HHS Public Access

Author manuscript

Ann Am Acad Pol Soc Sci. Author manuscript; available in PMC 2021 April 06.

Published in final edited form as:

Ann Am Acad Pol Soc Sci. 2016 January 1; 663(1): 292–330. doi:10.1177/0002716215596981.

Does Growing Childhood Socioeconomic Inequality Mean Future Inequality in Adult Health?

JOHN ROBERT WARREN

John Robert Warren is a professor of sociology at the University of Minnesota and training director of the Minnesota Population Center. He studies social inequalities in education and health. He has been involved with the Wisconsin Longitudinal Study since 1994; is coleading an effort to reinterview the 1980 High School & Beyond cohorts; and is co–principal investigator of a project to harmonize, fully link, document, and disseminate data and metadata from the Current Population Surveys. He is editor of Sociology of Education through 2016. From 1991 forward, Robert and Taissa Hauser showed more faith in him than he deserved and modeled for him how to be a professional social scientist and a good person at the same time.

Abstract

Over the past half century, American children have experienced increasingly unequal childhoods. The goal of this article is to begin to understand the implications of recent trends in social and economic inequalities among children for the future of inequalities in health among adults. The relative importance of many of the causal pathways linking childhood social and economic circumstances to adult health remains underexplored, and we know even less about how these causal pathways have changed over time. I combine a series of original analyses with reviews of relevant literature in a number of fields to inform a discussion of what growing childhood inequalities might mean for future inequalities in adult health. In the end, I argue that there is good reason to suppose that growing inequalities in children's social and economic circumstances will lead to greater heterogeneity in adults' morbidity and mortality.

Keywords

socioeconomic inequality; health disparities; life course

Over the past half century, American children have experienced increasingly unequal childhoods. As shown in Figure 1—and as documented and analyzed elsewhere (e.g., Western, Bloome, and Percheski 2008; McCall and Percheski 2010)—income inequality among families with children has grown substantially since at least the mid-1960s. For example, while the family incomes of children in the top quartile increased by more than a third between 1964 and 2010 (in constant 2010 dollars), the family incomes of children in the bottom quartile declined modestly. This rise in inequality among families with children has gone hand in hand with a trend toward fewer children living with both biological parents (e.g., Cherlin 2010; McLanahan and Percheski 2008). Because of these two broad and related patterns, the share of children living below the poverty line has fluctuated between

Correspondence: warre046@umn.edu.

about 15 and 20 percent since the 1960s, while the share whose family income exceeded four times the poverty threshold has steadily increased (Figure 2; also see AECF 2011). In short, inequalities in childhood socioeconomic resources have grown markedly in the United States in recent decades.

At the same time, there is compelling evidence that childhood socioeconomic circumstances are closely related to mortality and morbidity in later life (e.g., Galobardes, Lynch, and Smith 2004; Hayward and Gorman 2004; O'Rand and Hamil-Luker 2005; Haas 2007; Elo 2009; Emerson 2009; Montez and Hayward 2014). Although there is considerable debate about the processes and mechanisms that give rise to this pattern, the evidence is clear: socioeconomically disadvantaged children tend to experience less favorable health outcomes as adults. What does the escalation in socioeconomic inequalities among American children mean for future inequalities in adult health outcomes? Do patterns like those observed in Figures 1 and 2 suggest that we can expect corresponding growth in variation in health outcomes among adults? Or is it possible that countervailing patterns—changes over time in the processes linking childhood socioeconomic resources to adult health outcomes—are such that inequalities in adult health will remain constant or even decline in the face of rising social and economic inequalities among American children? The goal of this article is to begin to understand the implications of recent trends in social and economic inequalities among children for the future of inequalities in health among adults.

In this article, I organize my discussion and arguments around a heuristic model—depicted in Figure 3—of the documented and hypothesized pathways through which childhood socioeconomic inequalities may be translated into disparate adult health outcomes. As I describe, the relative importance of many of the causal pathways in Figure 3 remains underexplored. However, we know even less above how the magnitudes of some of these causal pathways have changed over time. As such, it is difficult to hypothesize a priori about the eventual impact of rising childhood economic inequality for future adult health disparities. For this reason, my conclusions may be little more than informed speculation. To bolster my speculative conclusions, I present two main sets of empirical analyses. First, I utilize rich data from a single cohort of Americans that provides detailed information about the pathways through which childhood advantages and disadvantages are translated into health outcomes later in life. Second, I use information collected across more than three decades from repeated cross-sections of Americans that provides provisional evidence about trends over time in relationships between childhood socioeconomic circumstances, adult health, and intervening factors. Along the way, I describe evidence from a number of disciplines about the magnitudes of the pathways depicted in Figure 3, and I describe what those literatures say about how those pathways may be changing over time. In the end, I argue that there is good reason to suppose that growing inequalities in children's social and economic circumstances will lead to greater heterogeneity in adults' health outcomes. Put another way, there is little reason to be optimistic that such increased heterogeneity in adults' health can be easily avoided (at least for most health outcomes).

How Do Childhood Economic Circumstances Affect Adult Health?

Sociologists and epidemiologists have carefully documented associations between children's socioeconomic position and their subsequent health as adults (e.g., Case, Fertig, and Paxson 2005; Elo 2009; Emerson 2009; Bowen and Gonzalez 2010). For example, researchers using data from the Whitehall II study of British Civil Servants have demonstrated powerful relationships between childhood socioeconomic conditions and subsequent risk of cardiovascular disease, bronchitis, and depression (Brunner et al. 1999; Marmot et al. 2001). This work has frequently been inspired by life course conceptions of the ways in which later-life health problems are the cumulative result of exposures to adverse conditions and circumstances as experienced throughout life (e.g., Ben-Schlomo and Kuh 2002; J. Lynch and Smith 2005; Bowen and Gonzalez 2010).

How—that is, through what causal pathways—does childhood socioeconomic disadvantage lead to health problems in adulthood? In Figure 3, I present a schematic model of this process. Generalizing across a number of disciplines and research domains, the model hypothesizes that childhood social and economic resources affect adult health via their impact on early life well-being (including childhood health and cognitive and noncognitive educational outcomes) and later life well-being (including adult socioeconomic circumstances, working conditions, health behaviors, and personality characteristics). The model in Figure 3 implies that childhood socioeconomic resources also affect adult health directly or—more likely—via mechanisms and processes not captured in Figure 3. For example, the growing volume of research on the neurological and physiological impacts of economic disadvantage during fetal and adolescent development is relevant in this regard (e.g., Evans and Schamberg 2009; Shonkoff, Boyce, and McEwen 2009; Ziol-Guest, Duncan, and Kalil 2009; Slopen et al. 2013; Friedman et al. 2015).

Beginning with the left-hand side of the model in Figure 3, there is considerable evidence that children's social and economic conditions have important implications for early life health outcomes (e.g., Spencer 2003; Haas 2006; Nikiéma, Spencer, and Spencer 2010; Strully, Rehkopf, and Xuan 2010; Béatrice et al. 2012). These effects are well documented in both developed and developing countries. They operate through a variety of biological mediators (e.g., gestational development, birth weight, nutritional adequacy) and social processes (e.g., access health care, neighborhood environmental exposures). At the same time, there is substantial evidence that childhood health has long-term consequences for adult health, both directly and via its impact on education and adult socioeconomic circumstances (e.g., Case, Fertig, and Paxson 2005; Palloni 2006; Haas 2007; Palloni et al. 2009; Currie 2009; Jackson 2010; Haas, Glymour, and Berkman 2011; Haas, Krueger, and Rohlfsen 2012). For example, after noting that "disadvantaged social background is associated with poor childhood health" in the Panel Study of Income Dynamics, Haas (2006, 339) concluded that "poor health in childhood has significant, direct, and large adverse effects" on educational attainment, occupational standing, earnings, wealth accumulation, and subsequently adult health.

Sociologists and economists have long documented the impact of childhood socioeconomic resources on educational outcomes (e.g., Blau and Duncan 1967; Featherman and Hauser

1978; Shavit and Blossfeld 1993; Lareau 2003). Children from disadvantaged social and economic backgrounds have fewer academic and cognitive skills as measured on achievement and IQ tests (e.g., Heckman 2006; Condron 2009; Sastry and Pebley 2010; Potter and Roksa 2013; Roos et al. 2013; Anderson, Leventhal, and Dupéré 2014), have fewer noncognitive skills (e.g., Heckman 2010; Sastry and Pebley 2010; Anger 2010; Anger and Schnitzlein 2013), and acquire less human capital as measured by degree attainment and years of completed schooling (e.g., Buchmann, Condron, and Roscigno 2010). In turn, there are sizable literatures on the consequences for adult health of cognitive skills (e.g., Hatch et al. 2007; Reynolds et al. 2007; Hauser and Palloni 2010), noncognitive skills (e.g., Kaestner 2009; Herd 2010), and human capital accumulation (e.g., Elo 2009; Conti, Heckman, and Urzua 2010; Kawachi, Adler, and Dow 2010).

Finally, turning to the right-hand side of the model in Figure 3, there are a number of hypotheses across diverse literatures about the causal pathways through which education and cognitive and noncognitive skills affect adult health. As specified in Figure 3, these might be summarized as having to do with economic resources, working conditions, health risk behaviors, and personality traits. Education and cognitive skills certainly have important effects on adult socioeconomic standing, as measured by such things as income, occupation, and wealth. These, in turn, affect adult health outcomes through a number of subsequent causal processes (e.g., Kawachi, Adler, and Dow 2010; Warren and Kuo 2003; Emerson 2009; Zajacova, Hummer, and Rogers 2012). Likewise, the physical and psychosocial characteristics of people's paid jobs are stratified by education and cognitive and noncognitive skills and have important effects on a variety of health outcomes (e.g., Landsbergis 2010; Vanroelen et al. 2010). Education and skills affect a number of health risk behaviors, including smoking, alcohol consumption, frequency of physical exercise, and others (e.g., Cutler and Lleras-Muney 2008, 2010; Brunello, Schneeweis, and Winter-Ebmer, forthcoming). Finally, Mirowsky and Ross (2003b) and others have argued that education affects personality characteristics like sense of personal control, self-efficacy, and the ability to deal effectively with health information and health care institutions.

In practice, it is challenging to test the entirety of a model such as the one depicted in Figure 3 because of data limitations. To do a thorough job of considering this model, one would need detailed information about all of the elements of the model for a large, representative sample of individuals. Because the left-hand-side variables (childhood social and economic conditions, childhood health, etc.) occur many years prior to the right-hand-side variables (adult social and economic outcomes, adult health, etc.), it would be necessary to either follow a cohort of people for several decades or else to obtain extraordinarily rich cross-sectional data with carefully validated retrospective measures of early life conditions. Because of these severe data requirements, few researchers consider the entire model in one analysis (but see Case, Fertig, and Paxson [2005] and Palloni et al. [2009] for commendable exceptions).

In the section that follows, I present analyses of data from the Wisconsin Longitudinal Study (WLS), a long-term prospective study of a large sample of men and women that includes most—but by no means all—of the information required to fully consider the processes through which childhood social and economic conditions affect adult health outcomes. No

existing nationally representative data resource includes all of these measures. The purpose of my analyses of WLS data is to understand better, broadly speaking, the ways in which social and economic standing influences adult health using a conceptual model like the one in Figure 3. This work builds on the research described in the paragraphs above, but extends it by considering the full life course. In subsequent sections of this article, I speculate and provide evidence on the ways in which the magnitudes of the causal pathways depicted in Figure 3 may be changing over time. Informed by analyses of WLS data (for one cohort) and by evidence about trends over time (and thus across cohorts), I then make inferences about how rising childhood socioeconomic inequalities may affect future inequalities in adult health outcomes.

Childhood Socioeconomic Conditions and Adult Health: Evidence from a Single Cohort

The WLS is a long-term study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957. WLS "graduates" were interviewed in 1957, 1975, 1993, 2004, and 2011; their parents were interviewed in 1964; and a randomly selected sibling was interviewed in 1977, 1994, 2005, and 2011. The WLS graduate sample is broadly representative of white, non-Hispanic Americans who have completed at least a high school education—a group that includes about two-thirds of all Americans of this generation. Response rates to WLS telephone and mail surveys have been consistently high; see Hauser (2005) for details.

The combined 1957 through 2004 WLS surveys provide information to test most elements of the model presented in Figure 3. The 1957 and 1964 WLS surveys—supplemented with tax records, school district files, and state testing service data—provide rich information about graduates' early life social and economic circumstances, educational outcomes, and cognitive and noncognitive skills. The 1964 through 2004 surveys collected extensive information about graduates' work and family lives, social and economic circumstances and working conditions at multiple ages, and psychological and personality attributes in adulthood. The 1993 and 2004 surveys obtained measures of a variety of physical and mental health outcomes. Childhood health was measured retrospectively in 2004. WLS records have been linked to the National Death Index, providing information about timing and causes of death.

