



Cumulative Disparities in the Dynamics of Working Poverty for Later Career U.S. Workers (2002–2012)

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Abstract

Many more Americans experience working poverty than unemployed poverty, a situation that was only exacerbated by the Great Recession. The consequences of working poverty for later career workers, who should be at their highest earning ages, are particularly dire. The authors expect that later career workers are especially vulnerable in terms of the risk and duration of working poverty and that those who have accumulated disadvantages over their life courses, in terms of the intersecting dimensions of race/ethnicity, gender, early-life disadvantage, and educational attainment, will suffer disproportionately. The authors use incidence-based Markov-chain multistate models to analyze the U.S. Health and Retirement Study, which is representative of the U.S. population aged 50 years and older. The results reveal that Black women and men, Latinx, those who experienced more early-life disadvantages, and people with lower education have higher risk and longer durations in working poverty over the period from 2002 to 2012. The findings also suggest that when confronted with economic hardship (the Great Recession) later career workers who originate in lower socioeconomic statuses, especially Blacks and Latinx, are in more precarious economic positions. Important from a policy perspective, educational attainment only partially mediates the association between race/ethnicity and working poverty; disparities persist.

Keywords

poverty, work, aging, life course, cumulative disadvantage, Great Recession

Even using a conservative measure of poverty, the U.S. Census Bureau estimated that 39.7 million people (about 12.3 percent of the U.S. population) were poor in 2017 (Fontenot, Semega, and Kollar 2018). The majority of these families have at least one adult employed (i.e., “the working poor”; Danziger, Chavez, and Cumberworth 2012). One driver of working poverty is that in the United States, as well as in other higher income countries, there have been dramatic shifts in the shape of the labor market in recent decades, including in types of jobs and the demographic profile of the working population. Much of U.S. employment growth has been in service occupations, which are characterized by low wages, variability in hours, few to no benefits, low unionization rates, and job precarity (Autor and Dorn 2013; Farber 2008; Finnigan and Hale 2018; Halpin 2015; Kalleberg, Reskin, and Hudson 2000). The composition of the working population has also changed, with increased shares of women, ethnic minorities, and older workers (Toossi 2002). The Great Recession also had a dramatic, and possibly permanent, effect on the labor market.

Much research focuses on the Great Recession’s negative effect on prime-age workers (Desmond and Gershenson 2016; Keys and Danziger 2008; Li, Wallace, and Hyde 2019). However, older workers constitute an especially vulnerable group in the U.S. labor market, partly because of skills mismatch, age discrimination, worse health status inhibiting work opportunities, and the recession’s especially long-lasting impact for them (Autor and Dorn 2013; Engemann and Wall 2009; Rehkopf, Adler, and Rowe 2017). Research specific to older workers, though, is sparse. We do know that, in terms of access to employment, older individuals from disadvantaged backgrounds were hit especially hard by the

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recession (Dudel and Myrskylä 2017). Working poverty rates are also substantially and consistently (and predictably) higher for Blacks, Hispanics, women, and those with lower educational attainment (U.S. Bureau of Labor Statistics 2020). There are likely long-term ramifications of the intersection of life-course inequalities and the recession for this vulnerable population of later career workers, as we would expect them to be at the peak of their earning potential. Losing those years of higher earnings will affect them not only in the moment but for their future Social Security earnings and retirement savings. Furthermore, this population is growing because of the unprecedentedly large baby boomer cohort anticipating unprecedentedly long life expectancies, which means that the societal impact is also likely to be substantial.

We engage with the question of understanding later career workers' experiences of working poverty from the vantage point of cumulative inequality, intersectionality, and life-course theory (Browne and Misra 2003; Cho, Crenshaw, and McCall 2013; Collins 2015; Schafer, Ferraro, and Mustillo 2011; Schafer, Wilkinson, and Ferraro 2013). Read together, we can derive from these theories that those who experience multiple disadvantages over their life courses (racial/ethnic and early-life socioeconomic disadvantage and lower educational attainment) will bear a greater burden (risk and duration) of working poverty than their more privileged peers. We also hypothesize that a lack of familial wealth and low human and social capital places people with disadvantaged origins, especially Blacks and Latinx (Bloome 2014; Conley 1999; Neckerman and Torche 2007; Western et al. 2012), in more precarious positions when disaster strikes, such as during a macroeconomic shock—in this study, the Great Recession.

The goal of this study is to develop a more nuanced assessment of the burden of working poverty for those who have disadvantaged origins. As such, our aim is primarily descriptive, and we do not try to model all potential mechanisms that drive these disparities, nor are we able to test policy interventions. There already exists a large body of work assessing mechanisms, for example, on racial discrimination in hiring (Pager and Shepherd 2008). However, this is the first study, to our knowledge, that goes beyond mere risk in the form of working poverty rates and prevalence. We estimate disparities in lifetime risk and expectancies by race/ethnicity, gender, and exposure to early-life disadvantages, as well as their intersections. To assess how the Great Recession put disadvantaged workers at further disadvantage, we compare experiences of working poverty in the years leading up to the financial crisis (2002–2007) and during the recession (2008–2012). Moreover, we provide counterfactual estimates indicating to what extent race/ethnicity's association with later career working poverty operates through educational attainment and labor force experience.

We use data from the Health and Retirement Study (HRS), a longitudinal survey representative of the U.S. population aged 50 and older. We apply discrete-time survival analysis

and multistate models to calculate two key indicators of the dynamics of working poverty: the lifetime risk at age 50 of ever experiencing working poverty and the expected remaining lifetime at age 50 spent in working poverty. These indicators allow us to summarize dynamic labor market trajectories, which might consist of several separate episodes of working poverty for some individuals and none for others, while showing how disadvantage accumulates (Hayward and Lichter 1998; Lorenti, Dudel, and Myrskylä 2019). Overall, our findings show distinct disparities in the burden of working poverty, with early-life disadvantaged Blacks and Latinx facing the highest risk and longest expectancies. When confronted with economic hardship, disadvantages intersect, as predicted, to place those multiply disadvantaged in even more precarious economic positions. An important finding is that education only partially mediates the relationship between race/ethnicity and working poverty, pointing to how race/ethnicity and, more generally, the accumulation of disadvantages are so meaningful in shaping experiences of later life working poverty that educational attainment can only partially mitigate early-life disadvantage (as both race/ethnicity and socioeconomic).

This article contributes to the literature in several ways. First, we study how accumulated life-course disadvantages are associated with the dynamics of working poverty for a particularly vulnerable population, later career U.S. workers, in the context of the Great Recession. Second, our findings highlight the importance of not solely focusing on access to employment but also considering economic returns to employment when assessing disparities. Third, our analysis shows the usefulness of our two key indicators, the lifetime risk of and life expectancy spent in working poverty, in developing a more nuanced understanding of the burden of disadvantage. Fourth, our counterfactual analysis shows how intervening on education would affect disparities between groups, and to some extent, it allows us to disentangle pathways through which inequalities accumulate.

Background

This project is the descendant of three large bodies of literature: poverty, social (im)mobility, and life-course studies. As to the first, in the United States, during the period of analysis, there were four times more people in working poverty than in poor households in which no one is working (Brady, Fullerton, and Cross 2010). Second, decades of social mobility research tells us that individuals are likely to mirror their parents' educational, occupational, and socioeconomic attainment, resulting in the intergenerational transmission of poverty (Becker and Tomes 1994; Blau and Duncan 1967; DiPrete 2002; Hout and DiPrete 2006; Sewell, Haller, and Ohlendorf 1970). Third, key characteristics, both ascribed (race/ethnicity, gender, familial socioeconomic status [SES]) and achieved (educational attainment) interact over the life course to affect life outcomes (Collins 2015; Crenshaw 1994;

Killewald and Bryan 2018; Montez and Hayward 2014; Schafer et al. 2011). Life-course theory is also relevant in that life-course stage influences risk of working poverty (e.g., transitions into or out of partnership; Van Winkle and Struffolino 2018), as well as vulnerability to macroeconomic shock (Elder 1998). For example, in the wake of the Great Recession, older displaced workers experienced the largest earnings declines, with a lower probability than younger workers of being rehired in the years since (Farber 2011). The empirical research based on these three literatures ranges from individual-level analyses of predictors of poverty spells to cross-national studies of how the Great Recession affected the labor force. With this forming our broader foundation, we turn our focus to the literature at their juncture: measuring working poverty for later career workers from different social backgrounds before and during the Great Recession.

