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Further resource multiplication at more advanced ages? Interactions between education, parental socioeconomic status, and age in their impacts upon health

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Abstract

While scholarship has shown that socioeconomic status creates fine-grained gradients in health, there is debate regarding whether having higher amounts of one socioeconomic resource amplifies (resource multiplication) or reduces (resource substitution) the health benefits of one's other socioeconomic resources. A further question is whether these processes are accentuated or diminished at more advanced ages. Using the 2016 and 2018 waves of the United States General Social Survey (N = 2995) and logistic regression analyses, this study reveals processes of resource multiplication between respondents' education and both parental education and parental occupational prestige in their effects upon self-rated health. Furthermore, these processes are accentuated at more advanced ages. Additionally, these interactive effects remain significant after controlling for respondent-level total family income and occupational prestige, suggesting mechanisms beyond actualized socioeconomic circumstances. These findings raise concerns regarding less educated older persons coming from less advantaged backgrounds. Accordingly, policies and programs should help equalize social circumstances early in

the life course, to produce more salubrious trajectories with advancing age.

KEYWORDS
aging, education, health, intergenerational effects, occupational prestige, resource multiplication

1 | INTRODUCTION

Socioeconomic status (SES) potently affects almost all health conditions and creates fine-grained gradients in health (Scambler, 2012). Furthermore, it is multidimensional and linked with family background, education, employment, and financial resources (Dean & Platt, 2016). Relatedly, socioeconomic resources span from economic, to social, to cultural (Dean & Platt, 2016). These facts motivate analyses of the complex mechanisms linking SES with health, and their moderators. These analyses are further motivated by recent times' extent to which striving for favorable health is broadly valued (Crawshaw, 2014).

There is debate regarding whether higher amounts of one socioeconomic resource amplify (resource multiplication) or reduce (resource substitution) the health benefits of other socioeconomic resources (Andersson, 2016). Furthermore, research has addressed moderation by age (Andersson, 2016; Ross & Mirowsky, 2011; Schaan, 2014).

Studies emphasizing increasing health impacts with age often adopt a cumulative (dis)advantage perspective (Ross & Mirowsky, 2011): more favorable and less favorable socioeconomic circumstances earlier in life expand into further advantages and disadvantages, respectively, through time (Ross & Wu, 1996). While scholarship has conceptually linked cumulative (dis)advantage with resource multiplication (see De Grande et al., 2015), this study more specifically conceptualizes cumulative (dis)advantage as cascading effects across the life course, rather than interactions between resources. Notably, scholarship has found increasing health effects of both education and occupational status with age even within Sweden, despite its strong welfare state geared towards reducing socioeconomic differences in health (Leopold, 2016).

Conversely, stress theory and the "buffering" hypothesis emphasize that effective coping reduces unfavorable conditions' consequences (Cheng et al., 2014). Through time, disadvantaged individuals might improve their coping strategies for maintaining their health despite unfavorable circumstances (Herman & Tetrick, 2009), implying that SES-based health differences might decrease with age. Through investigating interactions between socioeconomic resources at the personal and parental levels and their moderation by age, this study combines these two research pathways.

The remainder of this introduction begins with elaboration on the central theoretical perspectives, resource substitution and multiplication, followed by discussion of the few studies that have examined dynamics of resource substitution and multiplication based on age. The focus is Andersson (2016), which closely motivates the present study. While Andersson (2016) combined parental education and occupational prestige into one index, the next section presents reasons for which these two parental variables might interact differently with personal education in their health impacts. The following section provides plausible mechanisms for these interactive effects beyond actualized socioeconomic circumstances. Lastly, this study's research questions are presented.

1.1 | Resource substitution and multiplication

Resource substitution suggests that lack of one resource increases dependence on other resources, accentuating their importance for health and well-being (Andersson, 2016; Mirowsky & Ross, 2005a, 2005b; Ross &

Mirowsky, 1989, 2006, 2011; Schaan, 2014). "Resource substitution exists when having multiple resources makes outcomes less dependent on the presence of any specific resource…. As a consequence, the effect of having a specific resource is greater for those who have fewer alternative resources" (Ross & Mirowsky, 2006, p. 1402). Veenstra and Vanzella-Yang (2022) highlighted how socioeconomic resources might especially benefit the health of those from less advantaged backgrounds since they compensate for a past dearth of health-protective resources. Accordingly, education might especially benefit those whose earlier circumstances disadvantaged their sense of personal control and mastery, and their opportunities for financial success (Veenstra & Vanzella-Yang, 2022). Scholarship in this vein began with Ross and Mirowsky (1989), who suggested that sentiments of control over one's circumstances and perceptions of support from others are mutually substitutive in reducing depression. Because they constitute alternative processes for minimizing perceptions of threat, those with strong personal control have less need for social support, and vice-versa (Ross & Mirowsky, 1989). Accordingly, those with many and diverse resources suffer fewer consequences from declines in any one resource (Andersson, 2016; Mirowsky & Ross, 2005a, 2005b; Ross & Mirowsky, 1989, 2006, 2011; Schaan, 2014).

Conversely, resource multiplication suggests that more of one resource positions one to garner greater benefits from other resources (Andersson, 2016; Ross & Mirowsky, 2006, 2011). "'resource multiplication' theory suggests that the influence of education on well-being is greater for persons with more resources. In this view, advantaged groups gain most from the resources they have, so that their resources multiply to perpetuate and augment their advantage" (Ross & Mirowsky, 2006, p. 1402). Ross and Mirowsky (2006) proposed that men potentially profit more from education than women do because of more capability of converting education into greater incomes and authority in the workforce. Veenstra and Vanzella-Yang (2022) suggested that those from more advantaged families might have been better prepared throughout childhood for higher education, increasing the rewards thus derived. They might further live more healthily, a proclivity accentuated by education. Furthermore, early life disadvantages may have scarring effects on future health that cannot be counterbalanced by education (Veenstra & Vanzella-Yang, 2022). Moreover, the middle-class biases of Western educational establishments might result in students from more advantaged backgrounds acquiring greater benefits from their education (Andersson, 2016).