All of the analyses described below are restricted to the 2,510 male and 3,018 female graduates who responded to the 1993 telephone and mail surveys and who either (1) responded to the 2004 telephone and mail surveys or (2) died after their 1993 survey and before they could be interviewed in 2004. I also exclude the very small number of individuals who were not born between 1937 and 1940. Throughout, I replace item-level missing data using the ICE routine for multiple imputation in Stata (Royston 2004, 2009). Multivariate results are based on estimates combined from five multiply imputed data sets using the MICOMBINE commands. My final analytic sample of 2,510 + 3,018 = 5,528 individuals includes more than 60 percent of the graduates who survived to 2004, nearly a half century after they were first interviewed. Table 1 provides descriptive statistics for

measures used in my analyses of (1) mortality and (2) psychological distress in 2004, when most surviving respondents were age 65. The appendix includes a description of how key WLS variables were constructed.

In Table 2, I present a nested set of logistic regression models of mortality (that is, whether graduates died after the 1993 survey but prior to the 2004 survey), separately for men and women in the WLS; in this analysis, I do not have access to measures of childhood health (because they were not collected until 2004). Men whose parents were in the bottom quintile of the income distribution in 1957 were more likely to die between 1993 and 2004 (model 1). Women whose mothers went to college were about half as likely as other women to die (model 2). As shown in model 3, graduates who lived with both parents while growing up were half as likely to die between 1993 and 2004. In general, I find evidence of strong associations between graduates' childhood social and economic circumstances and odds of dying during these years. Through what mechanisms do these effects operate?

In model 4, I include measures of education, cognitive ability, and noncognitive skills. High school class rank—a measure that generally reflects graduates' abilities to do what it took to earn good grades and please teachers in high school—is significantly associated with mortality net of family socioeconomic background. However, none of these education or skill measures account for the association between childhood social and economic circumstances—and particularly living in a two-parent family—and mortality. Finally, in model 5, I include measures of adult socioeconomic circumstances, working conditions, health risk behaviors, and psychological well-being. Several of these are significantly related to mortality, and they partially mediate the relationships between education and skills and mortality. However, all else constant, graduates who lived with both parents while growing up were still about half as likely to die between 1993 and 2004. The effects of childhood family socioeconomic circumstances on mortality do seem to operate partly through the mediating effects of education, skills, adult socioeconomic circumstances, adult health risk factors, and psychological well-being, but they also appear to operate directly (or via mechanisms not well represented in the model).

In Table 3, I present a series of parallel models of surviving graduates' Center for Epidemiologic Studies Depression Scale (CES-D) psychological distress scores; note that all of these models include an Inverse Mills Ratio computed from a probit model of mortality in an effort to correct for selective mortality and, thus, selection attrition from the sample of surviving graduates. I might just as well have picked other physical or mental health outcomes besides CES-D scores; the results are conceptually similar.

Models 1 and 2 include measures of graduates' childhood social and economic circumstances. Female graduates whose parents were in the bottom quartile of the income distribution had significantly higher CES-D scores half a century later. Likewise, male graduates whose mothers graduated from high school had lower psychological distress scores later on. In model 3, I introduce measures of graduates' childhood health (as reported retrospectively in 2004). As shown in Table 3, there are strong and significant relationships between childhood health and adult psychological distress; healthier children had lower CES-D scores as adults. These relationships are partially mediated by education and

cognitive and noncognitive skills among women (model 4), but not among men (for whom education and skills are unrelated to CES-D scores). Among men, the associations between mother's education and CES-D and between childhood health and CES-D persist even after controlling for education, skills, adult socioeconomic standing, adult health risk factors, and psychological well-being (model 5). Among women, we observe no significant association between childhood socioeconomic circumstances and this health outcome net of these intervening factors; however, childhood health is significantly related to CES-D scores net of adult socioeconomic, health risk behavior, and psychological measures. In general, childhood socioeconomic and health conditions are significantly related to psychological distress 50 years later; these associations are only partially mediated by the sorts of intervening mechanisms depicted in Figure 3. Again, although I do not present the results here, the same basic story holds for other health outcomes (e.g., self-assessed overall health, cardiovascular outcomes).

In the WLS, childhood socioeconomic circumstances and childhood health are significantly related to adult health and well-being. The results in Tables 2 and 3 are generally supportive of the sort of model depicted in Figure 3: The effects of childhood conditions are partially direct and are partially mediated by things like education, cognitive and noncognitive skills, adult socioeconomic standing, and so forth. These findings are broadly consistent with those from analyses of data from the National Child Development Study, a prospective longitudinal study of nearly all children born in the first week of March of 1958 in England, Scotland, and Wales (Case, Fertig, and Paxson 2005; Palloni et al. 2009).

Having established the general plausibility of the model depicted in Figure 3, I now turn to the central focus of the article: the ways in which the causal pathways linking childhood socioeconomic circumstances to adult health may have changed over time.

Is the Past Prologue? Changes over Time in the Relationships between Children's Socioeconomic Standing, Adult Health, and Intervening Processes

What does the web of causal pathways depicted in Figure 3 imply about the possible impact of growing childhood socioeconomic inequalities on the future of inequalities in adult health outcomes? In the absence of changes over time in the magnitude of these causal pathways, we would generally expect growing childhood socioeconomic inequalities to lead directly to growing heterogeneity in many health outcomes among adults. That is, if the effects of childhood socioeconomic background on the intervening variables depicted in Figure 3 remain constant over time, and if the effects of those intervening variables on adult health remain constant over time, then we should expect growing inequalities in the economic well-being of children to lead to increasing disparities in many health outcomes among adults. On the other hand, if the effects of childhood socioeconomic background on the intervening variables depicted in Figure 3 have declined, and/or if those variables have mattered less over time for adult health, then the patterns noted in Figures 1 and 2 may not translate into greater heterogeneity in adults' health outcomes. What do we know about changes over time in the causal pathways depicted in Figure 3? Below, I consider each pathway in turn.

Childhood socioeconomic status and adult health

There has been very little research on trends over time in the empirical relationship between children's social and economic circumstances and their health as adults. One exception is work by Warren and Hernandez (2007), who noted that "despite dramatic declines in morbidity and mortality rates in the United States across the twentieth century … socioeconomic-status gradients in morbidity and mortality declined only modestly (if at all) during that period" (p. 335). In Tables 4 through 7, I extend their analyses as they pertain to the relationship between childhood socioeconomic standing and adult health. For this purpose, I use data from the 1972 through 2010 General Social Survey (GSS), which is a biannual in-person survey of a representative sample of Americans. The GSS has usually included a subjective measure of respondents' relative childhood family income—that is, a measure of whether respondents viewed their childhood family incomes as below average, average, or above average. The GSS has also typically included measures of father's occupation, respondent's education, and respondent's self-assessed overall health in adulthood. Descriptive statistics for these measures are provided in Table 4; here, the sample is restricted to people between ages 18 and 89 in 1972 through 2010.

In Table 5, I report results from a descriptive analysis first reported by Warren and Hernandez (2007) and updated here through 2010. For each of eleven birth cohorts and seven age groups, the table reports the percentage of respondents who viewed their current health as "excellent" or "good" (as opposed to worse than "good"), separately for people who said their childhood family income was below average and for those who said their childhood family income was average or above. This table shows, as expected, that self-assessed overall health in adulthood tends to decline with age and to improve across birth cohorts. However, there does not seem to be any narrowing or widening over time—that is, across birth cohorts—in the association between childhood family income and adult health.

Still following Warren and Hernandez (2007), Table 6 formalizes this comparison and extends it to another measure of childhood socioeconomic standing: father's occupation. The models described in this table are logistic regressions in which the dependent variable indicates whether respondents' self-assessed overall health in adulthood was "excellent" or "good" versus other (worse) options. In model 1, the independent variables include the focal childhood socioeconomic standing measure and indicators of respondents' ages and years of birth. Model 2—which fits better than model 1 in both cases—allows for an interaction between age and year of birth. That is, they allow the effects of age to vary across cohorts (which in practice means that the negative effects of age are not as pronounced for recent cohorts). Model 3 allows for an interaction between age and childhood socioeconomic circumstances; the fact that this specification is not an improvement over model 2 suggests that the association between childhood socioeconomic conditions and self-assessed overall health in adulthood remains constant across the life course. More importantly for present purposes, however, models 4 and 5 allow for interactions between childhood socioeconomic origins and year of birth. The fact that these terms do not improve the fit of the model suggests that the association between childhood socioeconomic conditions and self-assessed overall health in adulthood has not changed over time. Table 7 provides coefficient estimates for the best-fitting specification of the models.

Like Warren and Hernandez (2007), I find no evidence for changes over time in the association between children's social and economic circumstances and their health as adults. However, this evidence is limited in important ways (not the least of which is the relative crudeness of the key measures). As shown in Figure 1, inequalities in children's family income grew most dramatically beginning in the 1980s. As shown in Table 5, however, my analyses of GSS data include very few individuals who were children in the 1980s or later. The association between childhood socioeconomic conditions and adult health may not have changed over time among people currently old enough to participate in the GSS, but we will have to wait for several more years before people whose childhoods were characterized by the inequalities depicted in Figure 1 are observed as adults in the GSS. Consequently, my conclusions about the implications of rising social and economic inequalities among children for subsequent adult health disparities will necessarily be based largely on what we know from the research literature about trends in the magnitude of the causal pathways in the model depicted in Figure 3.

Childhood socioeconomic status and children's health

There is little published research on trends in the relationship between childhood socioeconomic advantage/disadvantage and children's health. One important exception is Singh and Kogan's (2007) evidence that socioeconomic gradients in child mortality increased substantially between 1969 and 2000. To fill this gap, Figure 4 depicts my estimates of trends between 1982 and 2009 in the association between American children's poverty status and their self-assessed overall health. The estimates are produced using data from the National Health Interview Surveys and as harmonized over time in the Integrated Health Interview Series (IHIS); here, the IHIS samples are restricted to people below the age of 18. Figure 4 suggests that the association between children's poverty status and their self-assessed overall health has *declined modestly* over time. Although there is room for considerably more research in this regard, and Singh and Kogan's (2007) results notwithstanding, it appears as though socioeconomic disparities in American children's health have either remained constant or declined modestly in recent decades.

Childhood socioeconomic status and education

The United States has seen a gradual decline in the association between family socioeconomic circumstances and children's overall educational attainments. Although there are a variety of theoretical perspectives on the nature of this decline (e.g., Hout, Raftery, and Bell 1993; Lucas 2001), the consensus is that inequalities in educational attainment in the United States have declined over time only as a result of educational expansion. That is, inequalities in attaining lower levels of schooling (i.e., secondary school) declined once nearly everyone was able to complete that level of schooling. However, the expansion of educational opportunities in the U.S. has been accompanied by persistent inequalities in levels of schooling that are not universally attained (i.e., postsecondary schooling). Whereas inequalities across childhood socioeconomic groups in total years of schooling completed or in rates of high school completion may have declined over time, inequalities in access to higher education have generally persisted (e.g., Haveman and Smeeding 2006; Grodsky and Jackson 2009). For example, Figure 5 is based on my own analysis of data from the 1972 through 2010 GSS; for this purpose, I have restricted the GSS samples to people age 25 or

above. Figure 5 depicts the percentage of high school graduates who have completed a four-year college degree separately for people defined by their relative childhood family income and by their mother's education. Despite marked growth in rates of postsecondary educational opportunities, the gap between these groups has persisted.

Childhood socioeconomic status and cognitive and noncognitive skills

There is strikingly little sound information regarding trends over time in social disparities in IQ, although there is some evidence that black-white IQ differences in the United States have narrowed somewhat (Dickens and Flynn 2006; Hauser 2010). Long-term trend data from the National Assessment of Educational Progress (NAEP) suggest that differences in reading and math achievement test scores across social background groups (as indicated by parental education) were unchanged between 1980 and 2004 (Grodsky, Warren, and Felts 2008; Perie, Moran, and Lutkus 2005). Figure 6, also based on 1972 through 2010 GSS data, depicts trends in mean scores on the 10-item WORDSUM vocabulary test; see Hauser (2010) for a description of the WORDSUM test. As shown in Figure 6, WORDSUM scores are certainly stratified by both relative childhood family income and by mother's education, but the relationship between this verbal ability and either of these indicators of childhood socioeconomic background has remained steady over time. Hauser and Huang (1997) provide a much more rigorous analysis of these same data and conclude that "there is no evidence of a trend toward greater inequality in verbal ability among American adults born between 1910 and 1970" (p. 352). Sound evidence about temporal trends in the relationship between socioeconomic origins and noncognitive skills is even more limited.

Childhood socioeconomic conditions and adult socioeconomic conditions

Sociologists have long studied temporal trends in intergenerational social mobility, usually as indexed by parents' and children's occupations. This literature has generally found either no consistent change over time in rates of social mobility (e.g., Featherman, Jones, and Hauser 1975; Grusky and Hauser 1984; Erikson and Goldthorpe 1992, 2010), or else a very gradual trend over time toward a weaker relationship between childhood socioeconomic origins and adult socioeconomic destinations (e.g., Hout and Lynch 1988; Grusky and DiPrete 1990; Breen and Jonsson 2007). In recent years, economists have begun to more seriously study trends over time in intergenerational earnings elasticities. In general, they have also come to mixed conclusions or found no discernable trend over the second half of the twentieth century (e.g., Aaronson and Mazumder 2008; Lee and Solon 2009; Black and Devereux 2011; Olivetti and Paserman 2013; Chetty et al. 2014). Although there is little other research on the topic, Musick and Mare (2006) found no trends in the intergenerational associations between children's and parents' poverty statuses or family structures. In general, there is little reason to expect that the connection between childhood socioeconomic circumstances and adult socioeconomic circumstances has declined substantially in recent decades.

