

APPENDIX B

Jackson Heart Study Manuscript Proposal Form

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

JHS P # 0645

Date of Submission: 10/09/2015

Date of Approval: ____ (11/23/2015)

Daniel Hale Williams GTEC Scholar

PART I. OUTLINE OF PAPER

1. Title Information

a. Proposal Title: (Please include the phrase “Jackson Heart Study” whenever possible)

“The Effects of Perceived Discrimination and Community Violence Exposure on the Cardiovascular Health of African Americans: Jackson Heart Study”

b. Abbreviated Title: (50 characters)

Discrimination and Violence on Cardiovascular Health

c. Suggested key words:

Discrimination, Violence, Cardiovascular Health, African Americans

2. Lead Author Name: Princeton Smith

Institutional Affiliation: Jackson State University

Address: Department of Psychology
College of Liberal Arts Building-2nd Floor
1325 J. R. Lynch Street
P.O. Box 17550
Jackson, MS 39217-0350

Telephone: 601.979.2371 or 239.839.6959

Fax:

Email: kingofsmith@yahoo.com

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
Princeton Smith, M.S.	kingofsmith@yahoo.com 239-839-6959	Design and concept of study, statistical analysis, literature review, writing all sections of the manuscripts
Mario Sims, Ph.D.*	msims2@umc.edu	Corresponding author; Design and concept of study, methodological expertise, discussion
Clifton Addison, Ph.D.	clifton.addison@jsums.edu	discussion and review of manuscript
Brenda Jenkins, Ph.D.	brenda.w.campbell@jsums.edu	Discussion, lay summary

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.

Research has shown that African Americans are more likely to report perceived discrimination in major domains (i.e., health care settings, employment, criminal justice system, etc.) than non-Hispanic Whites or Hispanics/Latinos (Hausmann, Jeong, Bost, & Ibrahim, 2008; Hausmann, Kressin, Hanusa, & Ibrahim, 2010; Penner et al., 2009;). Prior studies have also found a substantial link between perceived discrimination and chronic diseases, such as heart disease (Wyatt et al., 2003; Chae, Lincoln, Adler, & Syme, 2010), obesity (Cozier et al., 2014) and hypertension (Sims et al., 2012) among Black/African descent populations. According to the Bureau of Justice and the National Crime Victimization Survey (2014), non-Hispanic Whites

were approximately three times more likely to be reported as victims of violent crimes than African Americans. However, African Americans had higher prevalence rates of exposure to violent crime (1.4%) than non-Hispanic Whites (1.1%) (Bureau of Justice Statistics [BJS], 2014).

This study will examine the extent to which perceived discrimination and community violence are associated with obesity and cardiovascular disease (CVD) prevalence rates for African Americans in the Jackson Heart Study (JHS). Historically, the Southern region of the United States has been a particularly oppressive and prejudiced location for African Americans and other people of color. Research analyses will include a two-way multivariate analysis of variance, two multiple linear regressions, and a factorial analysis of variance. We hypothesize that the perceived discrimination and community violence will be positively associated with obesity and CVD prevalence. The implications from the study may serve to supplement the existing body of literature concerning the consequences of perceived discrimination and community violence on the physical health of African Americans.

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):

It is well-known that CVD is one of the leading causes of death among African Americans (American Heart Association [AHA], 2015). Cardiovascular comprehensive is a term to classify an array of diseases that affect the circulatory system (e.g. arrhythmia, angina, cardiomyopathy, coronary heart disease, etc.). Heart attacks and strokes are the initial signs of CVD. Although there are many risk factors for CVD among African Americans, excessive body weight (e.g. overweight and obesity) is one of the most salient. Previous studies indicated a positive association between obesity and CVD prevalence rates (Lavie, Milani, & Ventura, 2009; Zalesin et al., 2011; Marinou et al., 2010). However, more recent studies are now investigating the social determinants that influence the cardiovascular health of African Americans (Lang et al., 2012; Quarells, Liu, & Davis, 2012). To our knowledge, no study has examined the effects of perceived discrimination and community violence exposure on the CVD among African Americans.

Further understanding of how these variables relate to CVD should also improve approaches in conceptualizing, treating, and preventing cardiovascular disease. It is highly probable that stress mediates the effects of perceived discrimination and community violence exposure on CVD (Roux et al., 2001; Cubbin, Hadden, & Winkleby, 2000; Wilson, Kliever, & Sica, 2004). One logical method of assessing stress in human subjects is to examine their cortisol levels. Cortisol is a well-known steroid hormone produced from cholesterol within the adrenal glands that regulates multiple bodily processes. The stress hormone not only contributes to our physical responses to stress, but serves other functions such as managing glucose (e.g. sugar) and metabolism (control of fat for energy). However, increased cortisol levels are associated with adverse health consequences (Rosmond et al., 2003). Research has indicated that increased levels of cortisol are positively correlated with anger-provoking stimuli (Suarez et al., 1998). Elevations in daily life stress are linked to increased cortisol awakening responses, as well as increases in normal day and evening levels of cortisol (Kumari et al., 2010).