Some studies have engaged these concepts without explicitly using the terms "resource substitution" and "resource multiplication". Schafer and Ferraro (2011) found that among those with higher body mass indices (fewer health resources), education is a stronger predictor of disability (resource substitution). Ferraro and Koch (1994) found that religious involvement is more beneficial for Black persons' health than that of White persons (resource substitution). Scholarship having found higher returns to education in earnings for women than for men (Arrazola & de Hevia, 2006) also implies resource substitution. Suggesting resource multiplication, Farmer and Ferraro (2005) found that education does more to improve White adults' health than that of Black adults. Similarly, parents' marital status, mother's education, and income-to-needs ratio at birth were found to improve body mass index for Blacks less than for Whites (Assari et al., 2018). Sociological scholarship has thus had an abiding interest in how diverse resources, advantages, and disadvantages interact in affecting important outcomes, including income, health, and well-being.

Research employing these theories has examined interactions between diverse socioeconomic and personal resources at the personal and parental levels in their impacts upon health and well-being (see Andersson, 2016; Ross & Mirowsky, 2006, 2011; Schaan, 2014; Schafer et al., 2013). Because of the diverse and potent mechanisms connecting education with health, including development of cognitive abilities and perseverance, control over life circumstances, knowledge of healthy living, neighborhood quality, and probability of holding well-paid employment providing autonomy and opportunities for creativity (Case & Deaton, 2020; Lee, 2011; Mirowsky & Ross, 2005a; Schaan, 2014; Schafer et al., 2013), education has been a focal point within this scholarship.

Resource substitution has received more support than resource multiplication. Among the health outcomes found to be affected by resources in a substitutional manner are mortality (Andersson, 2016; Schafer et al., 2013), cardiovascular concerns (Schafer et al., 2013), physical impairment (Ross & Mirowsky, 2011), and depressive symptoms (Ross & Mirowsky, 2006; Schaan, 2014). Pertinent to the present study, in analyses of self-rated health, while

some investigations have found resource substitution (Brown et al., 2014; Hill & Needham, 2006; Zhu & Ye, 2020), numerous studies have revealed resource multiplication (Andersson, 2016; Bauldry, 2014; Delpierre et al., 2009; Farmer & Ferraro, 2005; Veenstra & Vanzella-Yang, 2022; Zhang et al., 2020). These conflicting findings (some supporting resource substitution, some supporting resource multiplication) might be substantially due to the different health outcomes and processes investigated (Andersson, 2016). Plausibly, with many health outcomes, resource substitution often occurs as one set of resources are flexibly employed to assuage the detriments to life circumstances caused by lower extents of other resources; these life circumstances might have direct impacts upon many health outcomes.

Self-rated health, however, has unique properties. Idler and Benyamini (1997) connected studies of self-rated health with the World Health Organization's holistic conceptualization of health as extending beyond illness and disability, and as encompassing not only physical, but also mental and social aspects of well-being. Self-rated health as a measure of health-associated quality of life centrally implicates particular health concerns, health-relevant behaviors, direct personal experiences and assessments of overall physical functioning, and social comparisons (Quesnel–Vallée, 2007). DeSalvo et al. (2006) added that while self-rated health is potently affected by SES, depressive symptoms, and cognitive and physical functioning, it involves other aspects of health-related quality of life. These include personal assessments of one's life course health trajectories, health behaviors, and personal appraisals of current and anticipated occurrences (DeSalvo et al., 2006). Benyamini et al. (1999) further included medication use, emotional state, and energy levels.

Therefore, self-rated health is a more subjective and holistic measure incorporating many aspects of quality of life, self-evaluations, and affective states that extend beyond more objective health outcomes. Accordingly, greater extents of one resource might increase self-esteem, optimism, self-efficacy, mastery, enthusiasm, confidence, and hope, all of which are important aspects of overall health and well-being that potentially accentuate the subjective benefits of other resources (Chlapecka et al., 2020; Montez & Barnes, 2016), thus improving self-rated health. The opposite might occur when lower amounts of one resource create pessimism, despair, lack of confidence, and hopelessness. This might explain why numerous studies of self-rated health have revealed resource multiplication (see Andersson, 2016; Bauldry, 2014; Delpierre et al., 2009; Farmer & Ferraro, 2005; Veenstra & Vanzella-Yang, 2022; Zhang et al., 2020). Researchers should therefore be clear about their particular outcomes and the resources they analyze as exposures.

An intriguing possibility is that processes of resource substitution and multiplication impact health substantially through exposure to and management of stressful circumstances, which can damage health (see stress process model below). In a study emphasizing how education bolsters abilities to effectively substitute resources, Mirowsky and Ross (2005b) suggested that these benefits assuage the stressful supervisory duties often undertaken by well-educated workers. They further argued that education might especially benefit women's health because the stronger personal control thus achieved is valuable for managing the stressors associated with women's socioeconomic disadvantages (resource substitution) (Ross & Mirowsky, 2006). One study employed resource multiplication to explain why education benefits the self-rated health of heterosexual men more than that of bisexual men (Zhang et al., 2020). Among the former, who are more likely to conform to mainstream conceptions of masculinity, lower levels of education might especially cause experiences of stigma (Zhang et al., 2020), a potent stressor (Schvey et al., 2014). Further studies finding resource multiplication emphasized that education protects health substantially by increasing the social capital, personal control, self-efficacy, and confidence that help address stressful circumstances (Chlapecka et al., 2020; Montez & Barnes, 2016). These benefits are magnified by further advantages that ease the translation of education into higher-status, creative, and autonomous work, and by marriage to a similarly well-educated spouse who is likely also more effective at addressing stressful family dilemmas (Chlapecka et al., 2020; Montez & Barnes, 2016).

This scholarship suggests that the stress process model (see Pearlin, 1989; Pearlin et al., 1981) is a useful framework for understanding many processes of resource substitution and multiplication. A fundamental tenet of this model is that various personal resources, including self-efficacy, social support, coping, and positive self-concepts, protect physical and mental well-being from stressors. A central goal is to show how experiences of stressful

circumstances and the resources to effectively cope with them are unevenly disseminated across a population, such that those in disadvantaged demographic and socioeconomic circumstances undergo worse stressors while possessing fewer resources to buffer them, with negative consequences for physical and mental health (Pearlin, 1989; Pearlin et al., 1981).

While resource substitution and the stress process model hold different goals, they are often complementary and make similar predictions. As diverse resources buffer stressors, when one resource is lacking, others might become more health-protective. If other resources are also lacking, coping with stressors is especially compromised. Furthermore, if education increases capacities to effectively substitute resources (Mirowsky & Ross, 2005a, 2005b), the well-educated might often effectively compensate for their lack of one resource with other resources.