Poverty

Since the 1970s, a large body of work on the dynamics of poverty has accumulated. One of the key turning points in understanding poverty was the finding that most poverty spells are relatively short and that most people who experience poverty spells are not chronically poor, despite the collective imaginary of deep and chronic poverty (Bane and Ellwood 1986; Magnuson and Votruba-Drzal 2009; Stevens 1994, 2012). This evidence that affirmed the wide scope of the poverty problem spurred a glut of work attempting to identify individual, cultural, or structural predictors of poverty (Brady, Finnigan, and Hübgen 2017; Desmond and Western 2018; Jargowsky 1997; Wilson 1987). Much of this work has focused on understanding risk factors for spells of poverty (e.g., birth, divorce, job loss; McKernan and Ratcliffe 2005); predictors of the persistence of poverty—what makes some individuals repeatedly or chronically poor? (Hoynes, Page, and Stevens 2006; Lichter and Crowley 2002); and the intergenerational transmission of poverty, closely linked with research on social mobility, cumulative disadvantage, and life-course studies more generally (Blau and Duncan 1967; Dewilde 2003; DiPrete and Eirich 2006; Mayer 2009; Schafer et al. 2011; Sewell et al. 1970).

As for the working poor specifically, in the United States, the working poor represent an increasing share of the population—a 25 percent growth from 2000 to 2010—and thus are almost a hallmark of the Great Recession era (Brady et al. 2010; Thiede, Lichter, and Slack 2018). The annual Bureau of Labor Statistics profiles show the spike in working poverty rate subsequent to the recession (U.S. Bureau of Labor Statistics 2020), moving from about 5 percent in 2006 and 2007 to more than 7 percent by 2009 for the whole population. Using 2009 as an example of a recession year, of those working 27 weeks or more a year, 3.6 percent of those 55 to 64 years old and 2.3 percent of those 65 and older (with no upper age limit established) were working poor (U.S. Bureau of Labor Statistics 2011). They also indicate the

significant racial/ethnic, gender, and educational disparities, with Blacks and Hispanics having about twice the prevalence and those with less than high school about a 10 times higher working poverty rate than those with college degrees. In 2009, the difference between men and women was dependent on race/ethnicity: Black women have a higher rate than their male counterparts, whereas White and Hispanic women and men were not substantially different (U.S. Bureau of Labor Statistics 2011). Research thus far has established a sociodemographic profile of the middle-aged (51–61 years old) working poor in the late 1990s and early 2000s; however, since then, there have been significant shifts in the labor market (Lee et al. 2005). This profile also does not address early-life factors that we know from social mobility research are associated with risk, such as parents' education or SES, instead focusing on contemporary predictors (e.g., marital status), similar to other recent work (Van Winkle and Struffolino 2018).

There is also a large body of literature measuring the impact of the earned income tax credit, which originally began in 1975 and was intended to benefit low-income, working families. Its expansion over the past 40 years and state-level variation in implementation have permitted analyses determining the efficacy of the program in alleviating some of the burden of working poverty (e.g., Pilkauskas and Michelmore 2019). Nevertheless, better understanding the life-course origins of working poverty remains an important task, as the earned income tax credit is a bandage on a gaping wound: it cannot possibly solve the pervasive problem of below-poverty wages.

The literature also focuses on risk of poverty versus life expectancies in working poverty (Thiede and Kim 2015; Thiede, Lichter, and Sanders 2015; Thiede et al. 2018). To this last, although identifying risk (via incidence or prevalence) is an important first step in understanding working poverty, poverty's cyclical nature means that estimating expectancies in working poverty can contribute insight into the burden of working poverty. For example, Thiede and Kim (2015) estimated that there was a probability of .045 of experiencing poverty for those aged 18 to 64 years from 2005 to 2007, up to .06 in 2011 to 2013. However, risk does not provide insight as to how much of that period individuals spend in poverty (i.e., are those poor households in 2011–2013 the same [with some additions], implying a long-term burden, or are they different households?). And they assessed disparities in risk, but how do race/ethnicity, gender, early-life SES, and education intersect to generate and perpetuate disparities in the longer term burden of working poverty? Indeed, expectancies often reveal a more nuanced assessment of the effects of cumulative disadvantage (Hayward and Lichter 1998), thus expectancies are important for measuring inequalities (Dudel and Myrskylä 2017).

Another contribution of this study is that the literature on labor market expectancies has not, thus far, distinguished between labor force participation and economic returns to

employment. Although differential access to employment is clearly an important consequence and cause of social stratification, spending long durations in low-paid labor also perpetuates inequalities.

Later Career Workers and the Great Recession

Although it is common for research on labor force dynamics to focus on the prime working-age population, we argue that workers who are in the latter stages of their careers and who should be at peak earnings are a particularly vulnerable group. This is partially related to the shifting terrain of postindustrial employment, including the insecure “gig economy.” Even before the recession, the skills mismatch of later career workers in this new economy contributed to unprecedented job churning in the private sector for older men (Autor and Dorn 2013; Farber 2008, 2010). In the immediate aftermath of the recession, Engemann and Wall (2009) found increases in employment for workers aged 55 and older but hypothesized that the reasons were negative (i.e., reluctance to leave the labor market because of retirement savings losses or related concerns). However, other research suggests that previously full-time workers who lost jobs in the Great Recession suffered significant declines in earnings and encountered lower reemployment rates, many turning to part-time employment (Farber 2011). In sum, later career workers appear to be especially vulnerable participants in the current labor market and in the wake of the Great Recession (with potential implications for the coronavirus disease recession, beginning in 2020), but results remain inconclusive as to working poverty.

Furthermore, we can expect that the vulnerability of the population aged 50 and older is heterogeneous. Other factors that affected the impact of the Great Recession on older U.S. residents’ employment trajectories include race/ethnicity, gender, early-life SES, and educational attainment. For example, during the recessionary years of 2008 to 2011, Latinos experienced the largest decline in years of working life expectancy (WLE), and Black men declined precipitously in relative WLE, from spending 57.3 percent of their age 50-plus lives working to only 47.7 percent (Dudel and Myrskylä 2017). In general, men’s relative WLE decreased more than women’s in the recessionary years (Dudel and Myrskylä 2017). Childhood circumstances likewise affect length of working life for those aged 50 and older, with women and men who had more disadvantaged childhoods working for substantially less of their remaining lives and spending more time in disability compared with those from more advantaged families (Lorenti et al. 2020).

Predictably, educational attainment is important, interacting with race/ethnicity, gender, and early-life SES to affect WLE and decline in WLE after the economic crash (Dudel and Myrskylä 2017; Lorenti et al. 2020). Educational attainment also moderates the association between the Great Recession and income. Those with only high school diplomas

faced a much larger decline in earnings subsequent to the 2008 market crash than those with college degrees (Struffolino and Van Winkle 2019). In sum, findings suggest that how the recession affected U.S. workers is dependent upon age, race/ethnicity, gender, early-life SES, and educational attainment. This leads us to hypothesize that the Great Recession likely also increased risk of and expectancies in working poverty most for vulnerable subpopulations.

Hypotheses

On the basis of these theoretical considerations and empirical findings, we make three predictions. First, later career workers who experience life-course disadvantages, including by race/ethnicity, gender, childhood disadvantage, and educational attainment, will have higher risk of and longer expectancies in working poverty. Second, the Great Recession will be more detrimental for later career workers who experience life-course disadvantages, including racial/ethnic (Black or Latinx vs. White), gender (women vs. men), childhood disadvantage (more vs. less), and educational attainment (less vs. more). And third, as educational attainment is one link between race/ethnicity and later life working poverty (though not the only factor in the United States’ racially stratified society), we predict that intervening on education will only partially disrupt the association between race/ethnicity and risk of and expectancies in working poverty.

Data and Methods

Data and Measurement

We use the HRS, a nationally representative, population-based, biennial panel survey of Americans aged 50 and older and their spouses of any age. The University of Michigan conducts the HRS, which is funded by the National Institute on Aging (grant NIA U01AG009740) and the U.S. Social Security Administration (University of Michigan 2017). The data can be obtained at no cost after registration online (<http://hrsonline.isr.umich.edu>). We use the harmonized data files from RAND Version P (RAND Center for the Study of Aging 2017).

We include individuals aged 50 to 69 years during 2002 to 2012 in our analysis. We focus on this age range for several reasons. At the lower bound, we focus on workers aged 50 and older because they should be at their prime earning ages; earnings at these ages will significantly affect health, pensions, Social Security, and other retirement savings. At the upper bound, we set the maximum age at 69 years because using a younger age (e.g., the statutory retirement age) may miss nonstandard trajectories into retirement, such as phased retirement, labor market reentries (most labor market reentries happen shortly after first retirement; Hayward, Hardy, and Liu 1994), and postponed retirement (Cahill, Giandrea,

and Quinn 2015; Pleau and Shauman 2013). We must be attentive to these nonstandard patterns because they are more prevalent for women, Blacks, and Latinx, and therefore important for our analyses (Calvo, Madero-Cabib, and Staudinger 2017). Finally, though retirement after statutory retirement age is non-negligible (Calvo et al. 2017), beyond age 69, labor force participation is rather low (Dudel and Myrskylä 2020; Warner, Hayward, and Hardy 2010).

