

Co-PI Tanisha Burford, Ph.D.

Co-PI Charity Watkins, Ph.D.

The Pandemic of Stress: Examining the Relations among Occupational Status, Perceived Stress, Self-Rated Health, and Sleep during COVID-19

Background and Significance

Acute and chronic psychological stresses contribute to adverse behavioral and health outcomes (Gallo et al., 2014; McEwen, 2008). Research demonstrates that race and socioeconomic status (SES) strongly relate to stress, with racial minorities (e.g., African Americans) and those of low SES reporting higher levels of acute and chronic stress experiences (Williams et al., 1997). Studies have linked established racial and ethnic disparities in stress exposure to physical health morbidity (e.g., obesity, hypertension, and cardiovascular disease) and mortality, poor sleep, increased substance use, and poor psychological well-being (Pascoe & Richman, 2009). While low income and low educational attainment have been consistently and robustly associated with adverse physical health, research also shows that various occupational characteristics, including occupational prestige (e.g., blue collar vs. white-collar jobs), job control, job strain, job autonomy independently and interactively predict health. Specifically, research demonstrates that blue-collar job, low wage, low job control, low autonomy, high job strain and demand are deleterious for health and well-being (Niedhammer et al., 2008). In addition, studies demonstrate that employment status (full-time vs. part-time, unemployment vs. employment, essential vs. non-essential, etc.) and sudden and acute changes in employment status relate to the stress-health association (Mays et al., 1996). The research on occupational characteristics highlighted above underscores the relevance of employment stress and that work stress might be a key factor in socioeconomic disparities in disease risk. Further, the combined social disadvantages of race and class may increase the vulnerability of communities of color during daily stress as well as global crisis.

During any kind of cataclysm, African Americans are more likely to be vulnerable due to social position. Given the current coronavirus pandemic, African Americans may be experiencing more stress because of their occupation (e.g. blue vs. white collar) and employment status as essential vs. non-essential workers. The current coronavirus pandemic is impacting socially disadvantaged communities intensively, and has significant consequences for the mental and physical health of African Americans. Further, pandemic-related stress may further exacerbate adverse health outcomes and expand racial/ethnic disparities in physical health morbidity and mortality and mental health.

In the United States, analyses of COVID-19 have revealed noticeable racial ethnic disparities in the number of deaths, and the data suggest that COVID-19 has been particularly deadly for African American and Hispanic people compared to White Americans (Centers for Disease Control and Prevention [CDC], 2020). For example, in North Carolina, among the more than 20,000 confirmed cases of COVID-19, African Americans represent 32% of those infected by COVID-19, while accounting for only 22% of the population. In comparison, Whites comprise 54% of COVID-19 infection, and account for 71% of the state population (North Carolina Department of Health and Human Services [NCDHHS], 2020; U.S. Census Bureau, 2019). African Americans are twice as likely as Whites in North Carolina to die from COVID-19, and represent 36% of deaths (NCDHHS, 2020). These racial disparities in COVID-19 cases and deaths are not unique to North Carolina, and are documented in Chicago, Louisiana, Michigan, and New York.

Some health officials and scientists have offered biological explanations for racial disparities in COVID-19, suggesting that African Americans have higher rates of comorbidities /pre-existing conditions (e.g., diabetes and hypertension), which increases the odds of contracting the virus and death. In contrast, several scientists assert that comorbidities only explain some of the racial disparities and suggest that socioeconomic and environmental factors offer stronger explanation (Rollston & Galea, 2020; Whittle & Diaz-Artiles, 2020). For instance, African Americans are overrepresented in frontline essential jobs including in healthcare and social services, retail, and public transportation, placing them at higher risk of contracting the COVID-19 virus (Hawkins, 2020). Additionally, African Americans in urban regions are more likely to experience barriers to effectively self-isolate and physically distance because of community overcrowding and high housing density. Disparities in access to health care, including insurance enrollment, transportation to healthcare services, and COVID-19 testing further complicate existing disparities and contribute to racial differences in COVID-19

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treatment, resulting in the development of more severe COVID-19-related health complications and potentially death. African Americans have been more severely impacted by COVID-19-related unemployment, contributing to socioeconomic resource deficits that increase risks for food insecurity and homelessness. Given the precarious employment status of African Americans and the significant patterns of change in both employment status and economic standing/wages, it is important to understand how employment status during COVID-19 predicts stress, and the association of employment status with perceived stress, self-rated health, and sleep.