Children's health, education, adult socioeconomic status, and adult health

As reviewed above, there is considerable evidence that childhood health has long-term consequences for adult health, both directly and via its impact on education and adult socioeconomic circumstances (e.g., Case, Fertig, and Paxson 2005; Palloni 2006; Haas

2007; Palloni et al. 2009; Currie 2009; Jackson 2010; Haas, Glymour, and Berkman 2011). To my knowledge, however, none of this research has considered changes across cohorts or over time in these processes. In general, this is probably because the data demands for analyses of these processes are so high; most analysts have utilized rich data on single cohorts of individuals. It is difficult to imagine life course–long analyses of this sort being conducted any time soon in such a way that would lend itself to long-term inter-cohort comparisons.

Education, skills, and adult socioeconomic status

Economists have documented long-term increases in wage returns to education and human capital, most of which have occurred as demand for high-skilled workers has outpaced their supply in the United States (Goldin and Katz 1999, 2008; Autor, Katz, and Kearney 2008). In contrast, the occupational returns to education—the degree to which education affects occupational attainment—has either increased more modestly (e.g., Grusky and DiPrete 1990) or not at all (e.g., Hauser et al. 2000) in recent decades (with patterns varying considerably by sex and race/ethnicity). These apparently contradictory patterns may make sense in light of growing within-occupation wage inequalities in recent decades (Kim and Sakamoto 2008). Finally, despite claims by Herrnstein and Murray (1994) about rising effects of cognitive ability on occupational attainment and earnings, more careful analyses have indicated no such patterns (Hauser and Huang 2007; Hauser et al. 2000).

Education, skills, and adult health

There is considerable evidence that the association between education and mortality has increased since the early 1980s (e.g., Duleep 1989; Pappas et al. 1993; S. Lynch 2003; Meara, Richards, and Cutiew 2008; Cutler et al. 2010; Lochner 2011; Miech et al. 2011; Hummer and Lariscy 2011); indeed, some observers argue that recent increases in life expectancy in the United States in recent decades have largely been driven by better-educated people’s tendency to live longer (Meara, Richards, and Cutiew 2008). Likewise, associations between education and cardiovascular disease (e.g., Cooper et al. 2000; Kanjilal et al. 2006) and between education and self-assessed overall health (e.g., S. Lynch 2003; Goesling 2007; S. Lynch 2006; Liu and Hummer 2008; but see Warren and Hernandez [2007] for an exception) have also apparently increased across cohorts, perhaps in part because of persistent educational differences in smoking behaviors (e.g., Pampel 2009; Kanjilal et al. 2006). S. Lynch (2006) offers evidence that the direct effect of education on self-assessed health may have actually declined over time, and that the rising total association between education and health can be attributed to the combination of increases in the direct effect of education on income and increases in the direct effect on income on health.

There is considerably less evidence about trends over time in the relationship between cognitive and noncognitive skills and mortality or morbidity. I offer Figure 7—which is based on 1974 through 2010 GSS data and depicts the relationship over time between WORDSUM vocabulary test scores and self-assessed overall health—as preliminary evidence in this regard. The figure suggests that the gap in self-assessed overall health between those who score high (8–10) and low (0–4) on the 10-item WORDSUM test may

have grown somewhat, especially since about 1990. Whether this conclusion would sustain more rigorous analysis (i.e., that separated the effects of education and test scores, that took temporal order more seriously, that looked at age-specific gradients, etc.) remains to be seen.

Adult socioeconomic status and adult health

The association between adult income and mortality has either remained stable (e.g., Duleep 1989; McDonough et al. 1997) or risen modestly in recent decades (e.g., Pappas et al. 1993; Tarkiainen et al. 2012). Likewise, there is sound evidence for increasing associations between income and self-assessed overall health (S. Lynch 2006; Hout and Lynch 2008), risk factors associated with cardiovascular disease (Kanjilal et al. 2006), and old-age disability (Schoeni et al. 2005). Steenland, Hu, and Walker (2004) found evidence for growing occupational disparities in mortality, at least for men. Using GSS data, Warren and Hernandez (2007) found little evidence of long-term changes in the relationship between a subjective measure of adult income and self-assessed overall health; however, their methods were designed to assess trends across the bulk of the twentieth century and may have missed changes that are more recent.

Summary and Conclusions

I began the preceding section by noting that if the effects of childhood socioeconomic background on the intervening variables depicted in Figure 3 remain constant over time, and if the effects of those intervening variables on adult health remain constant over time, then we might reasonably expect growing inequalities in the economic well-being of children to lead to increasing heterogeneity in adults' health outcomes. However, I have spent the last several pages describing changes in many of these causal pathways. Putting these various bits of evidence together and offering the usual caveat that a great deal more research is warranted on any number of the topics reviewed above, what can I infer about the impact of rising childhood socioeconomic inequalities for the future of inequalities in adults' health outcomes?

It seems safe to assume that virtually all of the effects of childhood socioeconomic resources on adult health are indirect, operating through mechanisms like childhood health, education attainment, cognitive and noncognitive abilities, adult socioeconomic standing, adult health behaviors, and so forth. Consequently, the bulk of my discussion will be on trends over time in what probably matters most: the indirect effects of childhood socioeconomic standing on adult morbidity and mortality.

As an organizing framework, it might be useful to think through scenarios in which rising childhood socioeconomic inequalities would not lead to more inequality in adults' health outcomes. My analyses of WLS data suggest (and other evidence described above concurs) that (1) childhood health and (2) education and cognitive and noncognitive skills are two very important sets of mediators of the effects of childhood social and economic conditions on subsequent life outcomes (including, but not limited to, adult health). Consequently, this implies at least two initial scenarios in which rising childhood socioeconomic inequalities would not lead to more inequality in adults' health outcomes.

First, the connection between childhood socioeconomic circumstances and childhood health might become weaker and/or the connection between childhood health and adult health might become weaker. As reviewed above, there is exceptionally little published research on trends over time in the correlates of childhood health. It may be the case, for example, that the long-term consequences of childhood health have declined—or it may not be the case. Figures 4 and 5 provide extremely preliminary evidence from 1982 through 2009 IHIS data that the connections between childhood poverty and children's self-assessed overall health may have declined modestly over time. However, the safest conclusion is that there is considerably more research to be done on this topic.

Second, the connection between childhood socioeconomic circumstances and education and skills might become weaker and/or the connection between education and skills and adult health might become weaker. However, we know with some certainty that the latter has not been the case in recent decades. Indeed, the findings reviewed above suggest that the connections between education and skills and adult health are growing stronger over time. Likewise, the evidence reviewed above gives little reason to think that the connections between childhood socioeconomic conditions and either education or cognitive skills have changed appreciably in recent decades. Unless there is a tremendous reversal in any of these temporal patterns, there is little reason for optimism here. Childhood socioeconomic disadvantages should continue to translate into poorer educational and cognitive outcomes, and those outcomes will continue to translate into poorer health. Via these processes, more inequality in childhood socioeconomic resources would seem to portend more inequality in adults' health.

A third possible optimistic scenario involves the mechanisms linking education and skills to adults' health. Even if the relationships between childhood socioeconomic conditions and education and skills remain stable, perhaps the effects of education and skills on adult health will decline because of weakening links between education and skills and adult socioeconomic status and/or weakening links between adult socioeconomic status and health. Again, considerable evidence reviewed above suggests that this optimistic scenario would represent the reversal of long-standing trends. If anything, education matters more and more for adult health, partly because education increasingly matters for adult income and occupational standing, and partly because income and occupational standing increasingly matter for mortality and morbidity.

Putting these general conclusions aside, there are at least two scenarios under which rising inequality in children's socioeconomic circumstances would not lead to increased disparities in adult health. First, as shown in Figures 1 and 2, rising inequality in children's socioeconomic circumstances may be largely due to growing economic advantages among already advantaged groups. If this is the case, and if children from advantaged origins have already improved their later-life health outcomes to the maximum biological or epidemiological extent possible, then continued growth in advantage among already advantaged groups may have no consequence for adult health disparities—at least for particular health outcomes. Second, if future biomedical advances effectively wipe out particular health conditions, then disparities in those conditions will also be eliminated regardless of what happens with children's socioeconomic inequalities.

Over time, total life expectancy and healthy life expectancy in the United States have gone up (e.g., Crimmins and Saito 2001). Age-adjusted mortality rates for many of the leading causes of death have declined (e.g., Xu et al. 2010). Age-adjusted incidence rates of many health problems have also declined. Despite these improvements in levels of health and well-being in the United States, disparities in these outcomes persist. Indeed, public health efforts to reduce mortality and morbidity sometimes have the perverse side effect of increasing health disparities. In the midst of these dynamics, American children have come to experience increasingly unequal childhood social and economic circumstances. While we may be optimistic that public health knowledge will continue to grow, that life expectancy and healthy life expectancy will continue to rise, and that incidence rates of important diseases and afflictions will continue to fall, there is much less reason to be optimistic about the future of health disparities among American adults. Absent the elimination of some of the key causal pathways linking childhood socioeconomic conditions to adult health, and absent some massive and surprisingly effective policy interventions, the growth of childhood socioeconomic inequalities in recent decades seems likely to lead to continued or growing inequalities in adults' health.

Acknowledgments

NOTE: This article benefited from skilled research assistance by Sarah Garcia. Some of the analyses described in this article are based on data from the Wisconsin Longitudinal Study (WLS) of the University of Wisconsin–Madison. Since 1991, the WLS has been supported principally by the National Institute on Aging (AG-9775 and AG-21079), with additional support from the Vilas Estate Trust, the National Science Foundation, the Spencer Foundation, and the Graduate School of the University of Wisconsin–Madison. A public use file of data from the Wisconsin Longitudinal Study is available from the Data and Program Library Service, University of Wisconsin–Madison, 1180 Observatory Drive, Madison, WI 53706 and at http://dpls.dacc.wisc.edu/WLS/wlsarch.htm. All errors or omissions, however, are the responsibility of the author.

Appendix

WLS Variable Descriptions

Table 1 provides descriptive statistics for measures used in my analyses of the impact of childhood social and economic circumstances on (1) mortality and (2) psychological distress in 2004 among WLS respondents. In this appendix I describe how each variable was constructed.

Mortality was assessed based on links of the WLS to the National Death Index. Psychological distress is measured using a subsection of the full CES-D.

Childhood social and economic conditions are measured using indicators of parents' income in 1957 (from state tax records), parents' educational attainments, father's occupation, number of siblings, and an indicator of whether graduates lived with both of their biological parents in 1957.

Childhood health is measured using indicators of whether the child's overall health was excellent or very good (as opposed to fair, poor, or very poor), a count of how many conditions or illnesses a child had from a list of several possibilities (e.g., asthma, polio, diphtheria), and whether the child's activities were limited by health problems.

Education is expressed as years of schooling completed. Cognitive skills are measured using graduates' junior-year Henmon-Nelson IQ test score. Noncognitive skills in late adolescence are measured in terms of high school class rank, high school curricular track, and an indicator of whether graduates' teachers denoted them as "outstanding."

Adult socioeconomic standing is operationalized using 1993 measures of household income, household net worth, and graduates' occupational standing in the metric of occupational education (Hauser and Warren 1997). Measures of graduates' working conditions on their current or most recent jobs in 1993 include job satisfaction, control over working schedules, and indicators of whether graduates frequently exerted effort or were exposed to dangerous working conditions.

Health risk behaviors in 1993 include measures of current and past smoking, frequency of light and heavy exercise, and number of alcoholic drinks consumed per month. Finally, I include 1993 scale measures of graduates' autonomy, environmental mastery, personal growth, positive relation with others, purpose in life, and self-acceptance. The content of several of these psychological scales resemble the concept of "learned effectiveness" described by Mirowsky and Ross (1999, 2003a).

References

Aaronson Daniel, and Mazumder Bhashkar. 2008. Intergenerational economic mobility in the United States, 1940 to 2000. Journal of Human Resources 43:139–72.

AECF. 2011. 2011 Kids Count data book. Baltimore, MD: The Annie E. Casey Foundation.

Anderson S, Leventhal T, and Dupéré V. 2014. Exposure to neighborhood affluence and poverty in childhood and adolescence and academic achievement and behavior. Applied Developmental Science 18:123–38.

Anger Silke. 2010. The intergenerational transmission of cognitive and non-cognitive skills during adolescence and young adulthood. Institute for the Study of Labor (IZA), Discussion Paper No. 5749, Bonn.

Anger S, and Schnitzlein DD. 2013. Like brother, like sister? The importance of family background for cognitive and non-cognitive skills. Unpublished manuscript.

Autor David H., Katz Lawrence F., and Kearney Melissa S.. 2008. Trends in U.S. wage inequality: Revising the revisionists. Review of Economics and Statistics 90:300–323.

Béatrice N, Lise G, Victoria ZM, and Louise S. 2012. Longitudinal patterns of poverty and health in early childhood: Exploring the influence of concurrent, previous, and cumulative poverty on child health outcomes. BMC Pediatrics 12:141. [PubMed: 22947499]

Ben-Shlomo Y, and Kuh D. 2002. A life course approach to chronic disease epidemiology: Conceptual models, empirical challenges and interdisciplinary perspectives. International Journal of Epidemiology 31:285–93. [PubMed: 11980781]

Black SE, and Devereux PJ. 2011. Recent developments in intergenerational mobility. Handbook of Labor Economics 4:1487–1541.