We focus on 2002 to 2012 for three main reasons. First, having a balance of years before the onset of the Great Recession (2002–2007) and during and since (2008–2012) means that our estimates of WLE across the two eras are more equivalent, each drawing on five to six years of data. Second, wave 6 of the HRS (conducted primarily in 2002) marks the first wave at which RAND constructed a household-adjusted measure for whether respondents were below the official poverty threshold (details to follow). And third, over time the impact of the recession attenuated, so including years after 2012 may dilute the distinction between the pre-recession and recessionary period. After restricting the sample to ages 50 to 69 and to years 2002 to 2012, there are 19,969 individuals with at least one transition during the period we study. Using listwise deletion for missingness, our final sample is 18,374 individuals, among whom we analyze 59,561 transitions.

Working. We define individuals as working if they self-report working full-time or part-time (but not being unemployed) and if they report working at least 27 weeks of the previous year, which is a standard measure for establishing working poverty (U.S. Bureau of Labor Statistics 2020). In light of Thiede et al.’s (2015) findings, in alternative analyses, first, we instead restrict to those who report averaging at least 17 hours/week, and second, we do not restrict the definition of working by reports of hours or weeks worked at all. Results are consistent.

Poverty. To determine poverty, we use the poverty threshold variable constructed by RAND, based on the Bureau of Labor Statistics definition of the poverty threshold using the official poverty measure, including adjusting for household composition (RAND Center for the Study of Aging 2017). We count as “poor” those whose household income is below 200 percent of the official federal poverty level (FPL). We also examine those 150 percent above the FPL, and results are qualitatively consistent (see Figure 1). We do not use the FPL itself, because it is widely considered an inaccurate measure of hardship. The FPL relies on an approach conceived in the 1960s, discussed at length elsewhere (Brady 2003; Cellini, McKernan, and Ratcliffe 2008; Meyer and Sullivan 2012; Thiede et al. 2015). As an example of the degree to which the FPL is an underestimate of poverty, in 2014, the FPL for a family of four (\$24,008) was approximately one third the median income level (Bernstein et al. 2018).

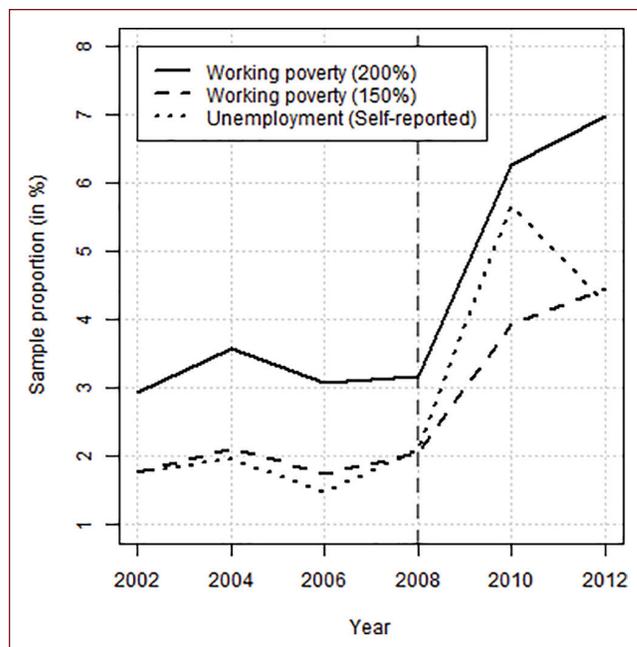


Figure 1. Proportion of individuals in working poverty, defined as 200 percent of poverty threshold (solid line); in working poverty using 150 percent of the poverty threshold (dashed line); and reporting unemployment (dotted line). Gray dashed line denotes onset of the effects of the recession, 2002 to 2012.

Working Poverty. As this study is focused on the “working poor,” we take an additional step to exclude those who have accumulated significant economic resources. Over this age range of 50 to 69 years, partially retiring individuals may choose to work (e.g., for health insurance, supplementary income, or to stay engaged outside the home). This type of worker should not be classified as “working poor” despite low wages. We therefore exclude from the working poor those respondents whose average wealth over their entire study participation places them in the upper two quintiles of the wealth distribution.¹ We derive these quintiles from RAND’s household wealth variable, which includes before-tax income from earnings, unemployment, Social Security, Social Security insurance, pensions, but not noncash benefits or capital gains, and takes also debt into consideration. To best estimate SES versus income, per se (accounting for partial retirement and short-term fluctuations), we average this wealth measure over the entire study period and then divide it into quintiles. Thus, our final definition of working poor is working at least 27 weeks/year and 200 percent of the FPL or lower, but not in the top two wealth quintiles.

¹This approach may misidentify some working poor as nonpoor and smooth over some of the Great Recession’s negative effect on wealth. However, there is little movement from the top two quintiles into lower quintiles when examining transitions across waves.

Predictors. Age is measured in completed years. We create categorical variables for gender (women or men) and self-reported race/ethnicity (non-Hispanic White, Black, and non-Black Latinx, henceforth White, Black, and Latinx²). To paint a picture of early-life circumstances (many indicators are cooccurring) and for analytical reasons (Montez and Hayward 2014), we create a categorical variable for early-life disadvantages; we consider an individual more disadvantaged if the person self-reports three or more of the following: low childhood SES, poor childhood health, parents' education less than eighth grade, father did not contribute economically (unemployed, absent, dead), father's lower status occupation, childhood family moved because of financial hardship, and/or childhood family borrowed money because of financial hardship. We distinguish four levels of educational attainment: less than high school/GED, high school diploma, some college, and college and higher.³ We define the prerecession period as 2002 to 2007 and 2008 to 2012 as recessionary.

Analytic Strategy: Multistate Modeling

To calculate the incidence of working poverty during ages 50 to 69 and remaining working life spent in working poverty, we use a multistate approach (Dudel and Myrskylä 2017; Hoem 1977; Skoog and Ciecka 2010). The multistate approach allows us to model transitions between labor force states and is based on the probabilities of transitioning from one state to another (e.g., the probability of moving from full-time, nonpoor employment to working poverty). Many useful quantities can be calculated from these transition probabilities, including their population-level implications (e.g., the probability of ever experiencing working poverty and average number of years individuals will spend in working poverty). These quantities are calculated using the assumption that the transition probabilities of a given period, such as the years before the recession (2002–2007), are constant throughout the lives of members of a synthetic life table cohort, similar to the calculation of life expectancy in demography. Although results based on this period perspective do not necessarily translate directly to the experience of real birth cohorts (Dudel and Myrskylä 2020), they make inequalities and disparities between groups measurable in a straightforward way, as well as allowing us to show the accumulation of (dis)advantage as implied by the conditions of a given

²Some evidence suggests that life outcomes for Black Hispanic more closely resemble Black than Latinx (Chinn and Hummer 2016). Because of issues with sample size, all self-identified Hispanic/Latinx are categorized as one group despite clearly being a heterogeneous population. Unfortunately, further distinction between native-born and foreign-born and, for the latter, by country of origin is not possible.

³For the earlier cohorts under study, relatively few respondents have higher education, especially by racial/ethnic subgroups, so further distinction is not feasible.

period (Hayward and Lichter 1998). We use a multistate model with four states: nonpoor employment (full-time or part-time); working poverty; unemployment; and one category capturing retirement, disability, or otherwise not being in the labor force. In addition to transitions between labor force states, the model also captures mortality. To estimate the transition probabilities between states, we use multinomial logistic regression (Allison 1982). Transition probabilities depend on previously described predictors. We estimate models separately for men and women, thus implicitly interacting all predictors with gender. This allows us, for instance, to compare remaining expectancies in working poverty for Latinas versus White women before and during the recession. We do so with two sets of models: one set in which only one explanatory variable is included, for instance race/ethnicity, and one set of models that includes all variables. The former are used to predict outcomes by single variables, while the latter are used to model the intersections between all variables. In all models, age is included as a smoothing spline (Yee 2010), while other variables are included as sets of dummy variables.

The transition probabilities we obtain in this way are then plugged into Markov-chain equations to obtain lifetime risks and expectancies (Kemeny and Snell 1976). Using the transition probabilities requires the so-called Markov assumption, which essentially states that transition probabilities depend only on an individual's current state and the other covariates, and not on the history of states. This means that, for instance, no difference is made between someone who has been in working poverty for just one year and someone who has been in working poverty for five years, as long as they have the same covariate values. As implied by the Markov assumption, we thus ignore the duration dependency in each state and past transitions; in other words, our focus is on age-specific transition probabilities, disregarding the past. Nevertheless, the transition probabilities are an accurate description of the current movement in and out working poverty (Schoen 1988), and while the Markov assumption is rather strong, it helps with keeping the estimation problem tractable.

