

APPENDIX B

Jackson Heart Study Manuscript Proposal Form

Please read JHS Publications & Presentations Guidelines before completing this proposal form.

JHS P # 0631

Date of Submission: 08/12/2015

Date of Approval: ___ (09/15/2015)

PART I. OUTLINE OF PAPER

1. Title Information

- a. Proposal Title: Association between sleep and obesity in African Americans in the Jackson Heart Study
- b. Abbreviated Title: Sleep and obesity in African Americans
- c. Suggested key words: sleep; sleep quality; sleep duration; obesity; African Americans; Jackson Heart Study; BMI; waist circumference

2. Lead Author Name: Trimella Jefferson

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- 3. Co-authors, Contact Information, and Responsibilities:** (Proposed co-authors, Email address and/or telephone numbers and proposed responsibilities. Examples of responsibilities include design and concept of study, statistical analysis, data acquisition, methodological expertise, funding acquisition, literature review. Also indicate specific writing assignments including: introduction methods, results, discussion, preparation of tables and figures. Items not assigned to a co-author are assumed to be the responsibility of the lead author. Corresponding author should also be identified if it is not to be the lead author.)

Name	Contact Information	Responsibilities
Adam Knowlden	Department of Health Science, The University of Alabama P.O. BOX 870311 Tuscaloosa, AL 35487-0311 Phone: (205)348-1625	-- Statistical analysis -- Preparation of Tables & Figures -- Writing Results -- Assistance in writing

	Fax: (205)348-7568 aknowlden@ches.ua.edu	discussion
Manoj Sharma	Behavioral & Environmental Health, Jackson State University 350 West Woodrow Wilson Ave. Jackson, MS 39213 Phone: (601)979-8850 Fax: (601)979-8848 manoj.sharma@jsums.edu	-- Design & concept of study -- Data acquisition -- Statistical analyses -- Literature review -- Statistical analysis -- Assistance in writing entire manuscript
Marinelle Payton	Center of Excellence in Minority Health and Health Disparities 350 West Woodrow Wilson Ave, Suite 2280 Jackson, MS 39213 Phone: (601)979-8817 Fax: (601)979-8816 marinelle.payton@jsums.edu	-- Literature review -- Critical review of entire manuscript
Clifton Addison	Jackson Heart Study, Jackson State University 350 West Woodrow Wilson Dr, Suite 2900B Jackson, MS 39213 clifton.addison@jsums.edu	-- Literature review -- Critical review of entire manuscript
Brenda Jenkins	Jackson Heart Study, Jackson State University 350 West Woodrow Wilson Dr, Suite 2900B Jackson, MS 39213 Phone: (601)979-8731 Fax: (601)979-8701 brenda.w.campbell@jsums.edu	-- Literature review -- Assistance in writing Introduction & Discussion

4. Non-JHS Lead Authors: Non JHS Lead authors are required to have a JHS co-author and primary contact person (indicate with an asterisk). Non-JHS Lead Authors are encouraged to visit the JHS website at www.jacksonheartstudy.org for information on JHS investigators. The JHS Steering Committee may nominate additional authors if special expertise for interpreting JHS data is needed)

5. Brief Overview: In 250 words maximum, provide a brief overview of the proposal including the nature of the problem to be addressed, scientific relevance, objectives/aims, research question/hypotheses, and methods/analytical plan. This overview will be posted on the internal JHS website.

Previous cross-sectional and longitudinal studies have demonstrated an association between short sleep duration and obesity; however none of the studies have examined this relationship in African Americans. Short sleep duration has been suggested as a contributory factor toward obesity by increasing ghrelin, decreasing leptin, and conceding insulin sensitivity. Obesity is a known risk factor for cardiovascular diseases and several chronic diseases. The specific aim of this research

study is to study the association of sleep duration and poor quality of sleep with overweight and obesity as measured by BMI and waist circumference. It is hypothesized that short sleep duration will be associated with overweight and obesity in African Americans after adjusting for covariates. Likewise poor quality of sleep will also be associated with overweight and obesity in African Americans after adjusting for covariates. For this study the sample size has been calculated using G*Power with an alpha of 0.05, power of 0.80, 8 predictors and an effect size of 0.05 separately for men and women. The sample size has been found to be 309 for each group. Using SPSS Version 22.0, descriptive statistical analyses and inferential statistical analyses with stepwise multiple regression will be conducted. Results, discussion, recommendations and implications for practice will be presented.

6. Background/Rationale (Include the relevance of this proposal to African Americans and justify the need for the JHS cohort to answer the research question):

Previous cross-sectional (Anic et al., 2010; Gangwisch et al, 2005; Kohatsu et al, 2006; Taheri et al, 2004) and longitudinal studies (Gangwisch et al, 2005 Sayón-Orea et al., 2013; Vgontzas et al. 2013) have demonstrated an association between short sleep duration and obesity. It is postulated that short sleep duration contributes toward obesity by increasing ghrelin, decreasing leptin, and conceding insulin sensitivity (Taheri et al., 2004). However, none of these studies have been done with African American population. There is a definitive need to test this hypothesis with African American population along with the role of poor sleep quality on BMI and waist circumference.

7. Research Hypotheses:

Short sleep duration after adjusting for sex, age, educational achievement, household income, depressive symptoms, physical activity score, marital status, alcohol consumption, and snoring will be associated with higher BMI and higher waist circumference in African Americans. This association will hold true for both men and women. Further, greater signs of poor quality of sleep such as snoring, stopping breathing while sleeping, sleeping during day, feeling tired after sleeping, feeling sleepy while driving, sleeping with two pillows to help breathe, disturbed while trying to sleep, and sleeping poorly will be associated with higher BMI and higher waist circumference in African Americans.

