Health inequality among older adults in the US, 1996-2022

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Abstract

This study is part of the NBER International Social Security project and contributes to its exploration of the relationship between pension reforms and inequality in retirement income and health by examining changes in health inequality in the US during a period when Social Security reforms were being phased in. We draw on the RAND longitudinal file of the Health and Retirement Study to examine health inequality for older adults over the period 1996 through 2022. We conceptualize "health inequality" as the relationship between five different health indicators and retirement income, and trace how this relationship has developed over time. We find some evidence for increasing health inequality for women, but no such pattern for men. We also find that both functional and comprehensive health display a steady rise in inequality over time, while the inequality in diagnosed conditions, mental and cognitive health remained stable.

Acknowledgements

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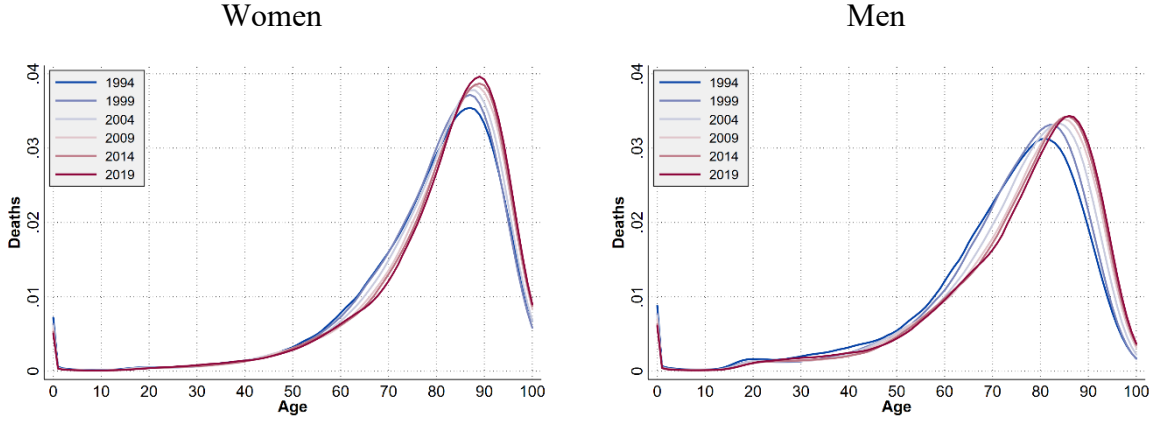
1. Introduction

While the U.S. has not experienced Social Security reforms of the magnitude or frequency seen in other countries (Börsch-Supan and Coile, 2021), the 1983 Social Security Amendment was a substantial reform that raised the full retirement age from 65 to 67. Phased in gradually for the 1938 through 1960 birth cohorts, this reform reduced lifetime Social Security income by delaying eligibility for full benefits and imposing a larger permanent reduction in benefits for claiming before the full retirement age.

This reform has had markedly different implications across the income distribution. While the average retirement age rose by around 2 years over the period of the reform phase-in (Munnell, 2025), the widening gap in labor force participation by education at older ages (Coile, 2019) indicates that high-income workers were more able to counteract the reform's effect on benefits by working longer. Social Security accounts for a far greater share of retirement income for lower-income households (Congressional Research Service, 2025), making changes in benefits more consequential for retirement security among this group.

A related question of interest is whether the reform has contributed to rising health inequality among retirees. A first superficial view of mortality shows no retrenchment in life expectancy gains over the period that the 1983 reform was being phased in. Figure 1 shows the distribution of the age at death according to period life tables and its change between 1994 and 2019, drawn from the Social Security Administration (Social Security Administration, 2024). The distribution shifts to the right over years with much more substantial differences for men.

Figure 1. Mortality



Source. Social Security Administration (2024).
Note. Distribution according to period life tables.

While this figure does not address whether health has been changing differentially across the income distribution, other work indicates that there has been rising inequality in life

expectancy at older ages during the phase-in of the reform. According to a National Academy of Sciences study (2015), life expectancy at age 50 for men in the top two income quintiles rose by seven to eight years between the 1930 and 1960 birth cohorts, while for men in the bottom two income quintiles, there was little to no change.