The multistate approach requires us to specify a starting distribution of each of the labor force states at age 50. We estimate this from the data on the basis of individuals aged 45 to 54 to achieve a larger sample size and separately for each group for whom we present results (e.g., we estimate this distribution for Latinas with low early-life SES). To calculate standard errors and confidence intervals, we use a bootstrap approach (Cameron and Trivedi 2005). The results presented here are based on analyses not including the sampling weights; however, results with weights are similar. All code is available online.

Counterfactual Analysis: The Role of Education

When studying the association between early-life factors and outcomes later in life, intermediate confounding becomes

Table 1. Sample Size and Number of Observations (2002–2012).

	Individuals	%	Transitions	%	% Transitions from/to WP
Total	18,716	100.0	59,511	100.0	6.9
Men	8,258	44.1	25,444	42.8	6.4
Women	10,458	55.9	34,067	57.2	7.2
White	12,245	65.4	41,140	69.1	3.1
Black	3,958	21.1	11,170	18.8	12.9
Latinx	2,513	13.4	7,201	12.1	19.4
Less than high school/GED	4,657	24.9	13,837	23.3	12.6
High school	8,886	47.5	28,632	48.1	6.4
Some college	1,132	6.0	3,487	5.9	5.8
College and higher	4,041	21.6	13,555	22.8	2.3
Low early-life SES	9,825	52.5	30,522	51.3	8.8
High early-life SES	8,891	47.5	28,989	48.7	4.8

Note: SES = socioeconomic status.

particularly problematic. Race/ethnicity is associated with early-life disadvantage, which affects educational attainment, and all three directly and indirectly affect labor force participation. To determine to what extent an intervention on educational attainment could disrupt the link between race/ethnicity and later life working poverty, we use a counterfactual framework. This method is particularly useful because we can simultaneously reduce bias from intermediate confounding and test an intervention scenario (Nandi et al. 2012; VanderWeele 2015; VanderWeele and Robinson 2015). It requires that the variables we control for are sufficient and that there is no unobserved confounding. Despite the strict requirements, this approach is also useful for evaluating how the variables in the model are structurally linked and understanding how each variable contributes to the outcome.

In brief, we block the pathways from race/ethnicity to work outcomes that go through educational attainment (Gran et al. 2015). We calculate expectancies in working poverty as if the distribution of educational attainment does not differ by race/ethnicity while keeping childhood disadvantage constant (i.e., as if the proportion of individuals with less than a high school degree is the same for individuals with more or less childhood disadvantage irrespective of race/ethnicity). The distribution of educational attainment is taken from the White population. Outcomes by educational attainment still differ by race/ethnicity and among the childhood disadvantage groups. For example, Black individuals with more childhood disadvantage and less than a high school degree might have a lower WLE than White individuals with more childhood disadvantage and less than a high school degree. Thus, even in the counterfactual scenario, expectancies in working poverty can differ, but these differences are due only to childhood disadvantage and different payoffs of education by childhood disadvantage, not to the different likelihood of attaining higher education.

The procedure involves several steps. First, we calculated lifetime spent in working poverty by all combinations of

race/ethnicity, childhood disadvantage, and education, using the estimated transition probabilities for each combination. Second, we combined and aggregated these expectancy estimates on the basis of the multistate model to estimates only by race/ethnicity, by weighting the educational categories according to the distribution of Whites' educational attainment. For instance, we took the estimated expectancies of working poverty for Black men by education and then combined them by multiplying the expectancy of Black men with less than a high school degree with the proportion of White men with less than a high school degree, by multiplying the expectancy of Black men with a high school diploma with the proportion of White men with a high school diploma, and so on. This was done for both childhood disadvantage groups, which then were also combined in the weighting step. Performing these steps provides estimates of the lifetime spent in working poverty where differences between racial/ethnic groups are due solely to differences in childhood disadvantage and in the payoff of education. Compared with the actual findings, the counterfactual scenario shows to what extent intervening on education would reduce disparities between groups if potential disadvantage through childhood circumstances and differential returns to education remain.

Results

Descriptive Results

Table 1 shows the sample size in total and for different groups, as well as the number and percentage of transitions among labor force states and the percentage of transitions specifically from and to working poverty. The number of transitions is important, as for discrete event history analysis the measurement is of individual transitions between waves of the HRS. Overall, our analyses are based on working trajectories of close to 19,000 individuals and approximately 60,000 transitions. There are more women than men in the

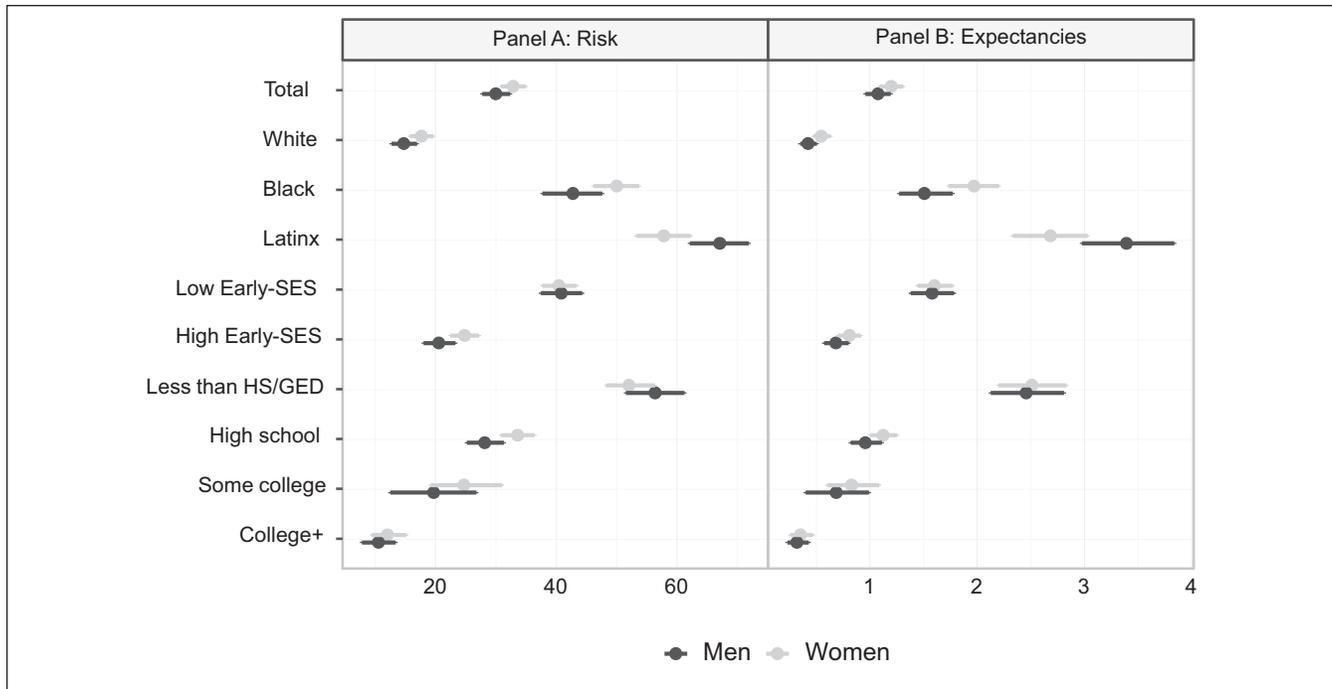


Figure 2. Risk of (A) and expectancies in (B) working poverty by group (gender, race/ethnicity, education, early-life disadvantage), 2002 to 2012. For instance, Black women have an almost 50 percent risk of experiencing working poverty during ages 50 to 69, and on average they can expect to spend almost 2 years in this state.

sample, which is expected in a sample of older individuals. The sample sizes for Blacks and Latinx are much smaller than for Whites, and the majority of the sample has less than a college or university degree. The sample is relatively balanced with respect to childhood disadvantage.

Also shown in Table 1 is the proportion of transitions of each group that starts or ends in working poverty. This already shows considerable differences among groups. For instance, Latinx are 6 times more likely than Whites to experience a transition from or to working poverty, while Blacks are 5 times more likely. Those with lower educational attainment and more childhood disadvantage have more transitions into working poverty than their higher educated, more advantaged counterparts.

Figure 1 shows unadjusted trends over time in working poverty using 200 percent of the FPL as the poverty threshold (our main outcome; solid line); trends in working poverty using 150 percent of the FPL as the threshold (dashed line); and trends in self-reported unemployment (dotted line). All three measures show a clear rise in prevalence at the time of the recession for those aged 50 to 69. Moreover, although before 2010 all three measures show a similar trend, the following period exhibits the opposite pattern between working poverty and unemployment, suggesting that individuals escaping unemployment may have transitioned to working poverty. These findings also indicate that differences between results when using different definitions of working poverty are mostly in levels and neither in trends nor in differences between groups.