However, in some circumstances, resource multiplication and the stress process model make similar predictions, and are complementary, despite holding different goals. If diverse influences upon social capital, self-esteem, self-efficacy, personal control, and mastery magnify each other's subjective benefits (Chlapecka et al., 2020; Montez & Barnes, 2016), they might demonstrate multiplicative influences upon the effective coping that protects subjective well-being from stressors. Furthermore, these psychosocial characteristics are especially implicated in self-rated health (see above), suggesting that resources might often interact multiplicatively as they affect self-rated health. Therefore, while for most health outcomes we might expect resource substitution to predominate, with self-rated health as the outcome, resource multiplication might often prevail.

In concert with the above, scholars have shown the complementarity of the stress process model with the concepts of resource substitution (Jung, 2014; Koltai & Schieman, 2015; Young & Schieman, 2012) and multiplication (Etherington, 2015).

1.2 | Studies of further moderation by age

A dearth of health studies have combined investigations of resource substitution and multiplication with analyses of moderation by age, an endeavor important for in-depth understandings of the dynamics through which socioeconomic resources impact health. This endeavor is further motivated by life course perspectives which emphasize that processes spanning from birth through later life perpetuate social inequalities and their health and well-being impacts (Dean & Platt, 2016). These understandings are imperative because of population aging throughout the industrialized world (Abramson & Portacolone, 2017) and widespread increasing socioeconomic inequality (Dean & Platt, 2016).

Ross and Mirowsky (2011) found resource substitution between personal and parental education in their impacts upon physical impairments that is accentuated with age. Schaan (2014) uncovered resource substitution between poverty of family background and personal education in their effects upon depressive symptoms that is attenuated with age.

Most relevant, Andersson (2016) examined self-rated health and mortality employing the 1980–2002 waves of the United States (US) General Social Survey (GSS). He found resource multiplication as he investigated interactions between personal years of education and parental SES (an index of years of education and occupational prestige) in their impacts upon self-rated health, and he studied further moderation by cohorts and ages. Among women, cohorts and ages insignificantly moderated this interaction. Among men, concerning prediction of "excellent" health, while more recent cohorts significantly reduced the magnitude of this interaction, more advanced ages marginally significantly (p-value (p) < 0.10; see discussion of p-values in the methods section below) increased the magnitude of this interaction (Andersson, 2016).

The present study adds further nuance to Andersson (2016). To investigate very recent trends, the 2016 and 2018 GSS waves are employed. Parental years of education and occupational prestige are here studied separately, as they might show unique interactions with personal years of education in their health effects (see next section). Further moderation by age is investigated. This study also adds nuance to Andersson (2016) through assessing whether these interactions at least partly occur through mechanisms beyond actualized socioeconomic circumstances.

1.3 | Parental education and occupational prestige as potentially distinct interactants

Since the twentieth century, the US has undergone substantial educational expansion, involving rising rates of high school completion, and university attendance and graduation (Hendricks & Schoellman, 2014). These trends involved growing differences in academic ability between college graduates and non-college graduates, and greater economic returns to education (Hendricks & Schoellman, 2014). They further involved increasing labor market credentialization; stable workforce positions are now unlikely to be achieved without higher education training (Goldrick-Rab & Steinbaum, 2020). As the knowledge economy expanded, educational credentials were increasingly employed to measure workers' knowledge and skills, effectively transferrable from educational settings to the workforce (James, 2012). Accordingly, many jobs that previously did not need a university degree now involve this requirement, especially as governments and businesses increasingly employ complex technologies (Case & Deaton, 2020).

For those who came of age in much earlier times, high extents of education were thus rarer and less required for occupational prestige. Educational credentials might thus have more substantially affected their self-esteem and relative gratification (see Moscatelli et al., 2014) than their life and work circumstances, which more directly affect perceptions of health issues and concerns. Conversely, their occupational prestige might have had greater effects than their education upon these life and employment conditions. These differing effects upon one's parents' lives, and thus one's upbringing, development, and progress through the life course, might uniquely moderate how one's education affects one's self-rated health.

1.4 | Mechanisms beyond respondents' actualized socioeconomic circumstances

Studies of processes of resource substitution and multiplication, based on the current generation's education, in their health impacts have focused on the current generation's accumulated financial resources and occupational status (Andersson, 2016; Ross & Mirowsky, 2006, 2011; Schaan, 2014). However, other plausible mechanisms have been considered, including education's effects upon cognitive abilities and problem-solving skills, tendencies to rationally analyze circumstances and pursue information, resourcefulness, knowledge, mastery, healthy lifestyle habits, social networks, agreeable marital and parental circumstances, and personal characteristics, including confidence, responsibility, purposefulness, generalized trust, persistence, and perspicacity (Andersson, 2016; Ross & Mirowsky, 2006, 2011). An important question is thus whether processes of resource substitution or multiplication, and their moderation by age, remain significant after accounting for respondents' family incomes and occupational prestige.

1.5 | Research questions

This study asks:

1) Do parental SES (education and occupational prestige, studied separately) and respondents' education generate either resource substitution or resource multiplication in their impacts upon respondents' self-rated health?
2) Are these dynamics reduced or amplified at more advanced ages?
3) Do respondents' family incomes and occupational prestige fully account for these interactive relationships?

2 | METHODS

2.1 | Dataset and sample

To study recent trends, this study employed the 2016 and 2018 waves of the GSS, the most recent waves that include this study's central variables. The GSS is a repeated cross-sectional survey directed by the National Opinion Research Center (NORC) of the University of Chicago. It assesses the American population's values, attitudes, opinions, behaviors, and other characteristics. The samples are developed through a multi-stage area probability design and are representative of all community-residing Americans of 18 years of age and older. The first year of the GSS was 1972 and the waves since then have been approximately biennial. While the 2016 wave had a response rate of 61% and included 2867 respondents, the 2018 wave had a response rate of 60% and was based on 2348 respondents (NORC, 2019). NORC (2019) provides further information regarding the GSS and its sampling strategy.

To omit those less likely to have completed their education, those under 25 years of age and/or still in school were excluded. To minimize selection biases based on differential probabilities of mortality, respondents over 80 years of age were excluded. These restrictions resulted in a sample of 4490 respondents. Because of missing data within the self-rated health dependent variables (see analysis below), the final analytical sample was 2995 respondents.

2.2 | Variables

2.2.1 | Dependent variables (outcomes)

This study's two self-rated health dependent variables were based on the question, "Would you say your own health, in general, is excellent, good, fair, or poor?" Andersson (2016) explained that this variable's four categories are more appropriately studied as binary measures. Accordingly, in similarity with Andersson (2016), health was here modeled as 1) excellent (accorded a score of "1") versus good/fair/poor ("0"), and 2) excellent/good ("1") versus fair/poor ("0").