Blau Peter, and Duncan Otis Dudley. 1967. The American occupational structure. New York, NY: John Wiley & Sons.

Bowen Mary Elizabeth, and Gonzalez Hector M.. 2010. Childhood socioeconomic position and disability in later life: Results of the Health and Retirement Study. American Journal of Public Health 100:S197–S203. [PubMed: 19762655]

Breen Richard, and Jonsson Jan O.. 2007. Explaining change in social fluidity: Educational equalization and educational expansion in twentieth-century Sweden. American Journal of Sociology 112 (6):1775–1810.

Brunello G, Fort M, Schneeweis N, and Winter-Ebmer R. Forthcoming. The causal effect of education on health: What is the role of health behaviors? Health Economics.

Brunner Eric, Shipley Martin J., Blane David, Smith George Davey, and Marmot Michael G. 1999. When does cardiovascular risk start? Past and present socioeconomic circumstances and risk factors in adulthood. Journal of Epidemiology and Community Health 53:757–64. [PubMed: 10656084]

Buchmann Claudia, Condron Dennis J., and Roscigno Vincent J.. 2010. Shadow education, American style: Test preparation, the SAT and college enrollment. Social Forces 89:435–61.

Case A, Fertig A, and Paxson C. 2005. The lasting impact of childhood health and circumstance. Journal of Health Economics 24:365–89. [PubMed: 15721050]

Cherlin Andrew J. 2010. Demographic trends in the United States: A review of research in the 2000s. Journal of Marriage and Family 72:403–19. [PubMed: 22399825]

Chetty R, Hendren N, Kline P, and Saez E. 2014. Where is the land of opportunity? The geography of intergenerational mobility in the United States. NBER Working Paper No. w19843, National Bureau of Economic Research, Cambridge, MA.

Condron Dennis J. 2009. Social class, school and non-school environments, and black/white inequalities in children's learning. American Sociological Review 74:683–708.

Conti Gabriella, Heckman James, and Urzua Sergio. 2010. The education-health gradient. American Economic Review 100:234–38.

Cooper R, Cutler J, Desvigne-Nickens P, Fortmann SP, Friedman L, Havlik R, Hogelin G, Marler J, McGovern P, Morosco G, Mosca L, Pearson T, Stamler J, Stryer D, and Thom T. 2000. Trends and disparities in coronary heart disease, stroke, and other cardiovascular diseases in the United States —Findings of the National Conference on Cardiovascular Disease Prevention. Circulation 102:3137–47. [PubMed: 11120707]

Crimmins EM, and Saito Y. 2001. Trends in healthy life expectancy in the United States, 1970–1990: Gender, racial, and educational differences. Social Science & Medicine 52:1629–41. [PubMed: 11327137]

Currie Janet. 2009. Healthy, wealthy, and wise: Socioeconomic status, poor health in childhood, and human capital development. Journal of Economic Literature 47:87–122.

Cutler David M., Lange Fabian, Meara Ellen, Richards Seth, and Ruhm Christopher J.. 2010. Explaining the rise of educational gradients in mortality. NBER Working Paper 15678, National Bureau of Economic Research, Cambridge, MA.

Cutler David M., and Adriana Lleras-Muney. 2008. Education and health: Evaluating theories and evidence. In Making Americans healthier: Social and economic policy as health policy, eds. Schoeni R, House J, Kaplan G, and Pollack H, 29–60. New York, NY: Russell Sage Foundation.

Cutler David M., and Lleras-Muney Adriana. 2010. Understanding differences in health behaviors by education. Journal of Health Economics 29:1–28. [PubMed: 19963292]

Dickens William T., and Flynn James R.. 2006. Black Americans reduce the racial IQ gap—Evidence from standardization samples. Psychological Science 17:913–20. [PubMed: 17100793]

Duleep HO 1989. Measuring socioeconomic mortality differentials over time. Demography 26:345–51. [PubMed: 2731627]

Elo Irma T. 2009. Social class differentials in health and mortality: Patterns and explanations in comparative perspective. Annual Review of Sociology 35:553–72.

Emerson Eric. 2009. Relative child poverty, income inequality, wealth, and health. JAMA – Journal of the American Medical Association 301:425–26. [PubMed: 19176444]

Erikson Robert, and Goldthorpe John H.. 1992. The constant flux: A study of class mobility in industrial societies. Cambridge, MA: Oxford University Press.

Erikson R, and Goldthorpe JH. 2010. Has social mobility in Britain decreased? Reconciling divergent findings on income and class mobility. British Journal of Sociology 61:211–30.

Evans Gary W., and Schamberg Michelle A.. 2009. Childhood poverty, chronic stress, and adult working memory. Proceedings of the National Academy of Sciences of the United States of America 106:6545–49. [PubMed: 19332779]

Featherman DL, Jones FL, and Hauser RM. 1975. Assumptions of social mobility research in the US: The case of occupational status. Social Science Research 4:329–60.

Featherman David L., and Hauser Robert Mason. 1978. Opportunity and change. New York, NY: Academic Press.

Friedman EM, Montez JK, Sheehan CM, Guenewald TL, and Seeman TE. 2015. Childhood adversities and adult cardiometabolic health: Does the quantity, timing, and type of adversity matter? Journal of Aging and Health, online, 0898264315580122.

Galobardes B, Lynch JW, and Smith GD. 2004. Childhood socioeconomic circumstances and cause-specific mortality in adulthood: Systematic review and interpretation. Epidemiologic Reviews 26:7–21. [PubMed: 15234944]

Goesling Brian. 2007. The rising significance of education for health? Social Forces 85:1621–44.

Goldin Claudia, and Katz Lawrence F.. 1999. The returns to skill in the United States across the twentieth century. NBER Working Paper No. 7126, National Bureau of Economic Research, Cambridge, MA.

Goldin Claudia, and Katz Lawrence F.. 2008. Long-run changes in the wage structure: Narrowing, widening, polarizing. Brookings Papers on Economic Activity 2:135–65.

Grodsky Eric, and Jackson Erika. 2009. Social stratification in higher education. Teachers College Record 111:2347–84.

Grodsky Eric, Warren John Robert, and Felts Erika. 2008. Testing and social stratification in American education. Annual Review of Sociology 34:385–404.

Grusky DB, and DiPrete TA. 1990. Recent trends in the process of stratification. Demography 27:617–37. [PubMed: 2249749]

Grusky DB, and Hauser RM. 1984. Comparative social mobility revisited: Models of convergence and divergence in 16 countries. American Sociological Review 49:19–38.

Haas Steven A. 2006. Health selection and the process of social stratification: The effect of childhood health on socioeconomic attainment. Journal of Health and Social Behavior 47:339–54. [PubMed: 17240924]

Haas Steven A. 2007. The long-term effects of poor childhood health: An assessment and application of retrospective reports. Demography 44:113–35. [PubMed: 17461339]

Haas Steven A., Glymour M. Maria, and Berkman Lisa F.. 2011. Childhood health and labor market inequality over the life course. Journal of Health and Social Behavior 52:298–313. [PubMed: 21896684]

Haas SA, Krueger PM, and Rohlfsen L. 2012. Race/ethnic and nativity disparities in later life physical performance: the role of health and socioeconomic status over the life course. Journals of Gerontology Series B: Psychological Sciences and Social Sciences 67:238–48.

Hatch Stephani L., Jones Peter B., Kuh Diana, Hardy Rebecca, Wadsworth Michael E. J., and Richards Marcus. 2007. Childhood cognitive ability and adult mental health in the British 1946 birth cohort. Social Science & Medicine 64:2285–96. [PubMed: 17397976]

Hauser Robert M. 2005. Survey response in the long run: The Wisconsin Longitudinal Study. Field Methods 17:3–29.

Hauser Robert M. 2010. Causes and consequences of cognitive functioning across the life course. Educational Researcher 39:95–109. [PubMed: 22383855]

Hauser Robert M., and Huang MH. 1997. Verbal ability and socioeconomic success: A trend analysis. Social Science Research 26:331–76.

Hauser Robert M., and Palloni Alberto. 2010. Why intelligent people live longer. CDE Working Paper 2010–04, Center for Demography and Ecology, Madison, WI.

Hauser Robert M., and Warren John Robert. 1997. Socioeconomic indexes of occupational status: A review, update, and critique. In Sociological methodology, ed. Raftery Adrian, 177–298. Cambridge: Blackwell.

Hauser Robert M., Warren John Robert, Huang Min-Hsiung, and Carter Wendy. 2000. Occupational status, education, and social mobility in the meritocracy. In Meritocracy and economic inequality, eds. Kenneth Arrow, Samuel Bowles, and Steven Durlauf, 179–229. Princeton, NJ: Princeton University Press.

Haveman Robert, and Smeeding Timothy. 2006. The role of higher education in social mobility. The Future of Children 16:125–50. [PubMed: 17036549]

Hayward MD, and Gorman BK. 2004. The long arm of childhood: The influence of early-life social conditions on men's mortality. Demography 41:87–107. [PubMed: 15074126]

Heckman James J. 2006. Skill formation and the economics of investing in disadvantaged children. Science 312:1900–1902. [PubMed: 16809525]

Heckman James J. 2010. A research agenda for understanding the dynamics of skill formation. In American Economic Association, ten years and beyond: Economists answer NSF's call for long-term research agendas. Rochester, NY: Social Science Research Network.

Herd Pamela. 2010. Education and health in late-life among high school graduates: Cognitive versus psychological aspects of human capital. Journal of Health and Social Behavior 51:478–96. [PubMed: 21131622]

Hout Michael, and Lynch Scott M.. 2008. Subjective health and income since 1972. Princeton, NJ: Princeton University, Office of Population Research.

Hout Michael, Raftery Adrian E., and Bell Eleanor O.. 1993. Making the grade: Educational stratification in the United States, 1925–1989. In Persistent inequality: Changing educational attainment in thirteen countries, ed. Shavit Y and Blossfeld H-P, 25–49. Boulder, CO: Westview Press.

Hummer Robert A., and Lariscy Joseph T.. 2011. Educational attainment and adult mortality. In International handbook of adult mortality, eds. Rogers Richard G. and Crimmins Eileen M., 241–61. New York, NY: Springer.

Jackson Margot I. 2010. A life course perspective on child health, cognition and occupational skill qualifications in adulthood: Evidence from a British cohort. Social Forces 89:89–116.

Kaestner Robert. 2009. Adolescent cognitive and non-cognitive correlates of adult health. NBER Working Paper 14924, National Bureau of Economic Research, Cambridge, MA.

Kanjilal Sanjat, Gregg Edward W., Cheng Yiling J., Zhang Ping, Nelson David E., Mensah George, and Beckles Gloria L. A.. 2006. Socioeconomic status and trends in disparities in 4 major risk factors for cardiovascular disease among US adults, 1971–2002. Archives of Internal Medicine 166:2348–55. [PubMed: 17130388]

Kawachi Ichiro, Adler Nancy E., and Dow William H.. 2010. Money, schooling, and health: Mechanisms and causal evidence. Annals of the New York Academy of Sciences, 1186:56–68. [PubMed: 20201868]

Kim ChangHwan, and Sakamoto Arthur. 2008. The rise of intra-occupational wage inequality in the United States, 1983 to 2002. American Sociological Review 73:129–57.

Landsbergis Paul A. 2010. Assessing the contribution of working conditions to socioeconomic disparities in health: A commentary. American Journal of Industrial Medicine 53:95–103. [PubMed: 19852020]

Lareau Annette. 2003. Unequal childhoods: Race, class and family life. Berkeley: University of California Press.

Lee Chul-In, and Solon Gary. 2009. Trends in intergenerational income mobility. NBER Working Paper #12007, National Bureau of Economic Research, Cambridge, MA.

Liu Hui, and Hummer Robert A.. 2008. Are educational differences in US self-rated health increasing? An examination by gender and race. Social Science & Medicine 67:1898–1906. [PubMed: 18930339]

Lochner Lance. 2011. Non-production benefits of education: Crime, health, and good citizenship. NBER Working Paper #16722, National Bureau of Economic Research, Cambridge, MA.

Lucas SR 2001. Effectively maintained inequality: Education transitions, track mobility, and social background effects. American Journal of Sociology 106:1642–90.

Lynch J, and Smith GD. 2005. A life course approach to chronic disease epidemiology. Annual Review of Public Health 26:1–35.

Lynch SM 2003. Cohort and life-course patterns in the relationship between education and health: A hierarchical approach. Demography 40:309–31. [PubMed: 12846134]

Lynch Scott M. 2006. Explaining life course and cohort variation in the relationship between education and health: The role of income. Journal of Health and Social Behavior 47:324–38. [PubMed: 17240923]

Marmot M, Shipley M, Brunner E, and Hemingway H. 2001. Relative contribution of early life and adult socioeconomic factors to adult morbidity in the Whitehall II study. Journal of Epidemiology and Community Health 55:301–7. [PubMed: 11297647]

McCall Leslie, and Percheski Christine. 2010. Income inequality: New trends and research directions. Annual Review of Sociology 36:329–47.

McDonough P, Duncan GJ, Williams D, and House J. 1997. Income dynamics and adult mortality in the United States, 1972 through 1989. American Journal of Public Health 87:1476–83. [PubMed: 9314800]

McLanahan Sara, and Percheski Christine. 2008. Family structure and the reproduction of inequalities. Annual Review of Sociology 34:257–76.

