

The Changing Role of Occupational Characteristics in Socioeconomic Health Disparities

Amy E. Hudson^{1,*} and Thomas Fuller-Rowell, Ph.D.²

¹ Undergraduate Student, College of Sciences and Mathematics, Auburn University

² Professor, Human Development and Family Sciences, Auburn University

The relationship between socioeconomic status (SES) and health has long been established. Various factors play a mediating role in the relationship between SES and health, such as neighborhood disadvantage or housing quality. One important factor in the relationship between SES and health is occupation and the characteristics associated with specific jobs. Certain occupational characteristics are associated with better or worse health. Due to the rise in technology and increase in positions requiring higher education, the labor market has shifted dramatically over the past several decades.

The study setting drew from the years 2004 and 2016 of the National Health and Retirement Study (HRS) and the US Occupation Information Network (O*NET) database. Analyses were drawn from HRS participants younger than 63 years of age and their self-reported occupations to ensure discrete cohorts at each timepoint.

Health outcomes included self-rated health (SRH), body mass index (BMI), Katz's Basic Functional Limitations (ADL), and Lawton's Instrumental Functional Limitations (IADL). These measures were derived from HRS questionnaire items.

Work characteristics considered include substantive complexity, hazardous conditions, and physical demands. Sum scores of O*NET items were used to create each measure, which were derived from existing literature.

Measures of socioeconomic status include education (a dichotomous assessment of college degree attainment) and income (natural logarithm of lifetime earnings).

Changes in the magnitude of associations between SES

and occupation characteristics, and between occupation characteristics and health, across the two time points were examined using established methods. Results were stratified by race (Hispanic, Black, White) and gender, and adjusted for age and cohabitation status.

The association between substantive complexity and self-rated health (SRH) strengthened for White women ($\Delta B = 0.029$, $p = 0.0063$), Black men ($\Delta B = 0.052$, $p = 0.046$), and Black women ($\Delta B = 0.051$, $p = 0.0075$).

The average substantive complexity increased significantly for Black women ($p < 0.0001$), Black men ($p < 0.0001$), and white women ($p < 0.0001$), despite the fact that only white women experienced a significant increase in college attainment between 2004 and 2016 ($p < 0.0001$). From this data, we can conclude that more jobs require a higher level of substantive complexity in 2016 than in 2004, regardless of educational attainment. Additionally, substantive complexity matters more in determining individual health for Black women, Black men, and White women in 2016 than it did in 2004.

For White men, the relationship between income and substantive complexity ($\Delta B = 1.122$, $p = 0.0001$), hazardous conditions ($\Delta B = 0.523$, $p = 0.0488$), and physical demands ($\Delta B = 0.847$, $p = 0.0071$) weakened between 2004 and 2016. The effect of hazardous conditions on BMI ($\Delta B = -0.124$, $p = 0.0366$) and IADL ($\Delta B = -0.008$, $p = 0.0264$) decreased. Physical demands also became less of a determinant of BMI ($\Delta B = -0.141$, $p = 0.0069$) and IADL ($\Delta B = -0.008$, $p = 0.0264$). These findings reflect an overall weakening in the relationship between socioeconomic status and health for white men.

Traditionally, physical demands and hazardous conditions have been characteristic of lower SES occupations

* Corresponding author: aeh0145@auburn.edu

for white men. However, these associations between SES and occupation characteristics among White men appear to be weakening. Furthermore, the average physical demands ($p < 0.0002$) and hazardous conditions ($p < 0.0001$) have increased between 2004 and 2016. So, despite increases in physical difficulty and occupational hazards for white men, these factors had less influence on health in 2016 than they did in 2004.

Statement of Research Advisor

Amy Beth has conducted detailed analyses to illuminate the changing role of occupation characteristics and work environments in shaping health outcomes across the socioeconomic hierarchy. She has developed a sophisticated skillset to bring complex nationally representative data sources together and address novel research questions with high relevance to society.

- *Thomas E. Fuller-Rowell, Human Development and Family Sciences, College of Human Sciences*

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Authors Biography



Amy Hudson is a sophomore-year student pursuing a B.S. in Biomedical Sciences. She has contributed to research on the role of macro-economic context on childhood socio-economic status gradients in functional limitations by gathering and analyzing statistical data.



Thomas E. Fuller-Rowell is a professor in the Department of Human Development and Family Science at Auburn University and is director of the Health Equity Science Certificate Program. His research examines social determinants of health disparities and how they are evolving in contemporary societies around the world.