2.2.2 | Independent variables (central predictors)

Respondents' ages, in years, were a central predictor. Dividing this variable by 10 raised the odds ratios' (ORs) (see analysis below) magnitudes through increasing the size of each individual unit.

Two parental-level socioeconomic variables were central predictors. The first was parental years of education, based on whomever of one's parents was the most educated.

The second was parental occupational prestige, based on the threshold method. Raters classified from 1 (lowest prestige) to 9 (highest prestige) occupations represented by the 2010 United States census occupational codes (Hout et al., 2015; NORC, 2019). The percentage of classifications at or above five was then computed for each code. Additionally, the GSS employed statistical procedures to remove effects based on raters' idiosyncrasies (Hout et al., 2015; NORC, 2019). This variable was based on whomever of one's parents had the highest occupational prestige. This variable's range was 5%–97%. To produce more substantial ORs, it was divided by 10. For both parental socioeconomic measures, if a respondent grew up with one parent, these variables were based on this parent.

Andersson (2016) employed an index of parental SES based on years of education and occupational prestige. Concerning the latter, while he employed the GSS′ SEI (socioeconomic index), the present study used an alternative measure. This study adds further nuance through studying these two variables as separate interactants.

The final independent variable was respondents' years of education.

2.2.3 | Control variables

Numerous variables likely impact both the central predictors and outcomes, potentially leading to spurious associations between the two. Many variables were therefore controlled: statistical procedures accounted for the influence of these variables, separating their effects from those of the other predictors.

The respondent-level sociodemographic control variables included gender (reference category (ref.) = men), race (White (ref.), Black, other), marital status (married (ref.), widowed, separated/divorced, never married), and parental status (no children, one child, two children, three or more children (ref.)). Further controlled was respondents' workforce status (working full-time (ref.), working part-time, retired, unemployed or laid off, other). For categorical variables, the reference category is that against which the other categories are compared.

Two further control variables were US region of residence (New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, Pacific) and year of interview (2016, 2018).

Two final control variables permitted assessment of whether the interactive effects identified remained significant after accounting for respondents' actualized socioeconomic conditions, thus implying additional pathways of effect. One was respondents' total family incomes in the previous year, from all sources, before taxes (a broad measure of socioeconomic circumstances). Respondents chose from among 26 categories, the first being "under $1,000", the 13th being "$20,000 to $22,499", and the last being "$170,000 or over". Respondents were assigned the midpoint of their chosen category. Based on the strategy recommended by Bailey et al. (2014), the final open-ended category was assigned a value of $179,998.5. To help correct the right skew (a variable distribution whose right side is marked by a tail), total family income was logarithm transformed, resulting in a closer to normal distribution, which helped meet regression models' assumptions. The other was respondents' occupational prestige, based on the same threshold method as for that of parents. Dividing this variable by 10 produced more substantial ORs.

2.3 | Analysis

Since both outcomes were binary measures, logistic regressions were the most appropriate statistical technique. Predictors (independent and control variables) were accorded ORs, denoting the odds of an outcome taking place in the presence of a specific exposure, contrasted with these odds without the presence of that specific exposure. For a continuous predictor, the OR denotes how the likelihood of an outcome changes with a one-unit rise in this predictor. For a categorical predictor, the OR associated with a particular category represents the likelihood of the outcome taking place given the presence of this particular category as contrasted with this likelihood given the presence of the reference category. While an OR of "1" denotes no effect, an OR of greater than "1" implies a rise in an outcome's likelihood, and an OR of less than "1" indicates a reduction in this likelihood. ORs never take negative values. Furthermore, each OR is associated with a *p*-value (*p*), denoting the likelihood that an observed contrast arose purely by chance. While a *p*-value of less than 0.05 (indicating less than 5%) is commonly considered fully statistically significant, *p*-values of at least 0.05 and less than 0.10 are typically considered marginally statistically significant.

The central results were based on interaction terms. A two-way interaction denotes how the effect of an exposure differs (is moderated) by a second variable. An OR of "1" implies no moderation. While interaction ORs of greater than "1" indicate moderation in the positive direction, interaction ORs of less than "1" denote moderation in the negative direction. This study further employed three-way interaction terms. The corresponding ORs indicate how two variables' interactive effect is adjusted by a third variable, based on the same logic as presented above for the two-way interactions.

This study employed four sets of logistic regressions:

1) Dependent variable: excellent vs. good/fair/poor health

   Parental interactant: years of education

2) Dependent variable: excellent vs. good/fair/poor health

   Parental interactant: occupational prestige

3) Dependent variable: excellent/good vs. fair/poor health

   Parental interactant: years of education

4) Dependent variable: excellent/good versus fair/poor health

   Parental interactant: occupational prestige

All four sets addressed likelihoods of the former of the dependent variable categories. Each set's first model included all independent and control variables, with no interactions. While excluding respondents' total family incomes and occupational prestige, the second through fourth models each individually added to the first model a two-way interaction (second: the respective parental interactant*respondents' education; third: respondents' education*respondents' ages; fourth: the respective parental interactant*respondents' ages). The fifth models included all three two-way interactions and a further three-way interaction (the respective parental interactant*respondents' education*respondents' ages). The sixth models added to the fifth models the other parental socioeconomic measure. The seventh models added to the sixth models respondents' total family incomes and occupational prestige.

This study's continuous interactants were mean centered to improve the interpretability of their main effects (i.e., their non-interactive effects within models including interactions). Mean centering assigns a value of "zero" to the variable's mean and all values are recalibrated based on their original positive or negative distance from the mean. Each interactant's main effect thereby denotes its OR at the additional interactant's (or interactants') original mean(s), instead of its original value of zero, which is of less analytical value.

While perhaps involving some limitations in statistical power, an analytical sample of 2995 respondents is adequate for this study's analyses, which include three-way interactions.

Two tables of predicted ORs were developed via predictive margins, brought about through Stata's "margins" command, one for each of the statistically significant three-way interactions (see results below). These tables display the magnitudes of these statistically significant interactive effects. Based on the fifth models (see above) of the relevant sets of logistic regressions, they present the ORs of respondents' years of education as predictors of the respective extents of health according to intersections with the remaining two interactants (without any variables mean-centered). The additional predictors were held at their means.