Prior studies have found a significant relationship between race and socioeconomic status, but the association does not completely account for the disparities of CVD in African Americans. Despite

this a direct relationship does exist between poverty (i.e. low SES) and violence (Ewart & Suchday, 2002; Pearlman, Zierler, Gjelsvik, & Oftedahl, 2003). Sociological research suggests that African Americans who live in poorer environments are at greater risk for exposure to violence (Garro, 2013). The lower SES of African Americans likely influences their ability to provide for themselves, their family, or community, which reflects the institutionalized racism confronted by AA in the United States. The intersection of perceived racial discrimination, high poverty, and educational disenfranchisement could possibly explain the increased violence in the African American community.

A study conducted by Weinstein et al. (2013) examined the salivary cortisol responses to a racially induced stimulus (video clip) in a sample of 245 African American participants. The study found a significant association with elevated cortisol levels in response to racially-charged stimulation. The findings of the study serve to explain the importance of cortisol as a potential mediator between discrimination and CVD risk factors. Obesity has been a constant epidemic for African Americans (especially in the American South) for many years. In general, African Americans were 1.5 times more likely of becoming overweight or obese than White Americans (Center for Disease Control and Prevention [CDC], 2011). The present study will be the first to investigate the effects of perceived discrimination and community violence exposure on cardiovascular health (e.g. CVD prevalence rates and overweight/obesity). The findings of this research will supplement the existing literature exploring the relationship between psychosocial/environmental risk factors and CVD. Equally important, is that this research will strengthen our knowledge base of the disparities in health for African Americans in the JHS.

7. Research Hypotheses:

Hypothesis 1: Perceived discrimination is a positive predictor of excessive body weight (e.g. overweight and obesity) and CVD prevalence.

Hypothesis 1a: A significant interaction exists between perceived discrimination and community violence exposure on excessive body weight and CVD prevalence.

Hypothesis 2: Cortisol levels will significantly mediate the association between perceived discrimination and CVD prevalence.

Hypothesis 3: Cortisol will significantly mediate the association between community violence exposure and excessive body weight. **8. Data:** (Visits and variables to be used, sample inclusions/exclusions)

Outcomes:

Baseline prevalent Obesity and CVD (Exam 1

BMI (derived variable)

Predictors:

Baseline everyday, lifetime and burden of lifetime perceived discrimination- (Exam 1)

Perceived neighborhood violence Exam 1 AF3A Questions 18-23

Cortisol

Covariates:

Age, sex and SES⁹. **Brief Statistical Analysis Plan and Methods:** (Including power calculations, if necessary.)

Statistical analyses for the present study will be conducted using the Statistical Package for the Social Sciences (SPSS) – Version 20.

Hypothesis 1: A one way multiple analysis of variance will be computed to examine the extent perceived discrimination significantly effects excessive body weight and cardiovascular prevalence.

Hypothesis 1a:

We will conduct a two way multiple analysis of variance to examine the extent perceived discrimination and significantly effects excessive body weight and cardiovascular prevalence, while controlling for community violence.

Hypothesis 2:

We will conduct two simple linear regression analyses and one multiple regression analysis to test for mediation. The first linear regression analysis will test the predictive association for perceived discrimination on CVD prevalence. The second linear regression analysis will examine whether perceived discrimination (IV) is a significant predictor of increased cortisol levels (DV). The multiple regression analysis will investigate the amount of predictability that both perceived discrimination (IV) and cortisol level (IV) have on CVD prevalence (DV).

Hypothesis 3:

We will utilize several regression analyses to examine H3. The first analysis will be a simple linear regression analysis to examine the predictive association of community violence exposure (IV) on excessive body weight (DV). Subsequently, another simple linear regression will be computed with community violence exposure as the predictor variable and cortisol level as the dependent variable. A multiple regression analysis will be run to explore the linear combination of community violence exposure (IV) and cortisol level (IV) on excessive body weight (DV). It is important to note that the body mass index will be implemented to provide cut off ranges for body weight with four distinct categories (e.g. underweight, normal weight, overweight, obesity). Secondary analyses will examine whether the sex had a substantial influence on the outcome of H1 (and H1a) and if there is a significant interaction between low income (IV) and low education (IV) on cortisol level (DV) using a factorial analysis of variance for H2 and H3.

10. References: (Maximum 15)

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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 (list site)

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.