

TITLE. Building a data resource to test for increasing selectivity of persons at the low end of the educational continuum: Harmonizing measures in the National Longitudinal Study of Adolescent to Adult Health and the Health and Retirement Study

INVESTIGATORS. DW Belsky, B Domingue, K Harris, J Boardman

ABSTRACT. The broad aim of this pilot study is to develop a data resource to test for evidence of changing environmental and genetic influences on selection into the lowest-achieving population segment in terms of education, i.e. those who do not complete a high school degree. Specifically, we will test two versions of the hypothesis that individuals with less than a high school education in more recent birth cohorts come from increasingly disadvantaged backgrounds as compared to educational peers from earlier-born cohorts. This work aims to answer the question outlined in the request for pilot proposals “How is the changing composition of educational attainment influencing the selectivity of persons at the low end of the educational continuum?” The work will make use of sociodemographic, behavioral, ecological, and genetic data from the National Longitudinal Study of Adolescent to Adult Health and the US Health and Retirement Study. Research activities will include the development and analysis of a harmonized data resource to profile environmental and genetic risks for low educational attainment, with the goal of comparing burdens of these risks in birth cohorts born from early to late in the 20th Century. We will test if the least-educated members of more recently-born cohorts show higher concentrations of genetic and environmental risks as compared to educational peers from earlier-born cohorts. The ultimate objective of this pilot research is to build a database and make preliminary observations of it that can serve as the foundation for a larger program of research into pathways connecting educational attainment with healthy aging across the lifespan.

Assessing the importance of changing educational selection for education-mortality trends in the U.S.

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Abstract

There is an urgent need for research to improve understanding of the social dynamics underlying observed increases in mortality among Americans with low educational attainment. Observed trends combine two important dynamics—a) contemporary increases in health inequality and b) the legacy of declines in educational inequality from the mid-20th century. The lagged relationship between educational expansion and mortality gradients makes it impossible to empirically disentangle these two processes using only contemporary data. Using historical education and mortality data from the U.S., we have previously shown that observed recent changes in the educational gradients in mortality among white women in the U.S. could reflect large but stable social inequalities in health, declining social inequalities in education, and increasing longevity for everyone(5). While this analysis raised important issues about changing selection into education, much more evidence is needed to fully understand the implications for education-mortality dynamics in the U.S. Furthermore, while much of the existing literature has focused on trends in those in the lowest education category (less than a high school education), the implications for selection dynamics in the higher education categories are less clear and remain unexplored. We propose to extend our prior analysis across the full spectrum of race/sex and educational subgroups, to bring in information about the social history of educational expansions in the U.S., and to investigate the implications of a range of underlying assumptions where information is incomplete. The project will lay the groundwork for a larger project that brings in richer detail on historical patterns in educational access, and variation in that access by race, geography, and occupation and other socioeconomic characteristics in order to refine the picture on educational and social gradients in mortality.

What is the Relationship between Chronic Pain and Death?

An application to the

Network on Life Course Health Dynamics and Disparities in 21st Century America

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Abstract

This research explores whether the strong, positive association between chronic pain and death is causal, and therefore whether chronic pain contributes to socioeconomic disparities not only in quality but in *quantity* of life (as suggested by Case and Deaton 2015). That is, does chronic pain actually increase mortality (by reducing physical activity, raising risk of depression, leading to deleterious use of opioid analgesics, etc.), or does it simply reflect the fact that many health conditions both cause pain and increase risk of death? If chronic pain does reduce life expectancy, by what specific mechanisms does it do so (and in particular, are opioid analgesics implicated)? These questions are addressed via secondary data analysis of 16 years of biennial Health and Retirement Study data (1998-2016), including the Prescription Drug Study (2005 and 2007) and Health and Well-Being Study (2009).

This research is timely, as it examines the intersection of three recent trends in U.S. health: rising rates of chronic pain, rising rates of opioid use and misuse, and troubling slow-downs or even reversals in mortality gains among some population subgroups. Given the high prevalence of chronic pain in the U.S.—and the striking socioeconomic gradient in its distribution—understanding precisely why chronic pain predicts death will have implications for strategies to improve population health and reduce inequalities therein. This project also may clarify why American morbidity and mortality patterns differ from those of most other high-income countries, as the dominant treatment regime for chronic pain during the period of study relied far more heavily on opioid analgesics in the U.S. than in any other country.

Title: State Variation in Socioeconomic Disparities in Health

Principal Investigator: Melissa L. Martinson, PhD

Abstract:

Socioeconomic inequality has been called the 'defining challenge of our time' and has risen steadily since the 1970s. During this same period, health inequalities in the United States (U.S.) have also been on the rise and the disadvantaged population health of Americans relative to our peers has gained increasing attention. Within the U.S., income inequality varies by state as much as it varies between the U.S. and OECD countries such as France with significantly lower inequality, and the variation in poverty levels across states is similarly dramatic. States within the United States also vary in the quality of resources provided to low-income populations through social policies. The theory of fundamental causes, wherein income influences health through access to resources and the mechanisms shaping health inequalities adapt over time, suggests that health inequalities will be present as long as societal inequality is present. Therefore, states with higher levels of societal inequality and poverty should have greater health disparities, and the level of social protections and redistribution through social welfare policy has the potential to dampen this association. This study uses restricted geographic data and objective exam- and lab-based health measures of morbidity for adults age 25 to 65 from the National Health and Nutrition Examination Survey (NHANES) to address the following questions (1) assess the extent to which income gradients in objective measures of health vary by state and (2) examine the association between state-level socioeconomic inequality and individual-level socioeconomic disparities in objective health. This research project will establish important facts that need to be known about socioeconomic disparities by state to move the field forward in preparation for the next steps in the analysis. The aims associated with this pilot grant will set the foundation for a R01 grant application within the next 2 years, where I can examine a broader range of state-level variables, trends over time, age patterns, and gender differences in stratification.

Title: Educational Pathways and Smoking among US Young Adults: A Cohort Comparison

Investigator: Katrina M. Walsemann, Ph.D.

Abstract:

Educational attainment is a very strong predictor of smoking behavior in the United States, where tobacco use remains the leading behavioral cause of premature mortality. Over the past four decades, tobacco use has become heavily concentrated among less educated persons. At the same time, there has been an increase in the prevalence of non-normative educational pathways – that is, young adults today are taking longer to attain their degree, and many of them never attain a degree after enrolling in college. The proposed study will take advantage of these two historical trends by examining cohort differences in the relationship between educational pathways and daily smoking in early adulthood. The specific aims of this project are to: (1) describe the educational pathways of two cohorts of young adults and the compositional changes in educational pathways between these two cohorts; (2) compare the association between educational pathways and daily smoking in early adulthood by cohort; and (3) examine the extent to which economic resources, occupational status, and marriage explain the relationship between educational pathways and daily smoking by cohort. The proposed study is significant because it will elaborate the ways in which education affects one of the most important behavioral causes of morbidity and mortality – cigarette smoking – across two successive birth cohorts in the US.