Meara Ellen R., Richards Seth, and Cutiew David M.. 2008. The gap gets bigger: Changes on mortality and life expectancy, by education, 1981–2000. Health Affairs 27:350–60. [PubMed: 18332489]

Miech Richard, Pampel Fred, Kim Jinyoung, and Rogers Richard G.. 2011. The enduring association between education and mortality: The role of widening and narrowing disparities. American Sociological Review 76:913–34. [PubMed: 26937041]

Mirowsky John, and Ross Catherine E.. 1999. Economic hardship across the life course. American Sociological Review 64 (4): 548–69.

Mirowsky John, and Ross Catherine E.. 2003a. Education, social status, and health. Piscataway, NJ: Transaction Publishers.

Mirowsky John, and Ross Catherine E.. 2003b. Social causes of psychological distress. Piscataway, NJ: Transaction Publishers.

Montez Jennifer K., and Hayward Mark D.. 2014. Cumulative childhood adversity, educational attainment, and active life expectancy among US adults. Demography 51:413–35. [PubMed: 24281740]

Musick K, and Mare RD. 2006. Recent trends in the inheritance of poverty and family structure. Social Science Research 35:471–99.

Nikiéma Beatrice, Spencer Nick, and Seguin Louise. 2010. Poverty and chronic illness in early childhood: A comparison between the United Kingdom and Quebec. Pediatrics 125:E499–E507. [PubMed: 20123770]

Olivetti C, and Paserman MD. 2013. In the name of the son (and the daughter): Intergenerational mobility in the United States, 1850–1930. NBER Working Paper No. w18822, National Bureau of Economic Research, Cambridge, MA.

O'Rand AM, and Hamil-Luker J. 2005. Processes of cumulative adversity: Childhood disadvantage and increased risk of heart attack across the life course. Journals of Gerontology Series B – Psychological Sciences and Social Sciences 60:117–24.

Palloni Alberto. 2006. Reproducing inequalities: Luck, wallets, and the enduring effects of childhood health. Demography 43:587–615. [PubMed: 17236536]

Palloni Alberto, Milesi Carolina, White Robert G., and Turner Alyn. 2009. Early childhood health, reproduction of economic inequalities and the persistence of health and mortality differentials. Social Science & Medicine 68:1574–82. [PubMed: 19269728]

Pampel Fred C. 2009. The persistence of educational disparities in smoking. Social Problems 56:526–42.

Pappas G, Queen S, Hadden W, and Fisher G. 1993. The increasing disparity in mortality between socioeconomic groups in the United-States, 1960 and 1986. New England Journal of Medicine 329:103–9.

Perie Marianne, Moran Rebecca, and Lutkus Anthony D.. 2005. NAEP 2004 trends in academic progress: Three decades of student performance in reading and mathematics. NCES 2005–464. Washington, DC: Institute for Education Science, U.S. Department of Education.

Potter D, and Roksa J. 2013. Accumulating advantages over time: Family experiences and social class inequality in academic achievement. Social Science Research 42:1018–32. [PubMed: 23721671]

Reynolds Arthur J., Temple Judy A., Ou Suh-Ruu, Robertson Dylan L., Mersky Joshua P., Topitzes James W., and Niles Michael D.. 2007. Effects of a school-based, early childhood intervention on

adult health and well-being—A 19-year follow-up of low-income families. Archives of Pediatrics & Adolescent Medicine 161:730–39. [PubMed: 17679653]

Roos LL, Hiebert B, Manivong P, Edgerton J, Walld R, MacWilliam L, and De Rocquigny J. 2013. What is most important: Social factors, health selection, and adolescent educational achievement. Social Indicators Research 110:385–414.

Royston Patrick. 2004. Multiple imputation of missing values. Stata Journal 4 (3): 227–41.

Royston Patrick. 2009. Multiple imputation of missing values: Further update of ice, with an emphasis an categorical variables. Stata Journal 9 (3): 466–77.

Sastry Narayan, and Pebley Anne R.. 2010. Family and neighborhood sources of socioeconomic inequality in children's achievement. Demography 47:777–800. [PubMed: 20879688]

Schoeni RF, Martin LG, Andreski PM, and Freedman VA. 2005. Persistent and growing socioeconomic disparities in disability among the elderly: 1982–2002. American Journal of Public Health 95:2065–70. [PubMed: 16254235]

Shavit Yossi, and Blossfeld Hans-Peter. 1993. Persistent inequality: Changing educational attainment in thirteen countries. Boulder, CO: Westview Press.

Shonkoff Jack P., Boyce W. Thomas, and McEwen Bruce S.. 2009. Neuroscience, molecular biology, and the childhood roots of health disparities: Building a new framework for health promotion and disease prevention. JAMA – Journal of the American Medical Association 301:2252–59. [PubMed: 19491187]

Singh Gopal K., and Kogan Michael D.. 2007. Persistent socioeconomic disparities in infant, neonatal, and postneonatal mortality rates in the United States, 1969–2001. Pediatrics 119:E928–39. [PubMed: 17403832]

Slopen N, McLaughlin KA, Dunn EC, and Koenen KC. 2013. Childhood adversity and cell-mediated immunity in young adulthood: Does type and timing matter? Brain, Behavior, and Immunity 28:63–71.

Spencer N 2003. Social, economic, and political determinants of child health. Pediatrics 112:704–6. [PubMed: 12949325]

Steenland K, Hu S, and Walker J. 2004. All-cause and cause-specific mortality by socioeconomic status among employed persons in 27 US states, 1984–1997. American Journal of Public Health 94:1037–42. [PubMed: 15249312]

Strully Kate W., Rehkopf David H., and Xuan Ziming. 2010. Effects of prenatal poverty on infant health: State earned income tax credits and birth weight. American Sociological Review 75:534–62. [PubMed: 21643514]

Tarkiainen Lasse, Martikainen Pekka, Laaksonen Mikko, and Valkonen Tapani. 2012. Trends in life expectancy by income from 1988 to 2007: Decomposition by age and cause of death. Journal of Epidemiology and Community Health. 66:573–78. [PubMed: 21378391]

Vanroelen Christophe, Levecque Katia, Moors Guy, and Louckx Fred. 2010. Linking credentialed skills, social class, working conditions and self-reported health: a focus on health inequality-generating mechanisms. Sociology of Health & Illness 32:948–64. [PubMed: 20887630]

Warren John Robert, and Hernandez Elaine M.. 2007. Did socioeconomic inequalities in morbidity and mortality change in the United States over the course of the twentieth century? Journal of Health and Social Behavior 48:335–51. [PubMed: 18198683]

Warren John Robert, and Kuo HH. 2003. How to measure what people do for a living in research on the socioeconomic correlates of health. Annals of Epidemiology 13:325–34. [PubMed: 12821271]

Western Bruce, Bloome Deirdre, and Percheski Christine. 2008. Inequality among American families with children, 1975 to 2005. American Sociological Review 73:903–20.

Xu Jiaquan, Kochanek Kenneth D., Murphy Sherry L., and Tejada-Vera Betzaida. 2010. Deaths: Final data for 2007. National Vital Statistics Reports, vol. 58, no 19. Hyattsville, MD: National Center for Health Statistics.

Zajacova A, Hummer RA, and Rogers RG. 2012. Education and health among US working-age adults: A detailed portrait across the full educational attainment spectrum. Biodemography and Social Biology 58:40–61. [PubMed: 22582892]

Ziol-Guest Kathleen M., Duncan Greg J., and Kalil Ariel. 2009. Early childhood poverty and adult body mass index. American Journal of Public Health 99:527–32. [PubMed: 19106427]

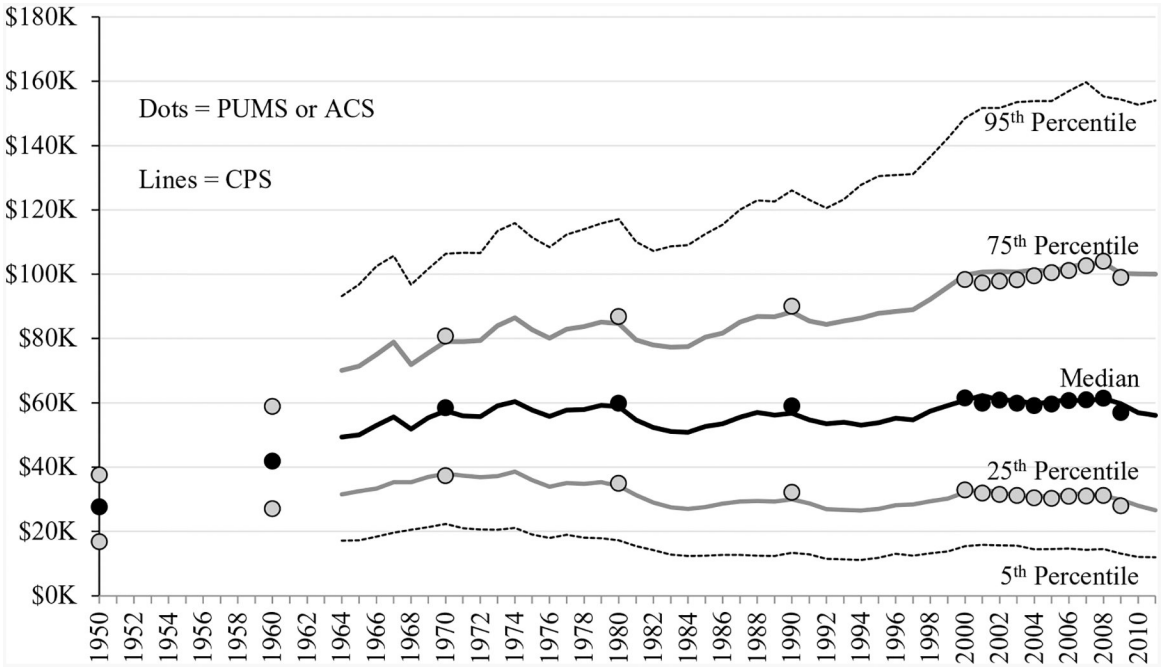

FIGURE 1.

Distribution of Children's Family Income (in 2010 Dollars), 1964–2011 (Source: Author's Calculations, 1968 through 2010 Current Population Surveys (CPS) and 1950 through 2000 Census, and 2001 through 2010 American Community Surveys)

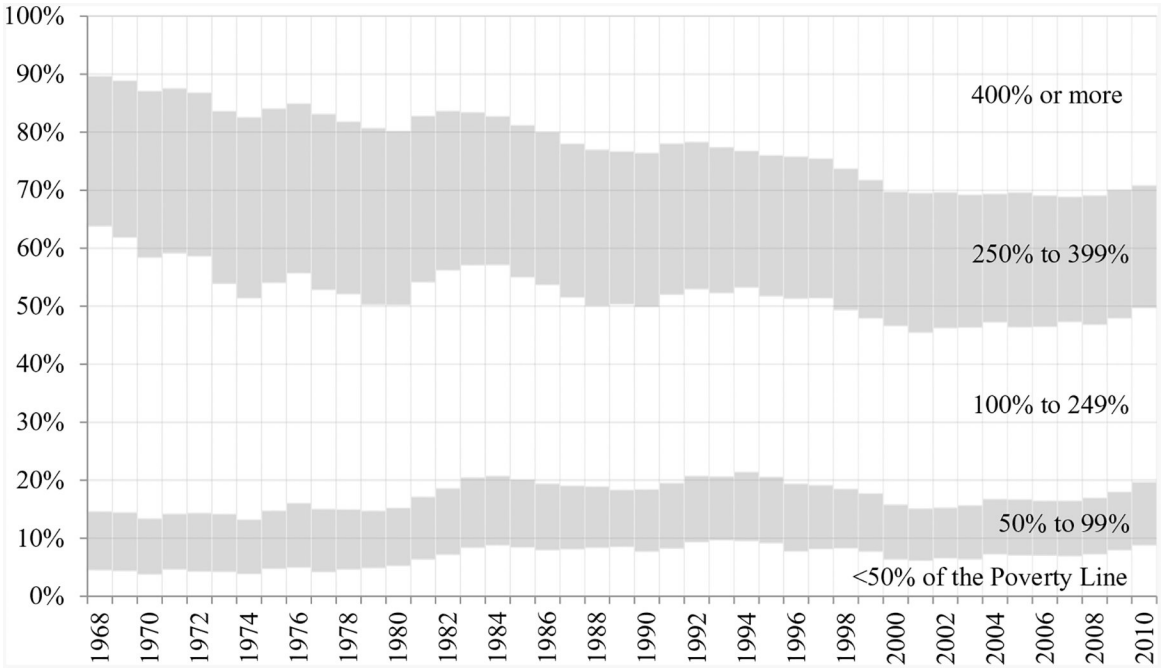

FIGURE 2.
Distribution of Children Relative to the Poverty Line, 1968–2010 (Sources: Author's Calculations, 1968 through 2010 Current Population Surveys)

