The Effects of Socioeconomic Status and Race on Functional Limitations and Self-Reported Health in Old Age

Mary Elizabeth Bowen

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
in
Sociology

Toni Calasanti, Chair
Rosemary Blieszner
Theodore D. Fuller
K. Jill Kiecolt
Karen A. Roberto
Andrea Willson

June 12, 2006
Blacksburg, VA

Keywords: race, SES, gender, functional limitations, self-reported health, cumulative advantage

Copyright 2006, Mary Elizabeth Bowen
All Rights Reserved
The Effects of Socioeconomic Status and Race on Functional Limitations and Self-Reported Health in Old Age

Mary Elizabeth Bowen

ABSTRACT

Elderly Black and Hispanic adults have poorer overall health, higher disability rates, and lower life expectancies than elderly Whites and other racial and ethnic minority group members. There are also sex differences in health, with women more likely to suffer from non-life threatening chronic conditions and men more likely to suffer from acute conditions. Health pathways, or the processes to good or poor health, are shaped by race, SES, and sex. This study focuses on the race and SES literature, framing race and SES inequalities within a cumulative advantage lens. Using Hierarchical Linear Modeling techniques to examine data from the Health and Retirement Survey, this study finds that there are racial differences in health through health problems, health insurance, and health care treatment, and that Black, Hispanic, and other racial and ethnic minority group members have worse self-reported health than Whites in old age. This study also finds evidence of cumulative advantage through friends in the neighborhood, and finds evidence of cumulative disadvantage through health problems and hospital and nursing home treatment. There are also cumulative disadvantages for women, who have more functional limitations in old age than their male counterparts, and these disadvantages grow over time. This study adds support to the race literature, by furthering understandings of race and SES as interconnected but not interchangeable systems of inequality. In lieu of the findings, this study provides implications for future research and ways to reduce racial health disparities in old age.
Acknowledgements

Thank you to my advisor, Dr. Toni Calasanti, for her guidance throughout. Thank you to all of my other committee members, Dr. Rosemary Blieszner, Dr. Theodore D. Fuller, Dr. Jill Kiecolt, Dr. Karen A. Roberto, and Dr. Andrea Willson, whose remarks have been very helpful to this work. To my parents, Maxwell and Betty Bowen, who have been instrumental in my success; thank you for your love and thoughtfulness. Thank you also to my grandmother, Mary Alford Bowen, who showed me who I was and who I could become. Thank you to Chadwick A. Wingrave, my life partner. Chad is my biggest supporter.
# Table of Contents

Abstract.................................................................................................................................ii
Acknowledgements................................................................................................................iii
Table of Contents....................................................................................................................iv
Figures and Tables..................................................................................................................v

Chapter 1  Introduction...........................................................................................................1
  Literature and Framework.................................................................................................2
  Overarching Research Questions...................................................................................4
  Modeling Health Disparities............................................................................................4

Chapter 2  Literature Review...............................................................................................7
  Social Class and Socioeconomic Status: A Conceptual Framework............................9
      Socioeconomic Status and Implications for Health .............................................11
      Gaps in the SES and Health Literature.................................................................15
  Race and Ethnicity: A Conceptual Framework.............................................................17
  Race, Ethnicity, and SES as Intersecting Health Determinants.....................................19
  Differential Treatment in Health Care.........................................................................22
  Social Integration and the Role of Culture.....................................................................24
  Sex and Health ...............................................................................................................27
  The Role of Race, SES, and Sex in this Study...............................................................29
  Cumulative Advantage and Disadvantage....................................................................31
      Background................................................................................................................32
      Cumulative Advantage and Disadvantage and Health...........................................33
      Evidence for Accumulating and Widening Health Disparities with Age...............33
  Race, SES, Sex, and Accumulating and Widening Health Disparities in this Study........36
  Research Questions and Hypotheses..........................................................................37
      Hypotheses................................................................................................................37

Chapter 3  Methodology.......................................................................................................40
  The Health and Retirement Study..................................................................................40
  Measures.........................................................................................................................41
      Dependent Variables: Descriptive Statistics..........................................................42
      Level-1 Independent Variables: Descriptive Statistics.........................................43
      Level-2 Independent Variables: Descriptive Statistics.........................................52
  Hierarchical Linear Modeling.......................................................................................55
      Functional Limitation Equations and Hypotheses ..............................................59
  Ordinal-Level Dependent Variables in HLM...............................................................62
      Self-Reported Health Equations and Hypotheses...............................................63
  Examining Accumulating and Widening Health Disparities........................................66