Missing data were addressed through multiple imputation using chained equations, which imputes (or "fills in") missing data through non-missing values of the other variables. The final results were based on statistical amalgamations across the 10 imputed datasets created. While self-rated health had the most missing data (33.47%), total family incomes had the second highest amount (7.77%). While self-rated health was employed in the multiple imputation process, respondents originally missing data within this variable were excluded from the final analyses, avoiding creating spurious associations between the predictors and the outcomes through the multiple imputation process itself. Since almost the entirety of the missing data within self-rated health were based on the one-third of respondents who were *randomly* not asked the corresponding question during their GSS interviews (NORC, 2019), this exclusion did not cause any substantial biases. The final analytical sample was 2995 respondents.

The logistic regressions were weighted through the GSS' WTSSALL standard sampling weight; "To account for the random selection of an adult respondent, this weight is the household-level weight (W2) multiplied by the number of adults in the household" (NORC, 2019, p. 3187). GSS respondents whose characteristics made them less likely to have been included in the GSS sample were thus weighted more heavily in the development of results, thereby correcting for sampling biases.

Standard errors (denoting statistical accuracy vis-à-vis the true population values; lower standard errors imply more accuracy) were adjusted for clustering by region of the US. This addresses likely correlations between the characteristics of respondents within the same region. All analyses employed the Stata 17 statistical software package.

3 | RESULTS

Table 1 presents the descriptive statistics. While 22.20% of respondents reported excellent health, 28.52% reported fair/poor health. The average respondent had almost 14 years of education (13.90). The average respondent's most educated parent had 12.51 years of education. The mean parental occupational prestige was 52.42. The average respondent was 50 years old (50.01).

The majority of respondents were women (55.94%) and Whites (73.52%). Almost half of the sample were married (46.67%). The modal category of parental status was three or more children (31.91%). Just over half of respondents were working full-time (50.79%). The average yearly total family income was $68,386 (log transformed: 10.75). Respondents' mean occupational prestige was 49.98. The modal region was the South Atlantic (20.79%). The majority of respondents were interviewed in 2016 (55.67%).

Tables 2 (dependent variable: excellent vs. good/fair/poor health; parent-level interactant: years of education) and 4 (dependent variable: excellent/good vs. fair/poor health; parent-level interactant: occupational prestige) present the results of the two sets of logistic regressions that produced substantial significant interactions (the remaining two sets of regression results are available upon request). Tables 3 and 5 present the magnitudes of these significant interactions (predicted ORs, developed through predictive margins) within Tables 2 and 4, respectively. The elaboration on these results is focused on the interactants and the additional socioeconomic measures.

Concerning Table 2, model 1 (no interaction terms) shows that personal years of education (OR: 1.104, p-value (p) < 0.001), parental occupational prestige (OR: 1.032, p < 0.05), and logged total family income (OR: 1.423, p < 0.001) significantly positively predicted excellent health. Model 2 reveals that the benefits of personal years of education were significantly accentuated by parental years of education (two-way interaction OR: 1.012, p < 0.05) (resource multiplication). Models 3 and 4 reveal no significant interactions. Model 5 shows a significant three-way interaction between respondents' education, parental education, and respondents' ages (three-way interaction OR: 1.006, p < 0.05), implying that the resource multiplication identified within model 2 was accentuated by age. These two significant interaction terms remained statistically significant after accounting for parental occupational prestige (model 6), and respondents' total family incomes and occupational prestige (model 7).

Based on model 5, Table 3 includes three subdivisions: the 10th percentile (30 years), the median (50 years), and the 90th percentile (71 years) in respondents' ages. Each subdivision displays the ORs for respondents' years of education at the 10th percentile (8 years), the median (12 years), and the 90th percentile (17 years) in parents' years of education. Further included are standard errors (exponentiated form) and 95% confidence intervals (the range of ORs within which there is a 95% certainty the true population OR is located). More advanced age is shown to accentuate how parental years of education magnify the positive association between respondents' years of education and excellent health. For 30-year-old respondents, there was a slight drop in the ORs between 8 years (1.140) and 17 years (1.129) of parental education. For 71-year-old respondents, there was a substantial rise in the ORs between 8 years (1.098) and 17 years (1.352) of parental education.

Regarding Table 4, model 8 (no interaction terms) shows that more personal years of education (OR: 1.108, p < 0.001) and higher logged total family income (OR: 1.369, p < 0.001) raised the probability of excellent/good

TABLE 1 Descriptive statistics (N = 2995)

Variable	Mean/proportion (%)	Standard deviation
Dependent variable		
Self-rated health		
Poor	6.09%	
Fair	22.43%	
Good	49.28%	
Excellent	22.20%	
Independent variables		
Personal years of education	13.90	3.02
Parents' years of education	12.51	3.86
Parents' occupational prestige	52.42	24.90
Respondents' ages	50.01	15.10
Control variables		
Gender		
Men	44.06%	
Women	55.94%	
Race		
White	73.52%	
Black	16.61%	
Other	9.88%	
Marital status		
Married	46.67%	
Widowed	7.30%	
Separated or divorced	23.02%	
Never married	23.02%	
Parental status		
No children	23.23%	
One child	16.16%	
Two children	28.70%	
Three of more children	31.91%	
Labor force status		
Working full-time	50.79%	
Working part-time	10.89%	
Retired	18.93%	
Unemployed, laid off	4.46%	
Other	14.94%	
Total family income	$68,386.13	$50,947.54
Logarithm of total family income	10.75	1.06
Personal occupational prestige	49.98	25.78
Region of the United States		

(Continues)

TABLE 1 (Continued)

Variable	Mean/proportion (%)	Standard deviation
New England	5.83%	
Middle Atlantic	10.24%	
East North Central	16.87%	
West North Central	6.03%	
South Atlantic	20.79%	
East South Central	7.10%	
West South Central	11.32%	
Mountain	8.00%	
Pacific	13.83%	
Year of interview		
2016	55.67%	
2018	44.33%	

health. Model 9 includes a marginally significant positive interaction between respondent-level years of education and parental-level occupational prestige (two-way interaction OR: 1.015, $p < 0.10$). However, this interaction reached full statistical significance in models 12 through 14 (model 12: two-way interaction OR: 1.016, $p < 0.05$), suggesting resource multiplication among respondents of average age. Model 12 shows a significant three-way interaction between respondent-level years of education, parental-level occupational prestige, and respondents' ages (three-way interaction OR: 1.008, $p < 0.05$), implying accentuation of this resource multiplication by age. This three-way interaction remained statistically significant after controlling for parental-level years of education (model 13), and respondent-level total family incomes and occupational prestige (model 14).