Lifetime Risk of and Expectancies in Working Poverty

WLE is clearly embedded in partial life expectancy (PLE)—the total lifetime individuals live during the age interval from 50 to 69—in that WLE is a share of PLE. The multistate approach provides us with estimates of PLE (Appendix, Table A1). The disparities in PLE we find are in line with the literature; for example, women live longer than men; Latinx live longer than Whites, who live longer than Blacks; the higher educated live longer than the lower educated; and for most groups (except Latinx⁴), more early-life disadvantage is associated with lower PLE (Lariscy, Hummer, and Hayward 2015; Lariscy et al. 2016; Meara, Richards, and Cutler 2008).

To test hypothesis 1, that later career individuals who have life-course disadvantages will experience higher risk of and longer expectancies in working poverty than their more advantaged counterparts, we estimate risk of and expectancies in working poverty by race/ethnicity, gender, early-life disadvantage, and education. We report results separately for each variable in Figure 2A (risks) and Figure 2B (expectancies), and we provide estimates combining all variables in

⁴That Latinx with more early-life disadvantage have longer PLE is likely related to the migrant health advantage. Migrants are likely to have parents with lower educational and occupational attainment and have experienced more financial hardship; however, Latinx migrants to the United States experience longer life expectancy: the “Hispanic health paradox” (Riosmena et al. 2017).

Table 2. Time Spent in Working Poverty and Effect of the Recession by Gender, Ethnicity, Educational Attainment, and Early-Life Disadvantage (SES for Brevity).

Race/ Ethnicity	Education	Early- Life SES	Expectancy in Working Poverty (in Years), 2002–2012				Effect of the Recession (Difference in Years between 2002–2007 and 2008–2012)							
			Men	95% Confidence Interval		Women	95% Confidence Interval		Men	95% Confidence Interval				
White	Total	—	.43	.36	.51	.55	.47	.63	.17	.05	.30	.21	.07	.35
	Less than HS/GED	High	1.00	.66	1.47	.97	.66	1.35	.16	-.26	.61	.25	-.12	.62
		Low	.88	.63	1.20	1.28	.92	1.70	.01	-.39	.39	.28	-.14	.72
	HS	High	.46	.34	.61	.46	.36	.57	.18	.04	.36	.15	.02	.32
		Low	.53	.40	.72	.67	.52	.82	.15	-.06	.38	.21	.02	.42
	Some college	High	.56	.22	1.04	.53	.26	.87	.44	.02	1.00	.31	-.01	.81
		Low	.48	.21	.87	.60	.29	1.03	.34	-.07	.93	.36	-.02	.96
	College and higher	High	.14	.07	.23	.19	.11	.29	.11	.03	.26	.13	.04	.27
Low		.19	.10	.31	.30	.17	.46	.14	.02	.37	.23	.05	.48	
Black	Total	—	1.51	1.27	1.76	1.98	1.75	2.20	.15	-.04	.36	.28	.11	.47
	Less than HS/GED	High	2.48	1.57	3.57	3.04	2.24	3.93	.64	-.29	1.66	.48	-.54	1.31
		Low	1.93	1.43	2.53	2.90	2.29	3.60	.32	-.29	.99	.35	-.39	1.06
	HS	High	1.44	1.02	1.98	2.16	1.72	2.64	.71	.21	1.28	.41	-.17	.93
		Low	1.33	1.00	1.70	2.17	1.83	2.54	.52	.09	1.00	.37	-.15	.85
	Some college	High	1.43	.67	2.53	1.75	.99	2.61	1.04	.19	2.14	.71	-.29	1.71
		Low	1.00	.36	2.01	1.39	.75	2.21	.69	.04	1.57	.54	-.26	1.41
	College and higher	High	.97	.49	1.59	.57	.30	.97	.93	.38	1.60	.33	.05	.72
Low		1.02	.49	1.73	.62	.32	1.03	.92	.29	1.73	.36	.06	.79	
Latinx	Total	—	3.40	2.97	3.85	2.69	2.34	.27	.04	.51	.39	.16	.62	.27
	Less than HS/GED	High	3.42	2.40	4.50	3.12	2.10	4.22	.94	-.23	2.22	1.12	.12	2.06
		Low	4.29	3.63	5.05	3.15	2.51	3.83	.56	-.41	1.60	.99	.24	1.72
	HS	High	1.88	1.21	2.71	1.92	1.24	2.58	1.01	.27	1.84	.64	-.01	1.30
		Low	3.04	2.30	3.88	2.15	1.64	2.71	1.17	.19	2.16	.70	.07	1.34
	Some college	High	.68	.06	1.82	1.14	.26	2.38	.54	.01	1.55	.66	-.09	2.00
		Low	.91	.09	2.52	.96	.23	1.97	.69	.00	2.06	.54	-.13	1.42
	College and higher	High	.79	.30	1.51	1.08	.42	1.95	.71	.18	1.52	.77	.16	1.62
Low		1.55	.69	2.67	1.39	.52	2.70	1.23	.32	2.41	1.02	.23	2.26	

Note: HS = high school; SES = socioeconomic status.

Table 2 (expectancies only). Expectancies in states other than working poverty (working full-time or part-time, unemployment, not in the labor force, PLE) are provided in the Appendix. The results in Figure 2 and the left part of Table 2 are based on all data for the years of 2002 to 2012, and they show what the expected time in working poverty (or the risk of working poverty) would be if the conditions of the years 2002 to 2012 prevailed throughout ages 50 to 69 of a synthetic cohort. The right part of Table 2 compares results for the prerecession period with the recession period.

Gender. Women generally have higher risk and spend more time in working poverty than men, although the differences are not substantial (Figure 2). This is true for the total population's risk of (women 33 percent, 95 percent confidence interval [CI] = 31 percent to 35 percent; men 30 percent, 95 percent CI = 28 percent to 32 percent) and expectancies in working poverty (men's years 1.1, 95 percent CI = 1.0 to

1.2; women's years 1.2, 95 percent CI: 1.1 to 1.3), as well as for most bivariate combinations of gender and the other variables.

Race/Ethnicity. Racial/ethnic disparities in risk and expectancies are marked. Latinos, on average, have approximately 50 percentage points higher risk and spend three years longer in working poverty than White men (Table 2). These results are statistically significant, as confidence intervals shown in Table 2 for Latinos and White men do not overlap. Black men also have substantially higher risk than White men (Black 43 percent, 95 percent CI = 38 percent to 47 percent; White 15 percent, 95 percent CI = 13 percent to 17 percent) and spend more than one additional year in working poverty (Table 2). Compared with Latinos, Black men spend more time out of the labor market (e.g., unemployed), so their relative advantage in terms of working poverty may not be reflective of actual labor market advantage (Appendix, Table A1). Racial/

ethnic disparities for women are qualitatively similar to their men counterparts in that Blacks and Latinas experience higher risk of and longer expectancies in working poverty, and these differences are statistically significant. However, the difference between Latinas and Black women is less pronounced in risk (Latinas risk 58 percent, 95 percent CI = 53 percent to 63 percent; Black risk 50 percent, 95 percent CI = 46 percent to 54 percent) and expectancies (Table 2).

Early-Life Disadvantage. Disparities by early-life disadvantage, as shown in Figure 2, are also as expected. Individuals with more childhood disadvantages have higher lifetime risk of working poverty and can expect to spend more years in working poverty than individuals with fewer childhood disadvantages. For men, those with more early-life disadvantages have almost double the percentage risk (41 percent vs. 21 percent), and for women the disparity is almost as wide (41 percent vs. 25 percent). In all of these comparisons the confidence intervals do not overlap, and they are statistically significant.

Educational Attainment. As hypothesized, educational disparities are substantial, and those who have less education have higher lifetime risk and can expect to spend longer in working poverty than their higher educated counterparts (Figure 2, Table 2). The largest difference is between those who have less than a high school degree and those who have a high school diploma; the gains from further education beyond a high school diploma are less pronounced (Table 2). For example, those with less than high school have 28 percentage points higher risk of working poverty compared with those with a high school diploma (less than high school 56 percent, 95 percent CI = 52 percent to 61 percent; high school 28 percent, 95 percent CI = 25 percent to 31 percent), whereas the jump from high school diploma to college or higher is 17 percentage points (college 11 percent, 95 percent CI = 8 percent to 13 percent). Although the emphasis here is on working poverty, it is worth noting that White men and women with the highest education spend more time in unemployment than working poverty (Appendix, Table A1).