Whether there has been a growing gap between those at the top and bottom of the income distribution in other measures of health is less well understood. Lower-income and less advantaged workers are disproportionately in jobs with strenuous physical or functional demands (Maestas et al., 2023; Garcia et al., 2021; Hayward et al., 1989; Filer and Petri, 1988; Neumark and McLaughlin, 2012), raising the possibility that longer work lives could have negative consequences for their health.[1] As a result, the distribution of health among retirees could have become more unequal in the wake of this policy reform.

This study examines changes in health inequality in the US during the period 1996 to 2022, corresponding to the period when the 1983 Social Security reform was being phased in. We draw on the RAND HRS longitudinal file (RAND Center for the Study of Aging, 2025), which harmonizes data from the Health and Retirement Study (University of Michigan, 2025), to assess whether the observed patterns persist when richer health measures and more refined empirical methods are employed. We conceptualize "health inequality" as the relationship between various health indicators and retirement income, and trace how this relationship has developed across cohorts and over time. We consider five health measures:

(1) Functional health, based on the number of functional limitations,

(2) Diagnosed health, based on the number of conditions that a doctor has ever told a respondent,

(3) Comprehensive health, based on a health deficiency index with 37 items,

(4) Mental health, based on the CES-D depression scale,

(5) Cognitive health, based on three cognition tests (immediate and delayed word recall, counting backwards in increments of seven).

The construction of these measures is described in detail below. Income is expressed in deciles of equivalized total household income from all sources. We present the results as *health–income gradients*, plotting each health indicator against income deciles, and examine whether the slope of these gradients has become steeper over the period of U.S. pension reforms.

[1] For a recent review of the literature on the health consequences of retirement – from which one may draw inferences about the health consequences of work – see Garrouste and Perdrix (2021).

We begin this paper by providing a short summary of these reforms, with a focus on reforms that may have directly affected the retirees' health.

2. The US social insurance system

2.1. Pension reforms potentially affecting health inequality

Social Security is a virtually universal benefit, available to workers with forty quarters of covered employment and to their dependent or surviving spouses and children. The benefit amount is based on the highest 35 years of wage-indexed earnings, with a progressive benefit formula that generates a higher replacement rate for workers with lower average earnings. Retired worker benefits may be claimed starting at age 62, and there is an actuarial adjustment for delaying claiming beyond that age. There is a Retirement Earnings Test (RET) before the Full Retirement Age (FRA) that reduces benefits against earnings; workers are subsequently credited for lost benefits with a recomputed actuarial adjustment when they reach the FRA. Benefits are a real annuity, indexed for inflation.

The 1983 Social Security Amendments set in motion a gradual increase in the full retirement age (FRA). The FRA was 65 for individuals born by 1937, rose by 2 months a year for those born in 1938 through 1942, was 66 for those born in 1943 through 1954, rose by 2 months a year for those born in 1955 through 1959, and reached 67 for those born in 1960 and later.[2] The increase in the FRA had the effect of reducing the monthly benefit amount for those claiming before the FRA. An individual with a FRA of 65 who claims at age 62 would receive 80% of the benefit for which they would be eligible at the FRA, while an individual with a FRA of 67 who claims at age 62 would receive 70% of the FRA benefit. The FRA increase resulted in a decrease in lifetime pension income for affected cohorts.

The 1983 Amendments also gradually increased the actuarial adjustment for delaying claiming beyond the FRA from 3 percent per year of delay for those born in 1924 and earlier to 8 percent per year for those born in 1943 and later. This change strengthened the incentive to delay claiming beyond the FRA, increasing retirement income. A law passed in the year 2000 eliminated the RET for work beyond the FRA. This has been shown to have accelerated claiming at the FRA, reducing retirement income (Gruber and Orszag, 2003). The net change

[2] To give a sense of the FRAs experienced by our sample of individuals age 65 to 79 in the years 1996-2022, the average FRA in our sample (giving equal weight to each cohort in the sample that year) is 65 in 1996, 65.23 in 2008, and 66.07 in 2022.

in claiming in the wake of these reforms has been an increase in the share of individuals claiming benefits after the FRA – this rose by 5 percentage points for men and 9 percentage points for women between the 1923 and 1948 cohorts (Munnell and Chen, 2015).

Unlike in some other countries, there are few public programs besides Social Security that offer a pathway to retirement. Workers who become disabled and who both meet recent work requirements and pass a medical screening are eligible to receive disability insurance benefits calculated in a manner similar to Social Security without any reduction for early claiming. The prevalence of disability insurance benefit receipt rose over the past several decades but has declined since 2013 (Social Security Administration, 2019). Unemployment benefits are available on a short-term basis only and are not a major pathway to retirement (Coile and Levine, 2007)

2.2. Reforms of the public health insurance system

Changes to public health insurance programs have the potential to affect health outcomes and health inequality. While there have been some meaningful changes in recent years, it is not necessarily clear what effect we would expect these changes to have on health inequality.