8. Data: (Visits and variables to be used, sample inclusions/exclusions)

Dependent variables (from Exam 3):

- BMI
- Weight
- Waist circumference

Independent variables (from Exam 3):

- Sleep duration (Hours of actual sleep)
- Snoring
- Stop breathing when sleeping

- Sleep during day
- Tired after sleeping
- Sleepy while driving
- Overall quality of sleep
- Sleep on two pillows to help breathe
- Sleep poorly

Covariates (From Exam 3):

- Age
- Sex
- Education
- Household income
- Depressive symptoms
- Marital status
- Alcohol consumption
- Physical activity score
- Snoring

9. Brief Statistical Analysis Plan and Methods: (Including power calculations, if necessary.)

For this study, the sample size was calculated using G*Power with an alpha of 0.05, power of 0.80, 8 predictors and an effect size of 0.05 separately for men and women. The sample size was found to be 309 for each group. Using SPSS Version 22.0, descriptive statistical analyses and inferential statistical analyses with stepwise multiple regression will be conducted.

10. References: (Maximum 15)

Anic GM, Titus-Ernstoff L, Newcomb PA, Trentham-Dietz A, Egan Kathleen M. Sleep duration and obesity in a population-based study. *Sleep Med.*2010;11:447-51.

Gangwisch JE, Malaspina D, Boden-Albala B, Heymsfield SB. Inadequate sleep as a risk factor for obesity: Analyses of the NHANES I. *Sleep.* 2005; 28(10):1289-96.

Kohatsu ND, Tsai R, Young T, VanFilder R, Burmeister LF, Stromquist AM, Merchant JA. Sleep duration and body mass index in a rural population. *Arch Intern Med.* 2006;166: 1701-05.

Marshall NS, Glozier N, Grunstein RR. Is sleep duration related to obesity? A critical review of the epidemiological evidence. *Sleep Med.* 2008; 12:289-98.

Patel SR, Hu FB. Short sleep duration and weight gain: A systematic review. *Obesity.* 2008;16(3):643-53.

Sayon-Orea C, Bes-Rastrollo M, Carlos S, Beunza JJ, Basterra-Gortari FJ, Martinez-Gonzalez MA. Association between sleeping hours and siesta and the risk of obesity: the SUN Mediterranean Cohort. *Obes Facts* 2013;6:337–47.

Taheri S, Lin L, Austin D, Young T, Mignot E. Short sleep duration is associated with reduced leptin, elevated ghrelin, and increased body mass index. *PLOS Medicine*. 2004 Dec; 1(3):210-217.

Vgontzas AN, Fernandez-Mendoza J, Miksiewicz T, Kritikou I, Shaffer ML, Liao D, et al. Unveiling the longitudinal association between short sleep duration and the incidence of obesity: the Penn State Cohort. *Int J Obes (Lond)* 2014;38:825–32.

Wu Y, Zhai L, Zhang D. Sleep duration and obesity among adults: a meta-analysis of prospective studies. *Sleep Med*. 2014;15: 1456-62.

Xiao Q, Keadle SK, Hollenbeck AR, Matthews CE. Sleep duration and total and cause-specific mortality in a large US Cohort: Interrelationships with physical activity, sedentary behavior, and body mass index. *Am J Epidemiol*. 2014; 180 (10): 997-1006.

PART II. AUTHOR CONTRIBUTIONS

11. Have all co-authors reviewed and approved this document? Yes (Required)
12. Does the lead author (or designee) agree to present findings at a JHS Colloquium? or Seminar? Yes (required)

PART III. ADDITIONAL INFORMATION

13. Is this manuscript proposal based on an Ancillary Study? Yes No
If yes, please provide the ASC # _____.

14. Type of Study:

Full Cohort Family Study Sub-Study
 Ancillary Study Case Control Other (list):

15. Type of Data:

Longitudinal Cross-Sectional Other (list):

16. Location of Statistical Analysis:

Central (by Jackson Heart Study Staff)
 Local (SPSS version 22.0)

17. Genetic Information:

- a. Do you propose use of data from a participant's DNA? Yes (see b) No
b. If yes, for a primary aim or secondary aim of JHS? (Please check one or both)
 Primary Aim (heart, vascular disease) Secondary Aim (other conditions)

18. Conflict of Interest

- a. Are these analyses to involve a for-profit corporation? Yes No
b. Do you or any member of your Writing Group intend to patent any process, or aspect of outcome from these analyses? Yes No

19. Data Sharing Agreement

Has the Lead Author and any co-authors who will have direct access to JHS data signed the JHS Data Sharing Agreement? Yes (Required)

20. JHS Manuscript Overlap

The Lead Author is responsible for reviewing the manuscript list on the JHS website <http://jhs.jsums.edu/jhsinfo>, listing the JHS manuscripts / manuscript proposals that are similar to the one he/she is proposing and justifying the differences and similarities. The lead author is encouraged to contact lead authors of the most related manuscript proposals for comments on the new proposal or collaboration.

- a. Similar manuscripts / proposals : No Yes
b. If "yes", list MS # title and Lead Author below)

21. Manuscript Completion

It is expected that the manuscript will be completed in less than one year. The manuscript proposal will expire if no manuscript is submitted for JHS review at the end of one year from the date of approval. If additional time is needed after one year, the Lead Author should request an extension from the Publications and Presentations Subcommittee.