Based on model 12, Table 5 is subdivided by respondents' ages identically to Table 3. Each sub-table shows the ORs for respondents' years of education according to three values of parents' occupational prestige: the 10th percentile (18), the median (51), and the 90th percentile (88). This table includes standard errors (exponentiated form) and 95% confidence intervals. At more advanced ages, parental occupational prestige further intensified how respondent-level years of education raised the probability of excellent/good health. For 30-year-old respondents, the ORs only slightly rose between a parental occupational prestige of 18 (1.103) and of 88 (1.112). For 71-year-old respondents, the ORs substantially rose between a parental occupational prestige of 18 (1.089) and of 88 (1.361).

Notably, within the two sets of logistic regressions not here presented, the statistically insignificant ORs for the two-way interactions between personal years of education and parental SES, and the three-way interactions between personal years of education, parental SES, and respondents' ages, were all above "1", and thus in the positive direction.

4 | CONCLUSION

While this study's analytical sample of 2995 respondents was adequate for its interaction terms, it implied some limitations in statistical power. The results are thus conservative and only the most potent interactive effects reached statistical significance and are here discussed.

Concerning the first research question, resource multiplication between respondents' education and parental SES was found. Plausibly, with many health outcomes, resource substitution often occurs as resources are applied with versatility to overcome the adverse consequences to living conditions resulting from lack of other resources. These living conditions and their stressors might more directly impact health. However, especially pertinent to

TABLE 2 Logistic regressions of excellent health, parent-level education as interactant, odds ratios

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Mean-centered personal years of education	1.104***	1.164***	1.152***	1.152***	1.173***	1.169***	1.126***
	(0.027)	(0.022)	(0.021)	(0.020)	(0.026)	(0.026)	(0.035)
Mean-centered parental years of education	0.979	0.992	0.996	0.996	0.992	0.985	0.978
	(0.021)	(0.017)	(0.019)	(0.019)	(0.017)	(0.018)	(0.019)
Mean-centered parental occupational prestige/10	1.032*					1.028*	1.022
	(0.014)					(0.013)	(0.014)
Mean-centered age/10	0.973	0.983	0.986	0.986	0.937	0.938	0.925*
	(0.050)	(0.048)	(0.062)	(0.053)	(0.037)	(0.037)	(0.036)
M-C personal years of education * M-C parental years of education		1.012*			1.010**	1.010*	1.009*
		(0.005)			(0.004)	(0.004)	(0.004)
M-C personal years of education * M-C Age/10			0.999		1.017	1.017	1.016
			(0.020)		(0.014)	(0.014)	(0.015)
M-C parental years of education * M-C Age/10				1.000	1.000	1.000	0.999
				(0.011)	(0.009)	(0.009)	(0.010)
M-C personal years of education * M-C parental years of education * M-C Age/10					1.006*	1.006*	1.006*
					(0.003)	(0.003)	(0.003)
Women (ref. men)	1.001	0.990	0.984	0.984	0.990	0.989	1.007
	(0.140)	(0.127)	(0.129)	(0.132)	(0.130)	(0.131)	(0.140)
Black (ref. White)	1.075	0.999	0.979	0.979	0.990	1.000	1.078
	(0.095)	(0.081)	(0.083)	(0.083)	(0.081)	(0.081)	(0.093)
Other	1.230	1.102	1.181	1.181	1.089	1.087	1.133
	(0.279)	(0.241)	(0.291)	(0.290)	(0.238)	(0.236)	(0.234)
Widowed (ref. married)	1.066	0.896	0.901	0.902	0.918	0.916	1.088
	(0.267)	(0.206)	(0.205)	(0.205)	(0.220)	(0.218)	(0.281)

(Continues)

TABLE 2 (Continued)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Separated or divorced	0.938	0.770*	0.751*	0.751*	0.763*	0.766*	0.948
	(0.136)	(0.094)	(0.091)	(0.093)	(0.097)	(0.097)	(0.138)
Never married	0.955	0.748*	0.737*	0.736*	0.739*	0.747*	0.952
	(0.122)	(0.105)	(0.103)	(0.100)	(0.104)	(0.107)	(0.124)
No children (ref. three or more children)	1.043	1.031	1.034	1.035	1.052	1.047	1.060
	(0.210)	(0.213)	(0.211)	(0.206)	(0.213)	(0.211)	(0.216)
One child	0.926	0.988	0.954	0.954	0.968	0.966	0.941
	(0.071)	(0.070)	(0.076)	(0.073)	(0.071)	(0.071)	(0.068)
Two children	0.998	1.053	1.024	1.024	1.056	1.059	1.028
	(0.129)	(0.132)	(0.138)	(0.139)	(0.137)	(0.137)	(0.124)
Working part-time (ref. working full-time)	1.054	0.927	0.902	0.901	0.922	0.923	1.072
	(0.200)	(0.157)	(0.153)	(0.156)	(0.156)	(0.159)	(0.195)
Retired	0.962	0.864	0.842	0.842	0.861	0.863	0.984
	(0.252)	(0.227)	(0.226)	(0.239)	(0.232)	(0.230)	(0.255)
Unemployed, laid off	0.704	0.566	0.561	0.561	0.559	0.560	0.699
	(0.268)	(0.198)	(0.192)	(0.195)	(0.195)	(0.197)	(0.267)
Other	0.925	0.764	0.772	0.772	0.755	0.757	0.900
	(0.235)	(0.186)	(0.183)	(0.182)	(0.174)	(0.175)	(0.223)
Logarithm of total family income	1.423***						1.416***
	(0.128)						(0.132)
Personal occupational prestige/10	1.026						1.026
	(0.034)						(0.035)
Constant	0.005***	0.268***	0.299***	0.299***	0.276***	0.275***	0.005***
	(0.005)	(0.025)	(0.029)	(0.030)	(0.028)	(0.028)	(0.005)
Observations	2995	2995	2995	2995	2995	2995	2995

Note: Further controlled, but not displayed, were region of residence within the United States (significant effects) and year of interview (no significant effects). Robust standard errors (exponentiated form) in parentheses.