Chapter 4  Results................................................................................................................69
  Independent Variables: Level-1.....................................................................................72
  Independent Variables: Level-2.....................................................................................81
  Multivariate Analysis......................................................................................................82
Model 1: Age-Related Growth and Acceleration in Functional Limitations........................................83
Model 2: Time-Varying Covariates Added to Level-1........91
Model 3: Age-Interactions Added to Level-1.........................93
Model 4: Level-2 Main Effects Added ..............................98
Models 5-7: Level-1 and Level-2 Interactions...............100
Model 1: Age-Related Growth and Acceleration in Self-Reported Health........................................107
Model 2: Time-Varying Covariates Added to Level-1.........111
Model 3: Age-Interactions Added to Level-1......................113
Model 4: Level-2 Main Effects Added..............................114
Models 5-6: Level-1 and Level-2 Interactions............115

Chapter 5 Discussion and Conclusions.............................118
Socioeconomic Status ................................................118
Race and Socioeconomic Status.................................120
Race.................................................................123
Sex.................................................................125
Cumulative Advantage and Disadvantage.......................127
Health Pathways and Race, SES, and Sex: Conclusions.....129
Socioeconomic Status..............................................130
Race and Socioeconomic Status.................................135
Race.................................................................136
Sex.................................................................137
Limitations........................................................138
Future Research....................................................139

References........................................................................141

Figures and Tables

Figure 1: Conceptual Functional Limitations Model.........................5
Figure 2: Conceptual Self-Reported Health Model...............................6
Figure 3: Curvilinear Growth Relationship between Age and Functional Limitations 1992-2002.................................85
Figure 4: The Relationship between Friends in the Neighborhood and Functional Limitations over Time.................................96
Figure 5: The Relationship between Doctor Visits and Functional Limitations by Race..................................................101
Figure 6: The Relationship between Hospital and Nursing Home Stays and Functional Limitations by Race.................................103
Figure 7: The Relationship between Functional Limitations and Employer-Provided Insurance by Race.................................104
Table 1: Functional Limitations by Year: Descriptive Statistics........................................42
Table 2: Self-Reported Health by Year: Descriptive Statistics........................................43
Table 3: Wealth by Year: Descriptive Statistics .................................................................44
Table 4: Income by Year; Descriptive Statistics .................................................................44
Table 5: Hospital and Nursing Home Stays and Doctor Visits by Year: Descriptive
Statistics.........................................................................................................................46
Table 6: Health Insurance Coverage Per Year: Descriptive Statistics............................47
Table 7: Friends and Relatives in the Neighborhood by Year: Descriptive
Statistics.........................................................................................................................49
Table 8: Doctor-Diagnosed Health Problems by Year: Descriptive Statistics ............50
Table 9: Disability by Year: Descriptive Statistics..............................................................51
Table 10: Marital Status by Year: Descriptive Statistics......................................................51
Table 11: Respondent Race and Sex: Descriptive Statistics................................................52
Table 12: Years of Education: Frequencies and Percents of Sample...............................54
Table 13: Functional Limitations and Self-Reported Health by Sex and Year: Descriptive
Statistics.........................................................................................................................70
Table 14: Functional Limitations and Self-Reported Health by Race, Ethnicity, and
Year: Descriptive Statistics...........................................................................................71
Table 15: Mean Total Wealth and Income by Sex and Year..............................................73
Table 16: Mean Total Wealth and Income by Race, Ethnicity, and Year .........................74
Table 17: Type of Health Insurance by Race, Ethnicity, and Year: Descriptive
Statistics...........................................................................................................................76
Table 18: Doctor Visits and Hospital and Nursing Home Treatments by Race, Ethnicity,
and Year: Descriptive Statistics....................................................................................78
Table 19: Presence of Friends and Relatives in Respondent's Neighborhood by Race,
Ethnicity, and Year: Descriptive Statistics.....................................................................80
Table 20: Mean Childhood SES and Childhood Health by Sex, Race, and
Ethnicity...........................................................................................................................82
Table 21: Functional Limitations Curvilinear Growth Models 1-7; Unstandardized
Table 22: Self-Reported Health Curvilinear Growth Models 1-6; Unstandardized