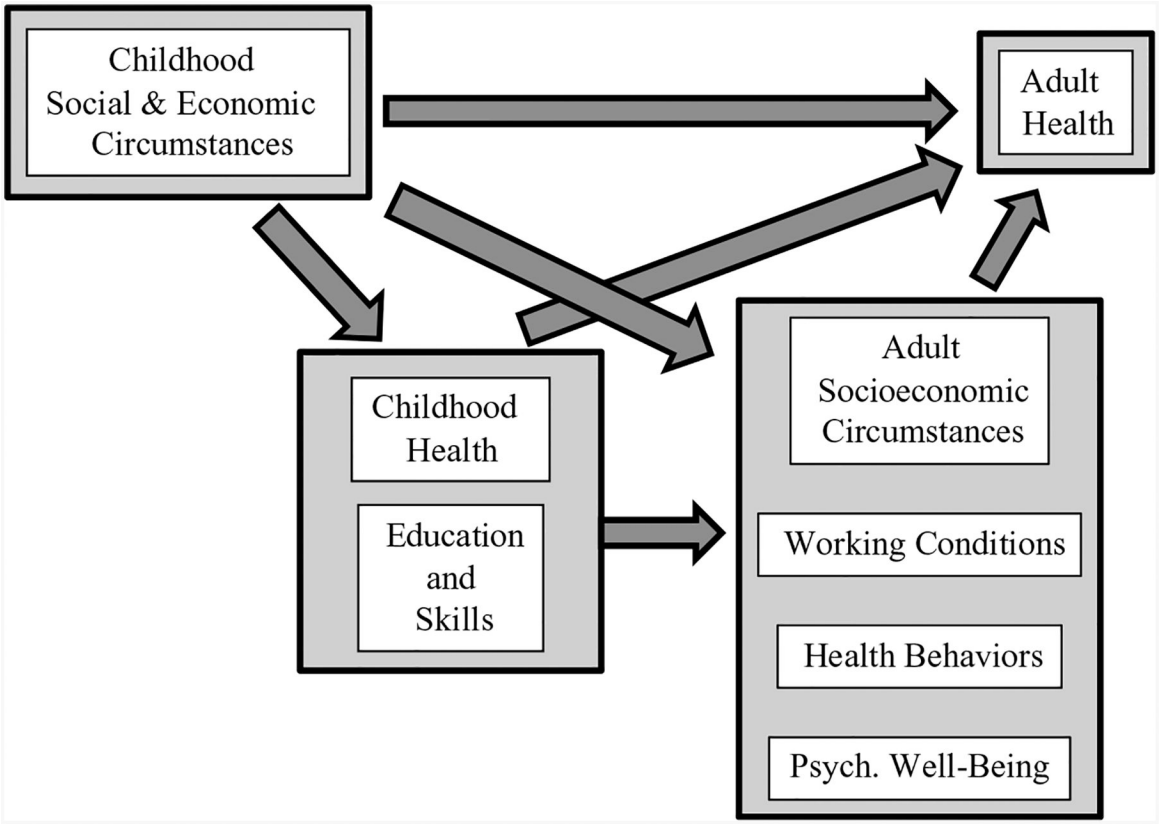

FIGURE 3.
Model of the Effects of Childhood Socioeconomic Circumstances on Adult Health

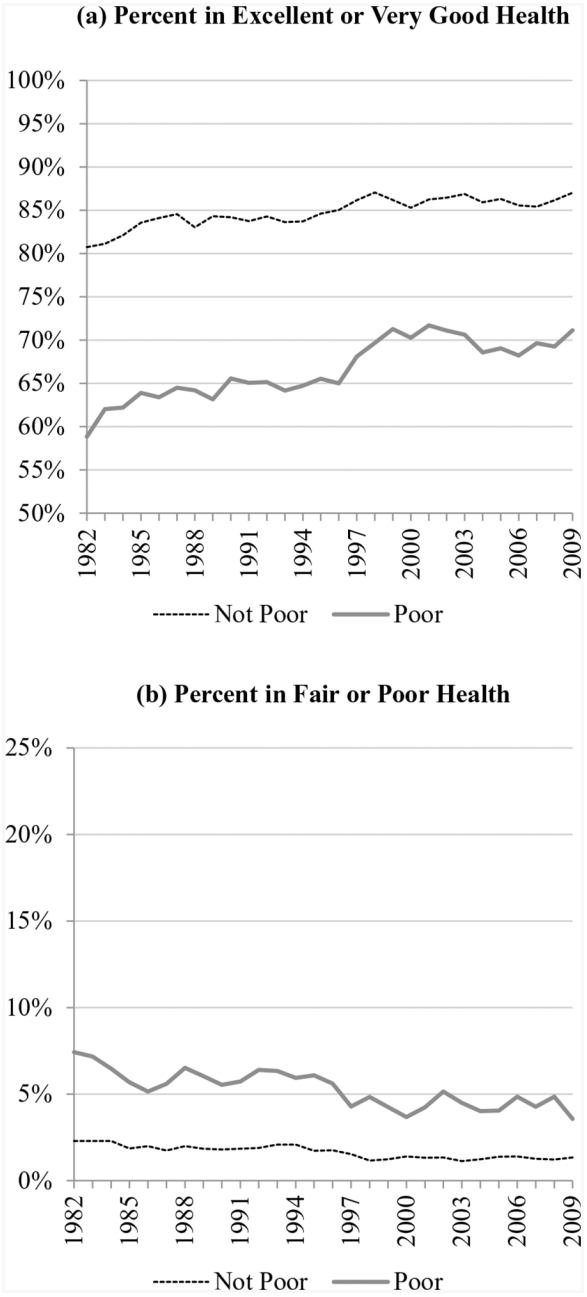

FIGURE 4.
Children's Self-Assessed Overall Health, by Family Poverty Status, 1982–2009

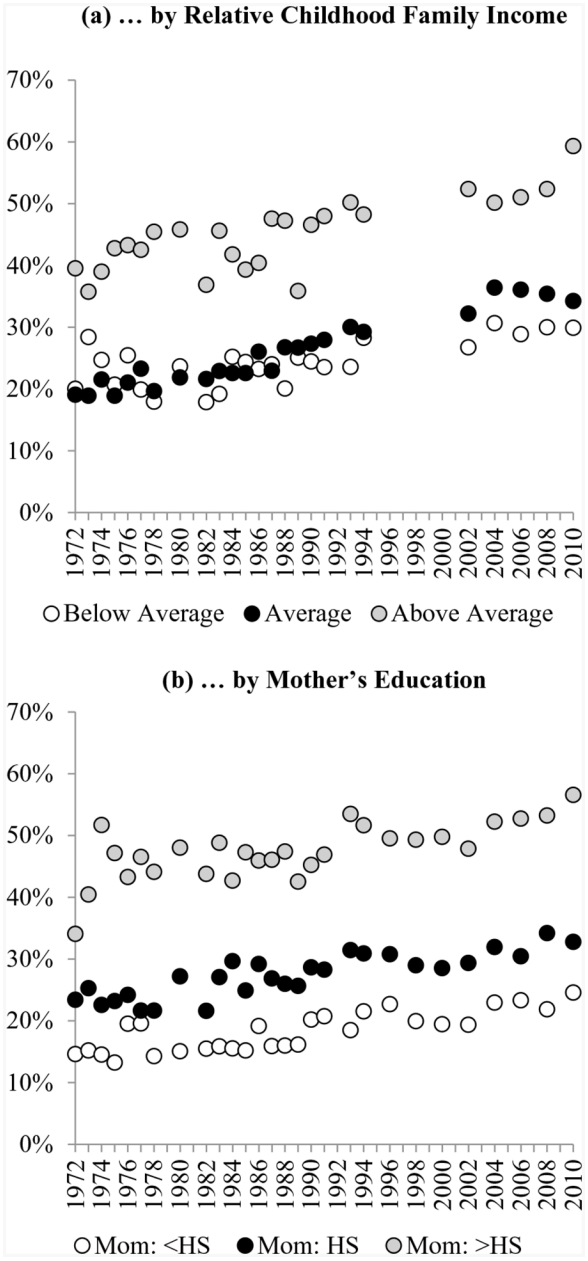

FIGURE 5.

Percentage of High School Completers with at Least a Bachelor's Degree, by Childhood Family Background, 1972–2010

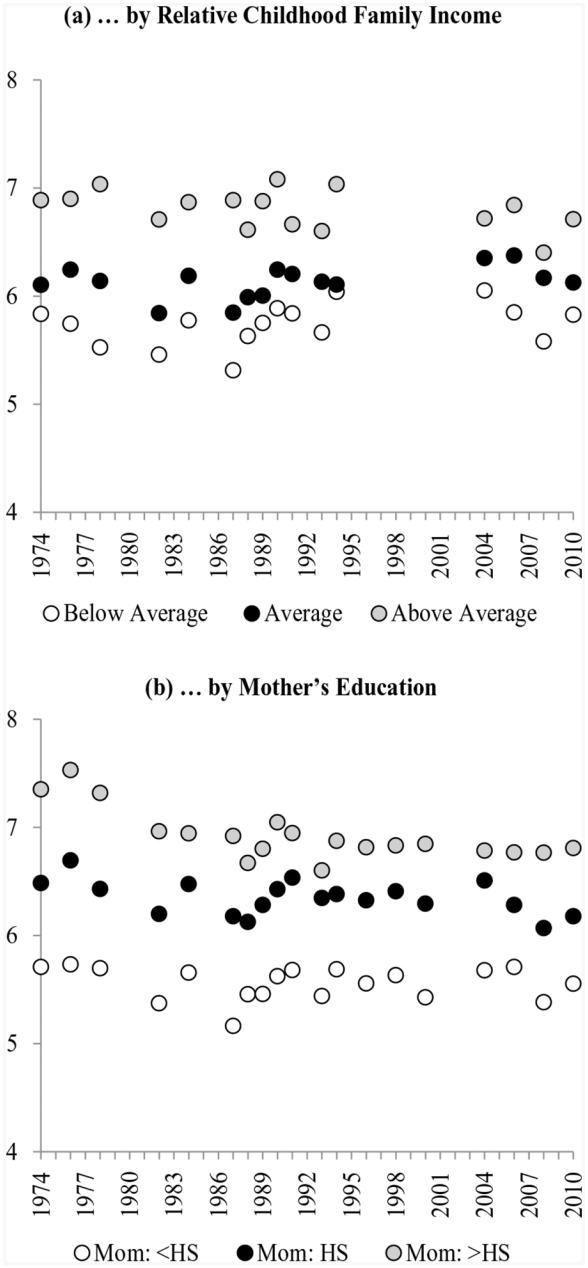

FIGURE 6.
WORDSUM Vocabulary Test Score, by Childhood Family Background, 1974–2010

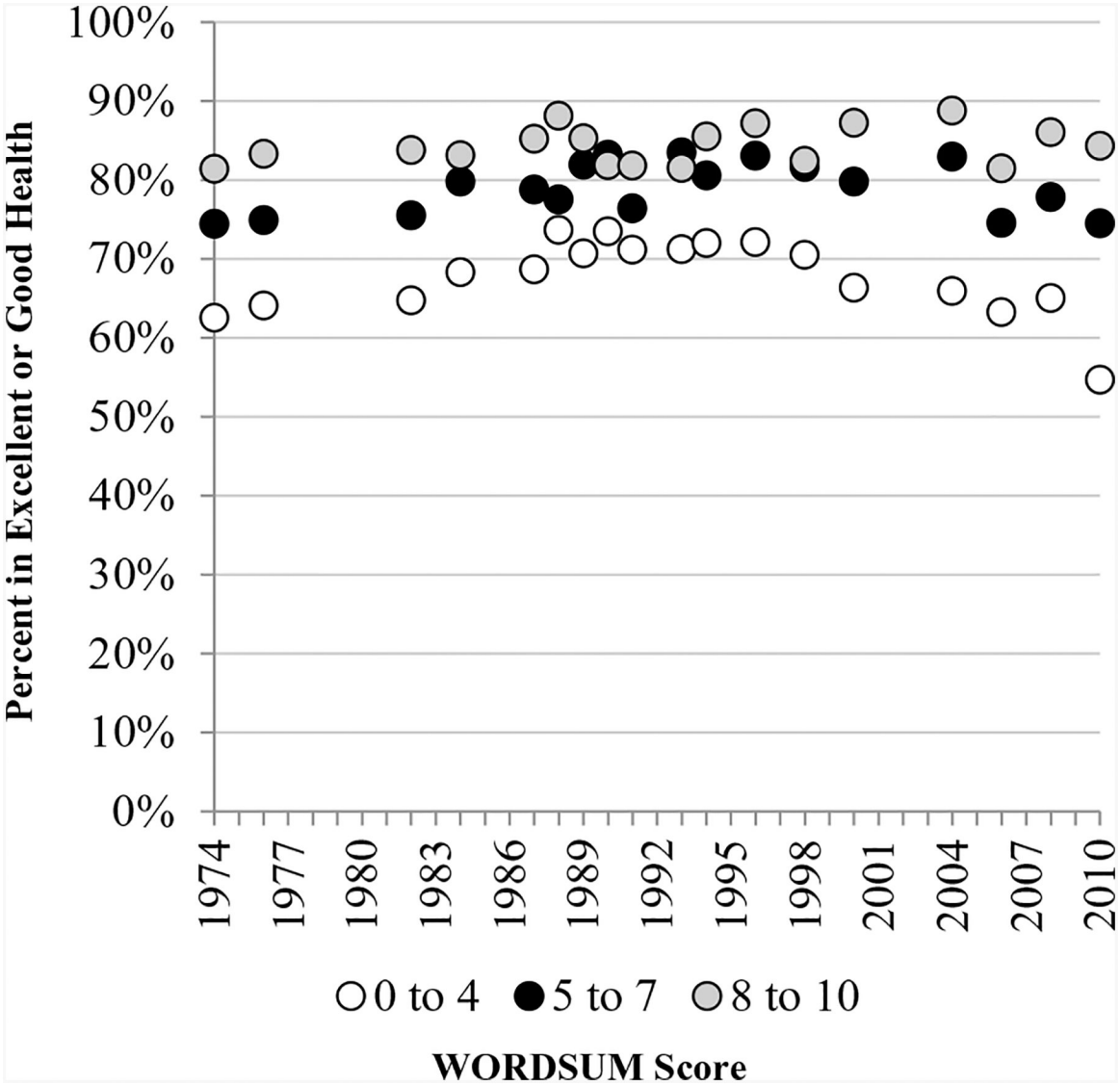

FIGURE 7.
Self-Assessed Overall Health by WORDSUM Vocabulary Test Score, 1974–2010