Intersections. Thus far we have focused primarily on bivariate associations, disaggregating only by gender. Although the sample sizes are inadequate to test all predictors together, we now present examples of how the accumulation of disadvantages also affect risk and expectancies in working poverty. Although women on the whole have higher risk of and longer expectancies in working poverty, Latinas have lower lifetime risk (women 58 percent, 95 percent CI = 53 percent to 62 percent; men 67 percent, 95 percent CI = 62 percent to 72 percent) and spend considerably less time in working poverty than their men counterparts (women 2.7 years, 95 percent CI = 2.3 to 3.0 years; men 3.4 years, 95 percent CI = 3.0 to 3.9 years). This demonstrates that gender operates differently depending on race/ethnicity.

Racial/ethnic disparities persist regardless of early-life disadvantage and educational attainment, although the extent of the disparities depend on other positionalities (Table 2). We do not find a consistent pattern in time spent in working poverty according to how race/ethnicity intersects with early-life disadvantage (Table 2), and confidence intervals often overlap. The widest disparity is for Latinos, for whom the difference is about 1 year longer in working poverty for the more disadvantaged, regardless of subsequent educational attainment. White men have the narrowest disparity in time spent in working poverty by childhood disadvantage, regardless of educational attainment. However, the racial/ethnic disparities continue to dominate: early-advantaged Blacks and Latinx have substantially higher risk of and time spent in working poverty than even their disadvantaged White counterparts. The racial/ethnic disparity holds even at the highest levels of education, with White men and women anticipating just one to two months in working poverty, Black women and men about six months and 1 year, respectively, and Latinx almost 1 year to 1.5 years, despite achieving higher educational attainment. Note that the confidence intervals are especially wide for higher educated Blacks and Latinx from economically disadvantaged backgrounds, a reflection of the rarity of that trajectory in the United States (Tilly 1998; Tomaskovic-Devey 2014).

Seen from another angle, from the perspective of educational attainment, disparities depend on race/ethnicity, gender, and childhood disadvantage. Having a high school diploma compared with less than high school or GED substantially reduces years spent in working poverty, halving (White men and women) or almost halving (Latinx and Blacks) WLE in working poverty for those who were more advantaged in early life (Table 2). A high school diploma does confer advantage to the early disadvantaged, but not quite to the same degree.

In sum, over the period from 2002 to 2012, we find evidence for some elements of hypothesis 1. Those in vulnerable groups (Black, Latinx, and lower educated) experience both a higher lifetime risk of (Figure 2A) and longer expectancies in (Figure 2B) working poverty. Each of the predictors we consider—race/ethnicity, gender, childhood disadvantage, and educational attainment—is affected by positionality on the other predictors.

Vulnerable Groups Fared Worse during the Great Recession

To test hypothesis 2, that the Great Recession will differentially affect those in vulnerable groups, we examine expectancies in working poverty before and during the Great Recession⁵

⁵For brevity, we refer to “prerecession” (2002–2007) to designate waves prior to the Great Recession and “recession” (2008–2012) for waves during and after the Great Recession, which in the United States was technically December 2007 through June 2009, according to the National Bureau of Economic Research.

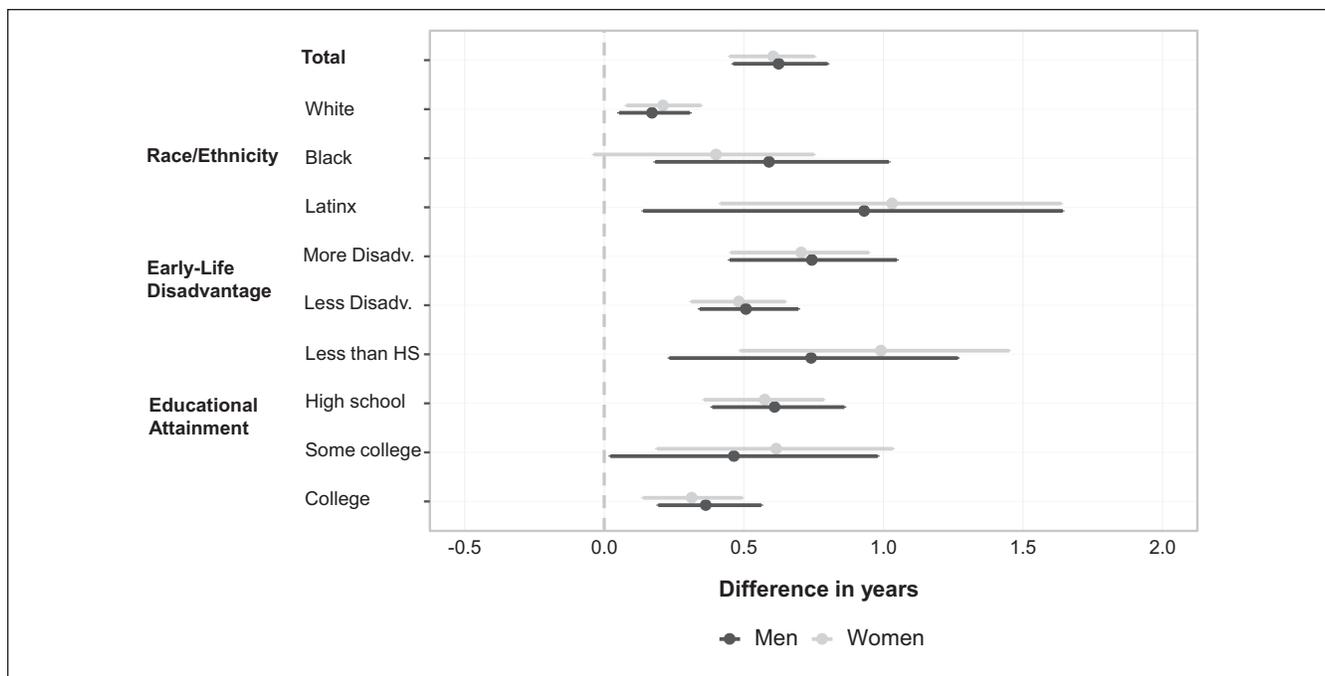


Figure 3. Difference between lifetime spent in working poverty during the recession (2008–2012) compared with prerecession (2002–2007).

for later career workers, considering race/ethnicity, gender, early-life disadvantage, and educational attainment, and we focus on the difference between the recession and the prerecession period. Results are shown in Figure 3 (bivariate) and in Table 2 (intersections). Estimates for the risk of working poverty are qualitatively similar, and they are reported in Table A2 in the Appendix.

Gender. The recession is associated with an increase in lifetime spent in working poverty for all groups (Table 2). The association between working poverty and the recession seems to have been roughly similar for women and men (Figure 3); the time spent in working poverty increased the same amount for women and men, with only minor differences (about .6 years). This seems to hold not only for the general population but also for most group comparisons, and it is contrary to previous findings regarding employment and unemployment, which led to a consensus that men were affected more by the recession than women (e.g., Dudel and Myrskylä 2017).

Race/Ethnicity. All ethnic groups saw an increase in the time spent in working poverty since the market crash, and it was highest for both Latinos and Latinas. Confidence intervals for Black women include zero (Figure 3), implying that the effect of the recession is not statistically significant for them, which is likely driven partly by Blacks' transitioning into unemployment or leaving the labor market (Appendix, Table A2). The more finely grained results shown in Table 2 indicate that racial/ethnic differences

interact with educational attainment and early disadvantage; however, most group differences have too large confidence intervals to draw clear conclusions.

Early-Life Disadvantage. Point estimates for early-life disadvantage are as hypothesized. Men and women who had more early-life disadvantages experienced approximately three months longer in working poverty in the Great Recession period than their more advantaged counterparts (e.g., childhood-advantaged men: 6.1 months, 95 percent CI = 4.0 to 8.2 months; childhood-disadvantaged men: 8.9 months, 95 percent CI = 5.3 to 12.7 months). In other words, the detrimental effect of the recession was stronger for those whose families of origin were more disadvantaged, and it was statistically significant.

Educational Attainment. Previous literature on the effect of the Great Recession found a strong educational gradient indicating that the lower educated were hit harder. The point estimates shown in Figure 3 suggest a similar pattern. The time spent in working poverty increased most for individuals without a high school degree (close to one additional year in working poverty). Generally, the recession is associated with an increase in working poverty for all educational levels and irrespective of gender.