Specific Aims and Hypotheses

Aim 1: To examine differences in perceived stress among essential and non-essential workers.

Hypothesis: Essential workers will report higher perceived stress compared to non-essential workers.

Aim 2: To determine if differences in occupational status predict self-rated health.

Hypothesis 1a: Individuals of low occupational status (blue-collar job vs. white collar) will report poorer self-rated health than individuals of high occupational status. Hypothesis 1b: Similarly, essential workers will report poorer self-rated health compared to non-essential workers.

Aim 3: To determine if differences in occupational status predict sleep disturbances.

Hypothesis 1a: Individuals of low occupational status (blue-collar job vs. white collar) will report higher self-reported sleep disturbances (insomnia, and short sleep) compared to individuals of high occupational status.

Hypothesis 1b: Similarly, essential workers will report higher self-disturbances compared to non-essential workers.

Aim 4: To test the interactional of occupational status and perceived stress on self-rated health.

Hypothesis: Perceived stress will moderate the relationship between occupational status and self-rated health.

Analyses

Independent-sample T-test technique will be used to examine differences between essential and non-essential work status on perceived stress, self-rated health, and sleep disturbance. Hierarchical linear regression and structural equation modeling techniques will be used to assess the relations among occupational status, perceived stress, self-rated health, and sleep.

Method

Study Design and Procedure

The proposed study will employ a cross-sectional design to examine the research questions. Approximately 250 participants will be recruited from Durham County and Halifax County in order to determine if regional differences (urban vs. rural setting) account for differences in the occupational status and stress, self-rated health, and sleep. During Phase I, participants will complete a web-based (Qualtrics) survey that obtains demographic information (e.g. race, gender, age, occupation and employment status) and assesses perceived stress, self-rated health, and sleep. We propose that participants will receive a \$10 gift card for compensation for their participation. For Phase II, we will conduct a 3-month follow-up of approximately 100 participants to analyze patterns of changes in employment and/or occupational statuses predict perceived stress, self-rated health, health problems, and sleep.

Specific Roles and Responsibilities (10 % effort)

Drs. Watkins and Burford will commit 15% effort each to complete the proposed project during May-July 2020. Both Co-PI will be responsible for IRB application and adherence, participant recruitment, data collection, management, and analyses. This research incorporates basic science, behavioral health and community-based translational approaches. Finally, the proposed project has the potential generate new knowledge on the unique experiences of stress during COVID-19 among African Americans residing in rural and urban settings in North Carolina. Further, our goal is to generate preliminary evidence from Phase I as a grant application to NIMH or NIMHD. In addition to the budget below, we are requesting 0.5 months for Dr. Burford and Dr. Watkins.

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Budget (\$4,500)

- Participant Payments: 200 African American adult participants will be compensated \$10 during initial data collection, and \$20 during the 3-month follow up for their involvement in the study. (Total: \$2,000 and \$2,000 = \$4,000) – *NCCU Internal funding*
- Recruitment supplies and printing: \$500
- Research Assistant: \$ 2500

PIs effort

(0.5 month summer salary)

Tanisha Burford, Ph.D.:	\$4032
Charity S. Watkins, Ph.D.	\$3590

TOTAL request from CARES: \$10,622

Thanks for your consideration of this proposal, please let me know if there is anything I can provide to help in the review process.

Sincerely,

Tanisha I. Burford, Ph. D.
Charity Watkins, Ph.D.