TABLE 1

Descriptive Statistics for Variables in the 1957 through 2004 Wisconsin Longitudinal Study

	Men (*n* = 2,510)				Women (*n* = 3,018)			
	Avg or %	**(*SD*)**	**Min.**	**Max.**	**Avg or %**	**(*SD*)**	**Min.**	**Max.**
Dependent Variable								
CES-D Psych. Distress Score (2004)	12.30	(12.64)	0.0	108.0	14.66	(14.48)	0.0	104.0
Family Socioeconomic Background								
Parents' Income in ln$ (1957)	3.92	(0.69)	0.0	6.9	3.91	(0.68)	1.1	6.9
Father's Education (1957)	9.86	(3.48)	0.0	24.0	9.79	(3.45)	0.0	26.0
Mother's Education (1957)	10.66	(2.80)	0.0	20.0	10.44	(2.86)	0.0	19.0
Father's Occupation (1957)	34.83	(23.31)	0.0	96.0	35.14	(23.43)	0.0	96.0
Number of Siblings	3.16	(2.49)	0.0	26.0	3.27	(2.51)	0.0	15.0
Lived with Two Parents	90%		0.0	1.0	91%		0.0	1.0
Childhood Health								
Childhood: Excellent or V. Good Health	85%		0.0	1.0	82%		0.0	1.0
Childhood: Count of Illnesses	1.02	(0.99)	0.0	8.0	1.16		0.0	7.0
Childhood: Health Restricted Activities	13%		0.0	1.0	12%		0.0	1.0
Education, Cognitive Ability, and Non-Cognitive Ability								
Years of Education	14.06	(2.53)	12.0	20.0	13.16	(1.87)	12.0	20.0
Henmon-Nelson IQ (Junior Year)	102.71	(14.86)	61.0	145.0	102.57	(13.96)	61.0	145.0
High School Class Rank	47.45	(27.84)	0.0	99.0	61.06	(26.44)	0.0	99.0
Rated "Outstanding" by Teacher	11%		0.0	1.0	13%		0.0	1.0
College Track in High School	67%		0.0	1.0	57%		0.0	1.0
Adult Socioeconomic Characteristics & Working Conditions								
Household Income (1993)	10.18	(2.18)	0.0	12.6	9.63	(2.81)	0.0	12.6
Household Net Worth (1993)	11.93	(2.36)	0.0	18.4	11.27	(2.95)	0.0	18.4
Occupational Standing (1993)	62.45	(25.46)	10.6	99.9	61.16	(22.92)	8.3	99.9
Satisfied with Job? (1993)	51%		0.0	1.0	54%	(0.50)		1.0
Controls Work Schedule? (1993)	60%		0.0	1.0	44%	(0.50)		1.0
Job Requires Frequent Effort? (1993)	31%		0.0	1.0	37%	(0.48)		1.0
Dangerous Conditions on Job? (1993)	43%		0.0	1.0	25%	(0.43)		1.0
Adult Health Risk Behaviors								
Smoked Ever? (1993)	60%		0.0	1.0	47%	(0.50)		1.0
Smokes Now? (1993)	16%		0.0	1.0	17%	(0.38)		1.0
Light Exercise per Month (1993)	8.07	(4.07)	0.5	12.0	7.84	(4.30)	0.5	12.0
Heavy Exercise per Month (1993)	3.89	(4.34)	0.5	12.0	3.02	(3.91)	0.5	12.0
Alcoholic Drinks per Month (1993)	18.21	(24.29)	0.0	240.0	10.15	(15.28)	0.0	155.0
Psychological Well-Being								
Autonomy Score (1993)	31.94	(4.90)	13.0	42.0	31.04	(5.70)	7.0	42.0
Environmental Mastery Score (1993)	33.84	(4.85)	8.0	42.0	34.11	(5.12)	9.0	42.0
Personal Growth Score (1993)	32.76	(5.34)	9.0	42.0	33.90	(5.46)	12.0	42.0
Positive Relations to Others Score (1993)	32.99	(5.42)	14.0	42.0	35.27	(5.20)	10.0	42.0

	Men (*n* = 2,510)				Women (*n* = 3,018)			
	Avg or %	**(*SD*)**	**Min.**	**Max.**	**Avg or %**	**(*SD*)**	**Min.**	**Max.**
Purpose in Life Score (1993)	34.05	(5.22)	12.0	42.0	34.20	(5.85)	8.0	42.0
Self-Acceptance Score (1993)	33.26	(5.61)	7.0	42.0	33.40	(6.14)	7.0	42.0

NOTE: For this table, the WLS sample is restricted to individuals who responded to the 1993 and 2004 telephone and mail surveys. I have also excluded the small number of respondents not in the modal birth cohorts. Missing data have been imputed use the ICE routine in Stata.

TABLE 2

Logistic Regressions of WLS Graduates' Death Between 1993 and 2004, by Sex

	Men (n = 3,155)										Women (n = 3,475)									
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 1		Model 2		Model 3		Model 4		Model 5	
	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$
Family Socioeconomic Background																				
Parents' 1957 Income: Bottom Quartile	**1.33**	(**2.86**)	**1.35**	(**2.79**)	1.20	(1.69)	1.17	(1.45)	1.13	(1.08)	1.13	(1.06)	1.07	(0.50)	0.94	(0.50)	0.95	(0.43)	0.94	(0.42)
Father's Education: High School		—	1.05	(0.41)	1.05	(0.42)	1.11	(0.91)	1.08	(0.65)		—	1.07	(0.52)	1.06	(0.43)	1.10	(0.70)	1.05	(0.36)
Father's Education: At Least Some Coll.		—	0.96	(0.25)	0.87	(0.81)	0.97	(0.15)	0.96	(0.23)		—	1.26	(1.26)	1.13	(0.66)	1.21	(0.99)	1.14	(0.68)
Mother's Education: High School		—	0.92	(0.76)	0.91	(0.92)	0.91	(0.94)	0.94	(0.51)		—	0.98	(0.14)	0.99	(0.05)	1.03	(0.21)	1.03	(0.23)
Mother's Education: At Least Some Coll.		—	1.08	(0.49)	1.07	(0.47)	1.20	(1.18)	1.24	(1.32)		—	**0.55**	(**3.20**)	**0.56**	(**3.03**)	**0.63**	(**2.41**)	**0.64**	(**2.24**)
Father's Occupation (1957)		—	1.00	(0.34)	1.00	(0.69)	1.00	(1.34)	1.00	(1.20)		—	1.00	(0.88)	1.00	(0.75)	1.00	(0.46)	1.00	(0.19)
Number of Siblings		—	1.00	(0.09)	0.99	(0.39)	0.98	(1.07)	0.98	(0.83)		—	1.02	(0.91)	1.02	(0.88)	1.01	(0.41)	1.01	(0.31)
Lived with Two Parents		—			**0.47**	(**6.11**)	**0.49**	(**5.73**)	**0.52**	(**4.86**)					**0.42**	(**6.33**)	**0.44**	(**5.85**)	**0.46**	(**5.38**)
Education, Cognitive Ability, and Non-Cognitive Ability																				
Years of Education		—		—		—	0.93	(2.98)	0.99	(0.32)		—		—		—	0.98	(0.55)	1.02	(0.40)
Henmon-Nelson IQ (Junior Year)		—		—		—	1.00	(0.67)	1.00	(0.17)		—		—		—	0.99	(1.17)	0.99	(1.64)
High School Class Rank		—		—		—	0.99	(2.61)	0.99	(2.76)		—		—		—	0.99	(3.35)	1.00	(1.82)
Rated "Outstanding" by Teacher		—		—		—	0.98	(0.11)	0.98	(0.14)		—		—		—	1.06	(0.33)	1.04	(0.18)
College Track in High School		—		—		—	1.04	(0.35)	1.06	(0.52)		—		—		—	1.08	(0.67)	1.15	(1.11)
Adult Socioeconomic Characteristics & Working Conditions																				
Household Income (1993)		—		—		—		—	0.93	(2.97)		—		—		—		—	0.95	(2.50)
Household Net Worth (1993)		—		—		—		—	0.95	(1.86)		—		—		—		—	0.97	(1.59)
Occupational Standing (1993)		—		—		—		—	1.00	(0.84)		—		—		—		—	0.99	(1.26)
Satisfied with Job? (1993)		—		—		—		—	0.34	(10.02)		—		—		—		—	0.40	(7.35)

Ann Am Acad Pol Soc Sci. Author manuscript; available in PMC 2021 April 06.

	Men (n = 3,155)										Women (n = 3,475)									
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 1		Model 2		Model 3		Model 4		Model 5	
	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$	$\exp^b$	$\lvert b/SE \rvert$
Controls Work Schedule? (1993)			—		—				0.89	(1.03)									1.25	(1.62)
Job Requires Frequent Effort? (1993)		—		—		—		—	1.01	(0.04)		—		—		—		—	1.00	(0.00)
Dangerous Conditions on Job? (1993)									0.87	(1.18)									1.01	(0.10)
Adult Health Risk Behaviors																				
Smoked Ever? (1993)		—		—		—		—	0.89	(0.69)		—		—		—		—	1.15	(1.06)
Smokes Now? (1993)		—		—		—		—	**1.46**	**(2.29)**		—		—		—		—	1.32	(1.40)
Light Exercise per Month (1993)		—		—		—		—	1.00	(0.36)		—		—		—		—	1.00	(0.04)
Heavy Exercise per Month (1993)		—		—		—		—	0.96	(1.82)		—		—		—		—	1.00	(0.11)
Alcoholic Drinks per Month (1993)		—		—		—		—	1.00	(0.07)		—		—		—		—	**1.01**	**(2.76)**
Psychological Well-Being																				
Autonomy Score (1993)		—		—		—		—	1.01	(0.91)		—		—		—		—	**1.04**	**(2.92)**
Environmental Mastery Score (1993)									0.99	(0.49)									1.01	(0.48)
Personal Growth Score (1993)		—		—		—		—	1.00	(0.16)		—		—		—		—	0.98	(1.46)
Positive Relation to Others Score (1993)									1.03	(1.58)									0.97	(1.89)
Purpose in Life Score (1993)		—		—		—		—	0.97	(1.69)		—		—		—		—	0.99	(0.56)
Self-Acceptance Score (1993)		—		—		—		—	0.99	(0.47)		—		—		—		—	0.99	(0.53)
Constant	**0.2**	**(27.2)**	**0.2**	**(11.5)**	**0.5**	**(4.5)**	**2.0**	**(1.5)**	**6.2**	**(2.6)**	**0.1**	**(32.3)**	**0.2**	**(12.9)**	**0.3**	**(5.7)**	1.1	(0.2)	5.1	(1.8)

NOTE: For this table, the WLS sample is restricted to individuals who responded to the 1993 telephone and mail surveys and either (1) died after 1993 or (2) responded to the 2004 telephone and mail surveys. I have also excluded the small number of respondents not in the modal birth cohorts. Missing data have been imputed use the ICE routine in Stata; results above represent combined estimates across five multiply imputed data sets. Bolded coefficients are twice their standard errors.