Intersections. It is interesting to note that in relative terms, working poverty increased more for lower educated (less than high school or GED) women (+25.8, +21.9) than for lower educated men (+16.0, +1.1), while the opposite is

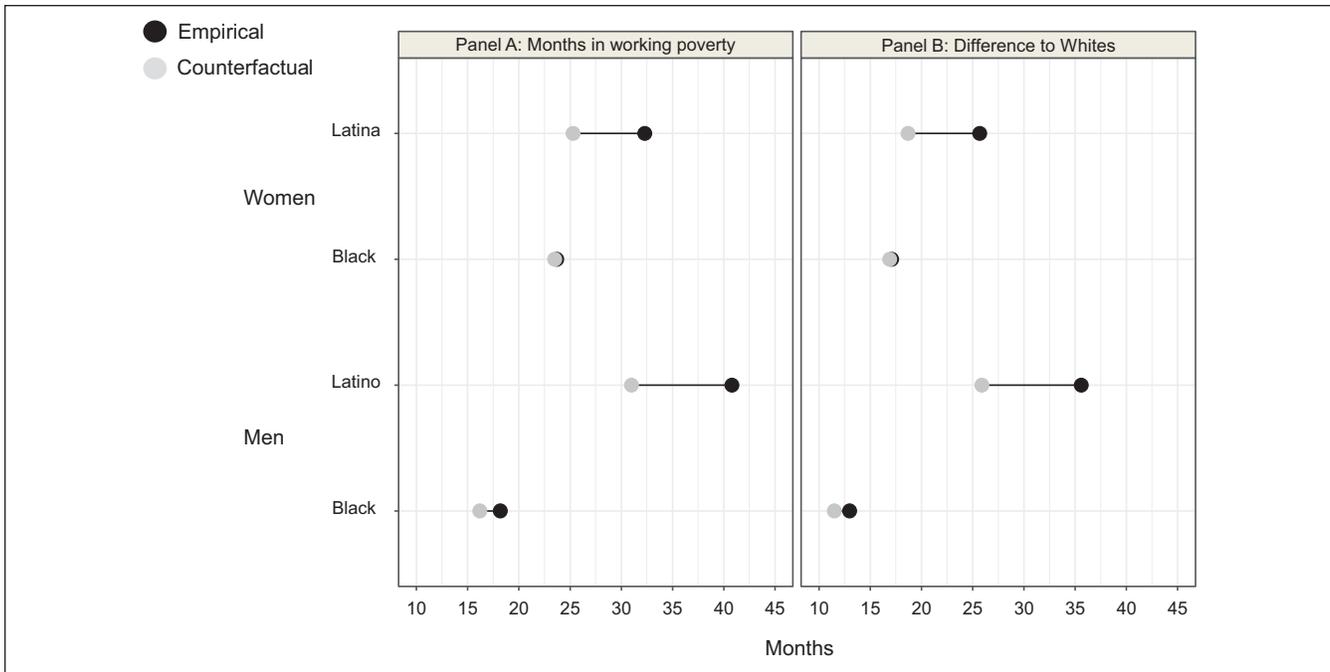


Figure 4. Counterfactual calculations showing education as a link between race/ethnicity and working poverty, 2002 to 2012. In (A), the black dot indicates months in working poverty from the empirical data, while the gray dot indicates the estimated months if race/ethnicity did not predict educational attainment: the counterfactual. In (B), the difference between the black (empirical) and gray (counterfactual) dots indicates the narrowing disparity in months between Whites compared with Blacks and Latinx if racial/ethnic disparities in educational attainment were eliminated.

true for the highly educated. This is similar for Whites and Blacks, but not for Latinx, though small samples make interpretation challenging. Nevertheless, these results suggest how gender plays a role in the occupational selection mechanism, that is, stronger than race but not as strong as education. These findings reinforce, again, the importance of an intersectional approach.

Summary. Working poverty increased for all groups in the era of the Great Recession compared with the prerecession era. Results indicate some tendencies, such as a slightly larger recessionary disadvantage for women than for men and for the lower educated. However, not all differences are substantial, and wide confidence intervals mean that the evidence for hypothesis 2 is mixed.

The Role of Educational Attainment

We study a relatively late part of the working life course, which is influenced by many factors. Early-life factors have not only direct effects on later working life but also indirect effects by influencing the intervening factors on which labor market outcomes depend. An important example we consider here is educational attainment, and we provide a counterfactual exercise that allows us to compare what expectancies in working poverty would be if race/ethnicity did not directly influence educational attainment. Practically,

if a policy intervention disassociated educational attainment from race/ethnicity, such that Blacks and Latinx were no longer disadvantaged compared with Whites, would there still be disparities in working poverty risk and expectancies?

The results of the counterfactual calculations are shown in Figure 4 and can be understood as follows. The difference between White and Latino men in time spent in working poverty (2002–2012) is roughly 35.6 months. That is, Latinos spend 8 times longer in working poverty (41 months for Latinos vs. 5 months for White men). Through the counterfactual, we assign Latinx and Black men and women the same distribution of educational attainment as their more advantaged White counterparts, while keeping early-life disadvantage constant. In other words, even if there remained racial/ethnic disparities in early-life disadvantage, what would be the racial/ethnic disparities in working poverty if a policy intervention were able to eliminate disparities in educational attainment? In this example, we find that the working poverty disparity between Latino and White men would persist but be significantly reduced from 35.6 months to about 25.9 months.

In the counterfactual scenario, the differences between Whites and Latinx are strongly reduced, while the effect on the difference between Whites and Blacks is rather small (Figure 4). The difference between White and Black men is reduced by only about 1.5 months. To understand the reason for this, it is important to consider that in this counterfactual

exercise, first, we do not change early-life disadvantage by race/ethnicity; Blacks still have a higher risk of a childhood disadvantage than Whites. Second, we do not change the returns to education by race/ethnicity, only the distribution of educational attainment; Blacks with college degrees still have a higher risk of working poverty than Whites with college degrees. The difference in the effect between Blacks and Latinx is likely due to a larger educational gradient in risk of working poverty for Latinx (Figure 4). The difference between the lowest and the highest educational attainment in terms of the time spent in working poverty is 3 times as large for Latinx as for Blacks. This means that Latinx are “penalized” more for their low educational attainment than Blacks; conversely, they are rewarded more for their higher educational attainment than Blacks. From another perspective, it appears that Blacks’ educational attainment is less predictive of their experiences of working poverty. It may also be that different experiences in early life with regard to disadvantage could be contributing to the difference in the mediation. In sum, these findings indicate that eliminating racial/ethnic disparities in educational attainment will only partially disrupt the link between race/ethnicity and working poverty if disparities in the returns to education remain.

Discussion

Main Findings

We have three main findings. First, life-course disadvantage is associated with increased lifetime risk of and expectancies in working poverty in later life. The disparity is dependent on race/ethnicity, gender, early-life disadvantage, education, and the economic era. Latinx and Black women and men experience higher lifetime risk of working poverty than their White counterparts, regardless of early-life disadvantage and educational attainment. The disparity by early-life disadvantage is much narrower for the higher educated, suggesting that higher education substantially mitigates early-life disadvantage.

In terms of expectancies, lower educated Blacks and Latinx experience the longest expectancies in working poverty, with early-life disadvantaged Latinos spending almost one third (5.1 years out of 17.3 years) of their peak earning years in working poverty. Black women and Latinas experience almost 3.5 years out of their approximately 17 to 18 years of WLE in working poverty. On the other hand, expectancy in working poverty for college-educated Whites, regardless of early disadvantage, is almost invisible in Figure 3. Indeed, that expectancy in unemployment is higher than expectancy in working poverty (Appendix, Table A2) suggests that perhaps these higher educated groups “choose” unemployment over low wages.

At the other end of the educational spectrum, it appears that lower educated women and lower educated Black and White men may register as not in the labor force more so

than their higher educated counterparts. Not in the labor force is perhaps picking up withdrawal from the labor market (as well as disability) in addition to the retirement of more economically stable individuals. This would suggest that, perhaps, unemployment or working poverty for these groups might be underestimated, the latter if retention wages are not high enough to promote labor force participation.

Second, we find strong evidence that lifetime risk of and expectancies in working poverty increased in the recessionary era. That increase fell disproportionately on certain sub-populations: lower educated Blacks and Latinx and women more so than men. Black men and Latinx experienced the greatest increase in risk of working poverty in the recessionary era, with disadvantaged Latinos’ risk climbing from 52.0 percent to 72.8 percent. It is worth noting that Black men, who climb from 29.3 percent to 47.4 percent, did not retain higher paying jobs; they found themselves, instead, in states of unemployment (Appendix, Table A2). We find evidence that those who experienced more life-course disadvantages bore the brunt of the recession in terms of expectancies in working poverty. Black women and men, Latinx, and the lower educated experience the greatest increase in expectancies in working poverty. Within racial/ethnic groups, exposure to childhood disadvantages appeared to more negatively affect women than men. Interestingly, whereas prerecession educational attainment significantly mediated the association between early-life disadvantage and working poverty, in a period of macroeconomic crisis, early-life disadvantage appears to reemerge as meaningful. This indicates support for our hypothesis that those with lower human and social capital will be more vulnerable during an external shock, such as the recession.

Third, educational attainment is an important, but not complete, part of the association between race/ethnicity and later life working poverty. An intervention that disrupts the link between race/ethnicity and educational attainment substantially reduces the disparity in time spent in working poverty between Whites and Latinx, though less so for Blacks. However, even if Blacks and Latinx had equal educational opportunities to Whites, disparities in the burden of working poverty remain. A significant body of research points to a range of other mechanisms, including but not limited to discrimination in hiring and wages, the geographical distribution of opportunities, housing segregation, and the challenges of finding reemployment for those with felony convictions. This indicates that although policies directed at increasing educational attainment are important for poverty reduction, other factors linking race/ethnicity to later life labor force participation and income must be addressed.