Two-tailed tests ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

TABLE 3 Odds ratios for respondents' years of education as predictors of excellent health, based on intersections with parents' years of education and respondents' ages (*N* = 2995)

Parents' years of education	Odds ratio	Standard error (exponentiated form)	95% confidence interval
Respondents aged 30 years (10th percentile)			
8 (10th percentile)	1.140	0.047	1.052–1.235
12 (median)	1.135	0.036	1.067–1.207
17 (90th percentile)	1.129	0.050	1.035–1.232
Respondents aged 50 years (median)			
8 (10th percentile)	1.119	0.021	1.078–1.162
12 (median)	1.168	0.025	1.121–1.218
17 (90th percentile)	1.233	0.043	1.152–1.320
Respondents aged 71 years (90th percentile)			
8 (10th percentile)	1.098	0.039	1.023–1.178
12 (median)	1.204	0.045	1.120–1.296
17 (90th percentile)	1.352	0.080	1.204–1.519

self-rated health, more of one resource might increase optimism, confidence, self-esteem, self-efficacy, and hope. These important aspects of health and well-being that are especially implicated in self-rated health might raise the subjective benefits of other resources, producing resource multiplication.

The results differed between the two outcomes. Andersson (2016) explained that self-ratings of "excellent" health are qualitatively distinct from variations among the less-than-excellent self-ratings. Beyond absence of perceived health concerns and limitations, those reporting "excellent" health are often characterized by vivaciousness and vigor (Andersson, 2016). While regarding excellent health, only interactions with parental years of education revealed significant resource multiplication, concerning excellent/good health, this was revealed only within interactions with parental occupational prestige. Regarding the second research question, both of these processes of resource multiplication were accentuated by age.

Concerning the former process of resource multiplication, well-educated parents often hold higher ambitions concerning their children's education (Spera et al., 2009). Beyond the satisfaction (closely related to "excellent" health) garnered through meeting their parents' expectations, more educated children of well-educated parents were likely raised in contexts within which high levels of education were sources of distinction and pride, especially since they were rarer among past generations (Hendricks & Schoellman, 2014). In fact, overall self-assessments are based more on one's unique features than one's typical characteristics (Blanton & Christie, 2003). This plausibly led these children to view their education as a strong marker of their worth, creating relative gratification (see Moscatelli et al., 2014) that inclined them to report "excellent" health. Social comparisons' effects upon life satisfaction, subjective well-being, and quality of life (Sirgy, 2012) (especially implicated in "excellent" health, see Clark, 2013) support this explanation. Furthermore, high self-esteem and self-worth likely increase the self-efficacy and mastery that might especially help maintain perceptions of "excellent" health despite stressors (see Pearlin, 1989; Pearlin et al., 1981). At more advanced ages, this relative gratification and self-efficacy might have accumulated (i.e., cumulative advantage [Leopold, 2016; Ross & Mirowsky, 2011; Ross & Wu, 1996]). Furthermore, the general vitality declines that come with age might accentuate how these sources of self-esteem and pride maintain self-ratings of "excellent" health.

However, the more direct effects of this interaction between respondent- and parental-level education upon life circumstances, and thus perceptions of health issues and concerns, might be less strong, especially since the parental generation was marked by less strong connections between education and occupational prestige (see Goldrick-Rab & Steinbaum, 2020; James, 2012). This might explain why in the prediction of excellent/good health, this positive

TABLE 4 Logistic regressions of excellent/good health, parent-level occupational prestige as interactant, odds ratios

Variables	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Mean-centered personal years of education	1.108***	1.154***	1.146***	1.149***	1.156***	1.163***	1.116***
	(0.021)	(0.021)	(0.021)	(0.020)	(0.023)	(0.025)	(0.024)
Mean-centered parental years of education	0.981					0.986	0.981
	(0.020)					(0.020)	(0.019)
Mean-centered parental occupational prestige/10	1.004	1.005	1.002	1.001	1.004	1.012	1.006
	(0.029)	(0.031)	(0.029)	(0.030)	(0.031)	(0.030)	(0.030)
Mean-centered age/10	0.987	1.000	1.009	1.001	0.987	0.981	0.969
	(0.064)	(0.067)	(0.068)	(0.068)	(0.060)	(0.060)	(0.055)
M-C personal years of education * M-C parental occupational prestige/10		1.015			1.016*	1.016*	1.015*
		(0.008)			(0.007)	(0.007)	(0.007)
M-C personal years of education * M-C age/10			1.008		1.023	1.023	1.020
			(0.018)		(0.015)	(0.015)	(0.016)
M-C parental occupational Prestige/10 * M-C age/10				0.985	0.980	0.980	0.980
				(0.011)	(0.011)	(0.011)	(0.012)
M-C personal years of education * M-C parental occupational Prestige/10 * M-C age/10					1.008*	1.008*	1.007*
					(0.003)	(0.003)	(0.003)
Women (ref. men)	1.220**	1.205**	1.210**	1.207**	1.211**	1.208**	1.224**
	(0.080)	(0.074)	(0.076)	(0.074)	(0.080)	(0.078)	(0.087)
Black (ref. White)	1.030	0.946	0.942	0.936	0.936	0.935	1.023
	(0.119)	(0.105)	(0.105)	(0.102)	(0.101)	(0.101)	(0.113)
Other	0.991	0.945	0.981	0.979	0.936	0.911	0.950
	(0.156)	(0.144)	(0.146)	(0.150)	(0.142)	(0.151)	(0.147)
Widowed (ref. married)	0.733	0.619*	0.615*	0.612*	0.625*	0.624*	0.742
	(0.141)	(0.124)	(0.133)	(0.126)	(0.127)	(0.126)	(0.137)
Separated or divorced	0.750**	0.605***	0.596***	0.599***	0.605***	0.606***	0.755*
	(0.082)	(0.079)	(0.077)	(0.079)	(0.080)	(0.080)	(0.083)

TABLE 4 (Continued)

Variables	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Never married	0.689*	0.523***	0.522***	0.531***	0.528***	0.530***	0.692*
	(0.105)	(0.074)	(0.076)	(0.076)	(0.076)	(0.077)	(0.104)
No children (ref. three or more children)	1.012	1.020	1.026	1.001	1.009	1.016	1.004
	(0.121)	(0.120)	(0.118)	(0.116)	(0.115)	(0.114)	(0.113)
One child	1.010	1.054	1.045	1.044	1.039	1.045	1.005
	(0.152)	(0.165)	(0.165)	(0.165)	(0.163)	(0.160)	(0.151)
Two children	0.968	1.011	0.999	1.001	1.014	1.020	0.982
	(0.116)	(0.106)	(0.108)	(0.109)	(0.109)	(0.111)	(0.115)
Working part-time (ref. working full-time)	0.884	0.736	0.726	0.726	0.730	0.732	0.883
	(0.159)	(0.129)	(0.126)	(0.127)	(0.130)	(0.130)	(0.164)
Retired	0.583**	0.512***	0.498***	0.502***	0.504***	0.503***	0.586**
	(0.110)	(0.096)	(0.096)	(0.098)	(0.097)	(0.096)	(0.112)
Unemployed, laid off	0.552*	0.425**	0.420**	0.427**	0.423**	0.424**	0.550*
	(0.161)	(0.134)	(0.129)	(0.133)	(0.130)	(0.131)	(0.157)
Other	0.506***	0.414***	0.414***	0.413***	0.411***	0.410***	0.501***
	(0.052)	(0.050)	(0.049)	(0.050)	(0.051)	(0.051)	(0.052)
Logarithm of total family income	1.369***						1.362***
	(0.084)						(0.083)
Personal occupational prestige/10	1.038						1.036
	(0.030)						(0.030)
Constant	0.103***	4.264***	4.477***	4.447***	4.282***	4.260***	0.106***
	(0.064)	(0.296)	(0.377)	(0.388)	(0.325)	(0.328)	(0.066)
Observations	2995	2995	2995	2995	2995	2995	2995