TABLE 3

Ordinary Least Squares (OLS) Regressions of WLS Graduates' CES-D Psychological Distress Scores in 2004, by Sex

	Men (*n* = 2,510)										Women (*n* = 3,018)									
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 1		Model 2		Model 3		Model 4		Model 5	
	b	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**
Family Socioeconomic Background																				
Parents' 1957 Income: Bottom Quartile	0.44	(0.72)	0.37	(0.57)	0.42	(0.65)	0.43	(0.66)	0.31	(0.53)	**1.66**	**(2.66)**	**1.49**	**(2.23)**	**1.53**	**(2.30)**	**1.31**	**(1.99)**	0.55	(0.93)
Father's Education: High School			−0.39	(0.59)	−0.41	(0.62)	−0.35	(0.52)	−0.18	(0.30)			−0.94	(1.35)	−1.07	(1.55)	−0.96	(1.39)	−0.47	(0.76)
Father's Education: At Least Some Coll.			0.34	(0.36)	0.39	(0.42)	0.43	(0.46)	0.72	(0.83)			−0.88	(0.97)	−1.15	(1.27)	**−1.00**	(1.09)	−0.52	(0.63)
Mother's Education: High School			**−1.24**	**(2.12)**	**−1.15**	**(1.97)**	**−1.18**	**(2.01)**	**−1.20**	**(2.26)**			−0.05	(0.07)	0.10	(0.17)	0.33	(0.52)	0.43	(0.77)
Mother's Education: At Least Some Coll.			−1.27	(1.50)	−1.20	(1.42)	−1.02	(1.20)	**−1.00**	(1.29)			−0.92	(1.08)	−0.99	(1.17)	−0.48	(0.55)	−0.68	(0.86)
Father's Occupation (1957)		—	0.02	(1.29)	0.02	(1.22)	0.02	(1.30)	0.02	(1.59)		—	−0.02	(1.36)	−0.02	(1.35)	−0.01	(0.79)	**0.00**	(0.27)
Number of Siblings		—	0.05	(0.49)	0.07	(0.68)	0.06	(0.61)	0.10	(1.09)		—	−0.20	(1.78)	−0.17	(1.53)	−0.20	(1.87)	**−0.11**	(1.11)
Lived with Two Parents		—	−0.27	(0.31)	−0.17	(0.19)	−0.07	(0.08)	−0.46	(0.59)		—	1.80	(1.95)	**1.97**	**(2.14)**	**1.99**	**(2.18)**	0.88	(1.06)
Childhood Health		—		—																
Childhood: Excellent or V. Good Health					**−3.23**	**(4.25)**	**−3.22**	**(4.23)**	**−1.64**	**(2.39)**					**−2.31**	**(3.16)**	**−2.02**	**(2.77)**	−0.71	(1.08)
Childhood: Count of Illnesses		—		—	**0.63**	**(2.34)**	**0.63**	**(2.37)**	0.47	(1.95)		—		—	**0.66**	**(2.50)**	**0.69**	**(2.63)**	**0.71**	**(2.98)**
Childhood: Health Restricted Activities					0.10	(0.13)	0.14	(0.17)	0.55	(0.77)					**2.77**	**(3.25)**	**3.09**	**(3.65)**	**2.45**	**(3.20)**
Education, Cognitive Ability, and Non-Cognitive Ability																				

	Men (*n* = 2,510)										Women (*n* = 3,018)									
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 1		Model 2		Model 3		Model 4		Model 5	
	b	|*b*/*SE*|	*b*	|*b*/*SE*|	*b*	|*b*/*SE*|	*b*	|*b*/*SE*|	*b*	|*b*/*SE*|	*b*	|*b*/*SE*|	*b*	|*b*/*SE*|	*b*	|*b*/*SE*|	*b*	|*b*/*SE*|
Years of Education		—		—		—	−0.06	(0.45)	0.13	(0.99)		—		—		—	0.17	(1.00)	0.15	(0.94)
Henmon-Nelson IQ (Junior Year)		—		—		—	0.00	(0.07)	−0.03	(1.43)		—		—		—	**−0.09**	**(3.60)**	**−0.12**	**(4.53)**
High School Class Rank		—		—		—	−0.02	(1.66)	−0.01	(1.08)		—		—		—	**−0.03**	**(2.07)**	−0.02	(1.51)
Rated “Outstanding” by Teacher							−0.89	(1.02)	−0.90	(1.15)							0.66	(0.78)	0.62	(0.81)
College Track in High School		—		—		—	0.37	(0.61)	0.08	(0.14)		—		—		—	−1.19	(1.95)	−0.37	(0.66)
Adult Socioeconomic Characteristics & Working Conditions																				
Household Income (1993)		—		—		—		—	−0.01	(0.05)		—							0.12	(1.33)
Household Net Worth (1993)		—		—		—		—	−0.10	(0.91)		—							−0.14	(1.61)
Occupational Standing (1993)		—		—		—		—	−0.02	(1.24)		—							0.01	(0.78)
Satisfied with Job? (1993)		—		—		—		—	0.07	(0.15)		—							−0.68	(1.37)
Controls Work Schedule? (1993)									−0.33	(0.65)									0.06	(0.12)
Job Requires		—		—		—		—	−0.20	(0.34)		—							1.12	(2.09)
Frequent Effort? (1993)																				
Dangerous Conditions on Job? (1993)									0.40	(0.78)									0.80	(1.43)
Adult Health Risk Behaviors																				
Smoked Ever? (1993)		—		—		—		—	0.06	(0.10)		—							0.04	(0.06)
Smokes Now? (1993)									1.70	(1.77)									1.78	(2.08)
Light Exercise per Month (1993)		—		—		—		—	−0.07	(1.14)		—		—		—		—	−0.11	(1.68)

Ann Am Acad Pol Soc Sci. Author manuscript; available in PMC 2021 April 06.

	Men (*n* = 2,510)										Women (*n* = 3,018)									
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 1		Model 2		Model 3		Model 4		Model 5	
	b	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**	***b***	**|*b*/*SE*|**
Heavy Exercise per Month (1993)									0.08	(0.88)									−0.03	(0.40)
Alcoholic Drinks per Month (1993)		—		—		—		—	0.01	(0.73)		—		—		—		—	−0.02	(1.12)
Psychological Well-Being																				
Autonomy Score (1993)		—		—		—		—	−0.02	(0.43)		—		—		—		—	−0.09	(1.78)
Environmental Mastery Score (1993)									**−0.22**	**(3.03)**									**−0.43**	**(6.08)**
Personal Growth Score (1993)		—		—		—		—	0.01	(0.19)		—		—		—		—	0.09	(1.51)
Positive Relations to Others Score (1993)									**−0.21**	**(3.57)**									**−0.31**	**(4.96)**
Purpose in Life Score (1993)		—		—		—		—	**−0.24**	**(3.38)**		—		—		—		—	**−0.28**	**(3.82)**
Self-Acceptance Score (1993)		—		—		—		—	**−0.53**	**(7.94)**		—		—		—		—	**−0.27**	**(4.28)**
Constant	**25.0**	**(10.2)**	**25.0**	**(9.4)**	**26.9**	**(9.8)**	**25.4**	**(7.8)**	**59.5**	**(11.0)**	**39.8**	**(13.2)**	**39.2**	**(12.3)**	**38.9**	**(12.0)**	**38.5**	**(9.9)**	**70.7**	**(13.6)**
Inverse Mills Ratio	**−7.3**	**(5.2)**	**−7.2**	**(5.0)**	**−7.2**	**(5.0)**	**−5.5**	**(3.4)**	−1.1	(0.3)	**−13.1**	**(8.6)**	**−12.7**	**(8.1)**	**−12.2**	**(7.9)**	**−7.4**	**(4.2)**	−0.6	(0.2)

NOTE: For this table, the WLS sample is restricted to individuals who responded to the 1993 and 2004 telephone and mail surveys. I have also excluded the small number of respondents not in the modal birth cohorts. Missing data have been imputed use the ICE routine in Stata; results above represent combined estimates across five multiply imputed data sets. All models include an Inverse Mills Ratio computed from probit models predicting mortality prior to 2004 on the basis of birth year, parents' ages at death, and some of the covariates in these models. Bolded coefficients are twice their standard errors.

TABLE 4

Descriptive Statistics for Variables in the 1972–2010 General Social Survey

	%	*n*	Years Observed
Self-Assessed Overall Health			1972 to 2010 (except 1978, 1983, and 1986)
Poor	6%	2,299	
Fair	19%	7,700	
Good	45%	18,403	
Excellent	31%	12,582	
Relative Childhood Family Income			1972 to 2010 (except 1996, 1998, and 2000)
Far below Average	8%	3,532	
Below Average	24%	10,137	
Average	50%	20,990	
Above Average	15%	6,252	
Far above Average	2%	746	
Father's Occupation			1972 to 2010
White Collar	45%	19,911	
Skilled Blue Collar	22%	9,591	
Unskilled Blue Collar, Service, and Farm	33%	14,314	
Educational Attainment			1972 to 2010
Not a High School Graduate	24%	13,061	
High School Graduate	31%	16,900	
Some College Completed	45%	24,785	
Age Group			1972 to 2010
18 to 19	2%	951	
20 to 29	20%	10,849	
30 to 39	22%	11,875	
40 to 49	18%	10,082	
50 to 59	15%	8,123	
60 to 69	12%	6,539	
70 to 79	8%	4,502	
80 to 89	4%	1,969	
Birth Cohort			1972 to 2010
1883 to 1889	0%	60	
1890 to 1899	1%	608	
1900 to 1909	4%	2,051	
1910 to 1919	8%	4,136	
1920 to 1929	11%	5,892	
1930 to 1939	12%	6,401	
1940 to 1949	17%	9,505	
1950 to 1959	21%	11,631	
1960 to 1969	15%	8,265	
1970 to 1979	8%	4,570	

	%	*n*	Years Observed
1980 to 1986	3%	1,707	

NOTE: The sample is restricted to 18- to 89-year-old 1972–2010 GSS respondents.

TABLE 5

Percentage of Respondents in Excellent or Good Health and Sample Size, by Decade of Birth, Age Group, and Childhood Family Income, 1972 to 2010 General Social Surveys

		Decade of Birth										
Age Group	**Relative Family Income at Age 16**	**1880s**	**1890s**	**1900s**	**1910s**	**1920s**	**1930s**	**1940s**	**1950s**	**1960s**	**1970s**	**1980s**
20 to 29	Avg. or Above Avg.							90%	88%	89%	86%	82%
								716	1,708	1,340	496	536
	Below Avg.							83%	80%	84%	81%	78%
								254	508	361	154	194
30 to 39	Avg. or Above Avg.						83%	88%	87%	88%	83%	
							462	1,323	1,465	558	599	
	Below Avg.						79%	77%	82%	81%	80%	
							258	562	573	247	322	
40 to 49	Avg. or Above Avg.					79%	79%	85%	81%	81%		
						454	894	987	541	604		
	Below Avg.					65%	71%	77%	78%	71%		
						234	473	492	248	313		
50 to 59	Avg. or Above Avg.				68%	71%	77%	82%	78%			
					393	846	621	325	551			
	Below Avg.				59%	59%	60%	70%	67%			
					258	593	365	199	322			
60 to 69	Avg. or Above Avg.			56%	61%	68%	75%	74%				
				342	726	582	187	361				
	Below Avg.			43%	50%	57%	62%	63%				
				164	472	476	138	258				
70 to 79	Avg. or Above Avg.		56%	55%	56%	65%	64%					
			161	487	474	124	169					
	Below Avg.		45%	39%	51%	55%	65%					
			96	258	322	83	150					
80 to 89	Avg. or Above Avg.	53%	55%	54%	59%	56%						
		38	173	218	69	100						

Ann Am Acad Pol Soc Sci. Author manuscript; available in PMC 2021 April 06.

Age Group	Relative Family Income at Age 16	Decade of Birth										
		1880s	1890s	1900s	1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s
	Below Avg.	53%	40%	44%	50%	54%						
		17	82	100	46	87						

NOTE: The sample is restricted to 18- to 89-year-old 1972–2010 GSS respondents.

TABLE 6

Logistic Regression Models of Excellent or Good Health on SES, Cohort, and Age Group

	Relative Childhood Family Income	Father's Occupation
Model 1: Logistic Regressions of Self-Reported Overall Health on SES, Year of Birth, and Age		
χ^2 (*df*)	2,322.3 (6)	2,530.7 (4)
Model 2: Model 1 + Year of Birth × Age Interaction Term		
Improvement in χ^2 vs. Model 1 (*df*)	**33.4 (1)**	**24.5 (1)**
Change in BIC vs. Model 1	**−23.3**	**−14.2**
Model 3: Model 2 + SES × Age Interaction Terms		
Improvement in χ^2 vs. Model 2 (*df*)	4.1 (4)	3.2 (2)
Change in BIC vs. Model 2	36.5	17.3
Model 4: Model 2 + SES × Year of Birth Interaction Terms		
Improvement in χ^2 vs. Model 2 (*df*)	5.7 (4)	5.9 (2)
Change in BIC vs. Model 2	34.9	14.6
Model 5: Model 2 + All Two-Way Interaction Terms		
Improvement in χ^2 vs. Model 2 (*df*)	12.2 (8)	6.3 (4)
Change in BIC vs. Model 2	68.9	34.8

NOTE: The sample is restricted to 18- to 89-year-old 1972–2010 GSS respondents. Bold type-face indicates the preferred model.

TABLE 7

Results for Best-Fitting Models in Analyses of 1972–2010 General Social Survey Data

	Relative Childhood Family Income		Father's Occupation	
	b	**(*SE*)**	***b***	**(*SE*)**
Socioeconomic Status, Year of Birth, and Age Main Effects				
Lowest SES Category	−.550	(.112)*	−.636	(.034)*
2nd SES Category	−.144	(.107)	−.444	(.040)*
3rd (or Highest) SES Category	.183	(.106)	Reference Group	
4th SES Category	.451	(.112)*		
Highest SES Category	Reference Group			
Year of Birth (× 100)	.086	(.175)	.095	(.177)
Age (× 100)	−3.625	(.252)*	−3.579	(.253)*
Year of Birth by Age Interaction Term				
Year of Birth × Age (× 1,000)	.023	(.004)*	.019	(.004)*
Intercepts				
Constant	1.762	(.169)*	2.336	(.140)*

NOTE: The sample is restricted to 18- to 89-year-old 1972–2010 GSS respondents.

*$p < .001$.