Methodological Considerations

Measuring poverty is not straightforward in any population but is even more challenging for older Americans. The official poverty threshold’s underestimation of poverty is

particularly inaccurate at older ages. In 2010, the center year of our recessional analysis, the official poverty rate for those aged 65 and older was 9 percent (Danziger et al. 2012). However, the supplemental poverty measure indicated that this group's poverty rate was actually 15.9 percent in 2010; out-of-pocket medical costs are the primary driver of the almost seven percentage point discrepancy (Danziger et al. 2012).

Also, although older Americans may escape above the FPL more quickly, they tend to hover just above it (Jensen and McLaughlin 1997), with people aged 60 to 80 years experiencing particularly high risk of poverty (Rank and Hirschl 2001). For these reasons, we can assume that the official poverty measure contributes to an underestimate of working poverty. There is no reason to expect that underestimate is systematically biased for the different subpopulations that we examine. However, it would be interesting to confirm this in future research by constructing the aforementioned supplemental poverty measure or a relative measure of poverty.

Also relating to measurement, our measure of early-life disadvantage is based on self-reported, retrospective information and on combining several variables (similar to Montez and Hayward 2014). However, we implemented several alternative approaches for combining the underlying variables, using a different threshold for the number of childhood adversities and using factor analysis, and all sensitivity checks yield qualitatively similar results.

There are other potential limitations to our results. This study focuses on individual-level factors that sort people into different pathways. It is important to note that those pathways lead to different types of jobs (both occupation and full-time vs. part-time, etc.) and in different geographical spaces. Kearney, Hershbein, and Jácome (2015) found that changes in occupational shares account for one third of the decline in earnings for those with less than a high school degree. In other words, it is important to acknowledge the macroeconomic structures and institutions within which these individual-level factors operate (Brady, Baker, and Finnigan 2013). Likewise, of course, the Great Recession affected regions of the United States differently, leading to large regional variation in negative labor market outcomes (Thiede and Monnat 2016). As our focus was on race/ethnicity, gender, early-life disadvantage, and education, data constraints meant that we were unable to also take into consideration regional variation. Furthermore, the publicly available HRS data include only broad regions, such as "Northeast" and "Southeast," which would provide only limited additional information. Therefore, a more geographically focused study is an important area for future research.

There are two key features related to our modeling approach. When interpreting our results, it is important to keep in mind that our estimates relate to what in demography is called a period perspective; that is, our results show how

many years individuals would spend in working poverty if the conditions of the years 2002 to 2012 would prevail throughout their late careers. This means that our findings do not necessarily represent the experience of the baby boomer cohorts or any other birth cohort (also see Dudel and Myrskylä 2020); they do, however, clearly show what the labor market conditions of the period under study imply with respect to disparities between groups. Also, the multistate approach we use rests on the Markov assumption. Essentially, this assumption implies that transition probabilities only depend on the current employment state and covariates, while previous employment states do not matter. The Markov assumption keeps our estimation problem tractable, in particular as we are interested in population-level quantities such as means and probabilities, and not in predicting individual trajectories. It is a useful simplification to estimate the former, but for the latter the Markov assumption likely is problematic.

Finally, we interpret the difference in indicators between the prerecession and the recession period as causal. Ideally this would require that no other factors than the financial crisis affected changes in outcomes over time. This is, obviously, not true. However, given the strong, sudden, and mostly unexpected effect of the recession, it does not seem unrealistic to assume that not all, but most of the changes over time were caused by it.

Conclusion

This article focuses on the lifetime risk of and expectancies in working poverty for later career U.S. residents. This baby boomer cohort is of particular interest because of its size but also because the Great Recession hit while most of the cohort was in a later career stage. This timing, along with occupational shifts from, for example, higher paid more stable manufacturing and construction jobs to the lower paid more precarious service economy, especially for those with lower educational attainment (Kearney et al. 2015), put the boomers at high risk of and longer expectancies in working poverty. As we would expect later career workers to be at the peak of their earning potential, losing those years of higher earnings will affect them not only in the moment but for their future Social Security earnings, pensions, and retirement savings. Working poverty is not only a problem of having less disposable income; it is also associated with poor health, likely driven by material (e.g., lack of health care, inability to retire) and nonmaterial (insecurity of contingent work, psychosocial stressors) factors (Pfortner and Schmidt-Catran 2017).

In conclusion, our results highlight the importance of an intersectional approach that acknowledges how the accumulation of disadvantage over the life course, starting with the previous generation, creates and perpetuates legacies of economic disadvantage. Our most vulnerable—older individuals who are Black or Latinx, who experienced early-life

disadvantage, and those with lower educational attainment—can expect to spend more of their peak earning years in working poverty, putting them at additional disadvantage in terms of other life outcomes, including their health. Moreover, achieving higher education only partially mediates the association between race/ethnicity and expectancies in later life working poverty. Heretofore, much policy attention in the realm of working poverty has been devoted to increasing educational attainment. Our research shows that although intervening on education would reduce racial/ethnic disparities in working poverty, it will not eliminate them.

This clearly indicates the importance of programs to improve opportunities, not only in terms of education, for those who are, essentially, born disadvantaged.

These findings will only become increasingly important. In the past decade, pension reforms increased the age at retirement for younger cohorts of Americans. Our results suggest that more years at work would translate into more years spent in working poverty for the most disadvantaged. Finally, the economic and health crises caused by the 2020-2021 COVID-19 pandemic are likely to further exacerbate disparities in working poverty and effects of working poverty.

Appendix

Table A1. Expectancies in Different Employment States by Gender, Race/Ethnicity, Early-Life Disadvantage, and Educational Attainment.

	Full-Time/Part-Time	Working Poor	Unemployed	Not in Labor Force	PLE
All men	8.67	1.08	.66	6.90	17.60
White	9.78	.43	.53	6.74	17.63
Black	6.40	1.51	.82	7.82	16.98
Latino	6.95	3.40	1.01	6.23	18.26
Lower early-life SES	7.55	1.59	.70	7.26	17.50
Higher early-life SES	9.56	.69	.62	6.61	17.68
Less than HS	5.30	2.46	.88	7.74	16.94
HS/GED	8.42	.96	.60	7.30	17.56
Some college	9.32	.69	.80	6.66	17.67
College and higher	11.53	.32	.56	5.65	18.17
All women	7.05	1.20	.53	9.16	18.27
White	8.19	.55	.46	8.92	18.30
Black	5.55	1.98	.66	9.23	17.92
Latina	4.73	2.69	.60	1.02	18.61
Lower early-life SES	5.95	1.61	.54	9.71	18.21
Higher early-life SES	8.12	.81	.51	8.63	18.33
Less than HS	3.66	2.52	.52	1.67	17.88
HS/GED	7.19	1.13	.57	9.14	18.37
Some college	8.29	.83	.53	8.19	18.09
College and higher	9.31	.36	.43	8.27	18.49

Note: HS = high school; PLE = partial life expectancy; SES = socioeconomic status.

Table A2. The Effect of the Great Recession for Risk of Working Poverty and Expectancies in Different Employment States by Gender, Race/Ethnicity, Early-Life Disadvantage, and Educational Attainment.

	Risk	Full-Time/Part-Time	Working Poor	Unemployed	Not in Labor Force
All men	.13	-1.30	.62	.44	.19
White	.05	-.53	.17	.29	.04
Black	.10	-1.83	.59	.53	.53
Latino	.12	-1.24	.93	.78	.00
Lower early-life SES	.14	-1.84	.74	.55	.38
Higher early-life SES	.12	-.80	.51	.34	.01
Less than HS	.11	-2.45	.74	.74	.51
HS/GED	.13	-1.39	.61	.41	.41
Some college	.09	-.08	.46	.58	-.80
College and higher	.09	.07	.36	.19	-.52

(continued)

Table A2. (continued)

	Risk	Full-Time/Part-Time	Working Poor	Unemployed	Not in Labor Force
All women	.11	-.93	.61	.35	-.07
White	.05	-.58	.21	.34	-.08
Black	.04	-.82	.40	.34	.20
Latina	.11	.32	1.03	.25	-1.31
Lower early-life SES	.10	-1.31	.71	.31	.26
Higher early-life SES	.11	-.48	.48	.39	-.48
Less than HS	.09	-.86	.99	.28	-.29
HS/GED	.12	-1.26	.58	.41	.15
Some college	.14	-1.06	.62	.39	-.17
College and	.08	-.13	.31	.25	-.55

Note: HS = high school; SES = socioeconomic status.

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