Note: Further controlled, but not displayed, were region of residence within the United States (significant effects) and year of interview (no significant effects). Robust standard errors (exponentiated form) in parentheses.

Two-tailed tests ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

TABLE 5 Odds ratios for respondents' years of education as predictors of excellent/good health, based on intersections with parents' occupational prestige and respondents' ages (*N* = 2995)

Parents' occupational prestige (%)	Odds ratio	Standard error (exponentiated form)	95% confidence interval
Respondents aged 30 years (10th percentile)			
18 (10th percentile)	1.103	0.048	1.013–1.201
51 (median)	1.107	0.049	1.015–1.208
88 (90th percentile)	1.112	0.067	0.988–1.251
Respondents aged 50 years (median)			
18 (10th percentile)	1.096	0.025	1.049–1.146
51 (median)	1.156	0.021	1.116–1.198
88 (90th percentile)	1.227	0.044	1.144–1.316
Respondents aged 71 years (90th percentile)			
18 (10th percentile)	1.089	0.046	1.003–1.182
51 (median)	1.210	0.029	1.155–1.268
88 (90th percentile)	1.361	0.059	1.249–1.483

interaction fell short of statistical significance. The especially potent interactive effect is in the prediction of "excellent" health.

However, parental occupational prestige significantly magnified how respondent-level years of education increased the probability of excellent/good health. Parental occupational prestige might have a more direct effect upon one's childhood environment than parental education. The former might imbue children with the middle-class attitudes, values, patterns of behavior, and worldviews that are favored within Western educational establishments, increasing the personal and socioeconomic benefits they derive from education (Andersson, 2016). Furthermore, these family environments might encourage healthy lifestyle habits that are further promoted by education (Andersson, 2016; Bauldry, 2014). Additionally, children from families of higher occupational prestige profit from familial resources, including connections with high-status persons and positive reputations, that generate further possibilities to profit personally and socioeconomically from their educational experiences subsequent to their schooling (Bauldry, 2014). These advantageous circumstances reduce exposure to stressors and perceptions of health issues and concerns, decreasing reports of fair/poor health. These advantages might have accumulated at more advanced ages (i.e., cumulative advantage [Leopold, 2016; Ross & Mirowsky, 2011; Ross & Wu, 1996]).

However, these advantages are less directly associated with the high amounts of vivaciousness and vigor that often lead to reports of "excellent" health (Andersson, 2016). This might explain why in the prediction of "excellent" health, this positive interaction did not reach statistical significance. This interaction especially potently predicted excellent/good health.

Regarding the third research question, the interactive effects here discussed remained statistically significant after controlling for the other parental SES measure and respondents' total family incomes and occupational prestige. This suggests mechanisms beyond respondents' actualized socioeconomic conditions and unique effects of the measures of parental SES. Thus highlighted are the self-esteem and feelings of distinction engendered by having more education while coming from a well-educated family. Furthermore, being well-educated while coming from a family of higher occupational prestige might prevent perceptions of health issues and concerns through the education-based development of cognitive and problem-solving abilities, optimism, perseverance, healthy lifestyle habits, and valuable personal connections providing social and emotional benefits (Andersson, 2016; Ross & Mirowsky, 2006, 2011).

This study adds nuance to Andersson (2016) through investigating parents' education and occupational prestige as separate interactants, and through finding that the processes of resource multiplication revealed and their accentuation with age occur partly through pathways beyond respondents' actualized socioeconomic circumstances.

Plausibly because of the greater specificity of its measures of parental SES, this study found stronger evidence of resource multiplication accentuated by age than Andersson (2016) did.

4.1 | Policy implications

Beyond the advantages for educational achievement of coming from a socioeconomically advantaged family (Broer et al., 2019), the value of education for self-rated health is accentuated by those familial advantages. Furthermore, this effect is magnified by age. These findings raise concerns regarding less educated older persons coming from less advantaged backgrounds. Policies and programs should help equalize social circumstances early in the life course, to produce more salubrious trajectories with advancing age. They should also promote more just educational systems and labor markets that equitably reward workers and labor market enterers for their educational achievements.

4.2 | Limitations and future research paths

This study does not address variability in the ages at which respondents' parents obtained their educations, came of age, and entered the workforce. Nonetheless, especially given the average respondent age of 50 years, the parents of this study's sample generally came of age in earlier times during which high levels of education were rarer (Hendricks & Schoellman, 2014) and less required for occupational prestige (Goldrick-Rab & Steinbaum, 2020; James, 2012). Future scholarship should further consider the ages of respondents' parents.

Future research should employ more waves of data and formal age-period-cohort techniques to assess the separate roles played by these three temporal dimensions in the patterns here revealed. While examining cohort effects was beyond this study's scope, Andersson (2016) showed the value of concurrently examining age and cohort trends.

The unique interactive health effects found for parental-level occupational prestige and years of education encourage studies of interactions between additional measures of (dis)advantage, at both the respondent and parental levels. These include more direct assessments of income and wealth, home ownership, neighborhood quality, gender, race/ethnicity, immigrant status, disabilities, mastery, optimism, effective coping and problem-solving, as well as closeness, support, and socioeconomic resources within one's social network, etc.

AUTHOR CONTRIBUTIONS

The corresponding and sole author made all contributions.

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CONFLICT OF INTEREST

The author declares that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

DATA AVAILABILITY STATEMENT

The United States General Social Survey data are available online at http://gss.norc.org/.

ETHIC STATEMENT

No ethical approval was required as this is a secondary analysis of data gathered by a third party.

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