erroneously state that no association was observed between habitual sleep duration and quality and BMI in the CARDIA study. See Lauderdale et al, AJE, 2009.

# The authors transition between sleep duration and sleep quality as if they are the same measure (e.g. in the Introduction the first paragraph discusses sleep duration and the second discusses sleep quality). The authors need to be clear about the distinction between these measures in both the introduction & the discussion.

# Table 4 is unnecessary and the information can just be included in the text.

Minor Essential Revisions

# In the Methods section, state the possible responses for the physical activity
question (yes/no).

# In Table 1 there is a mistake under Physical Activity – No for low stress “107 (80.8)”.

# The results in Table 3 are confusing, specifically what the p value represents. For example, the OR for low stress & sleep quality groups are not significant based on the confidence intervals, but he p value is .04. The description “p-value of significance of regression coefficients” is unclear. Please edit this table for clarity.

# The following sentences in the discussion are unclear: “Somewhat surprising was the finding that among obese participants more had a health sleep, but the number of those with poor sleep was very close” (Page 8, first paragraph) and “Against these caveats are a thorough assessment of psychosocial stress and a complete Pittsburgh sleep questionnaire” (page 10).

Discretionary Revisions

# The authors should consider stratifying by two age groups, e.g. 30-49y & 50-65y since other studies have reported stronger associations between sleep & BMI in younger groups (<50y).

**Level of interest:** An article whose findings are important to those with closely related research interests

**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.