Since 1965, Medicare has provided health insurance for adults aged 65 as well as disability benefit recipients. Coverage is virtually universal for older adults, with 98.9 percent of the population covered in 2022 (Lindstrom et al., 2024). Medicare recipients choose between the original program, which allows access to all providers that accept Medicare patients, and Medicare Advantage, a private plan alternative that includes benefits like lower co-payments and coverage of vision, hearing, and dental care while directing beneficiaries to in-network providers. The share of beneficiaries choosing Medicare Advantage has risen rapidly since this option was first introduced in the late 1990s, reaching nearly half the Medicare population in 2022 (Ochieng et al., 2025). There is little evidence of differential health outcomes for patients enrolled in the traditional program vs. Medicare advantage, though comparisons are complicated by the difficulty of fully accounting for selection bias (Agarwal et al., 2021).

Medicare did not offer coverage for prescription drugs until 2006, when a new Part D benefit went into effect. Traditional Medicare beneficiaries gained access to stand-alone plans and Medicare Advantage plans added drug coverage. Prior to the introduction of Part D, 75 percent of the Medicare population had access to prescription drugs through a private plan or another government plan (CBO, 2003). In 2021-22, 83 percent of beneficiaries age 65 and above had access to drug coverage (Cohen and Mykyta, 2024). There is some evidence that

the introduction of Medicare Part D improved health outcomes (Afendulis et al., 2011; Diebold, 2018).

Some Medicare beneficiaries are dually eligible for Medicaid, a government insurance program for low-income individuals. The number of dual enrollees age 65 and above rose from 5.3 million in 2006 to 7.7 million in 2019, representing 15 percent of all aged Medicare beneficiaries at the end of this period (Center for Medicare and Medicaid Services, 2020).

3. Data and Sample

This study uses data from the RAND HRS longitudinal file based on HRS data, which provides detailed microdata on socioeconomic status, family structure, labor market history, and health outcomes. Health measures in HRS are comprehensive, encompassing both self-reported and objective indicators, which enable us to link individual health status with household composition and income. For our analysis, we use data from 1992 through 2022, the most recent period available in the RAND HRS longitudinal file.

3.1. Variable Description

Income. Our analysis focuses on differences in health outcomes across the income distribution. Income is calculated at the household level and adjusted for household size using the OECD equivalence scale, assigning a weight of one to the first adult and 0.5 to each additional household member. Each household's total income combines all reported sources, including earnings, pensions, and capital income. All members of a household are therefore assigned the same income group. This choice reflects the assumption that household members share income and consumption, making total equivalized household income a more accurate indicator of material well-being than individual income alone.

To minimize endogeneity from income changes that may follow deteriorating health or the transition into retirement, we classify individuals into income groups based on the first survey wave in which they are observed. This "initial-wave" classification helps ensure that later health outcomes do not influence income ranking. Income groups are defined relative to the distribution of equivalized household income in the wave a respondent enters the survey.

Health. We construct five measures of health, which we interpret as *health capacities*, meaning that higher scores indicate better health.

(1) Functional health: Functional health is based on self-reported limitations in activities of daily living (ADLs) and instrumental activities of daily living (IADLs) (Lawton and Brody, 1969). We consider six ADLs – walking across a room, dressing, bathing or showering, eating, getting in and out of bed, and using the toilet – and five IADLs – using a phone, managing money, taking medications, grocery shopping, and preparing hot meals. For each item, respondents report whether they have difficulties with the activity. The functional health score is the total number of activities (out of eleven) the respondent can perform without any difficulty, so that higher values correspond to better functional capacity. A full list of the included variables can be found in Appendix Table A1.

(2) Diagnosed health: This measure reflects the burden of chronic disease, based on eight self-reported doctor diagnoses: high blood pressure, diabetes, cancer, lung disease, heart problems, stroke, psychological problems, and arthritis. For each respondent, we count the number of conditions ever reported, regardless of whether they are still present at the time of the interview. The diagnosed health score is constructed as 8 minus the number of reported conditions, so that higher values denote better health. A full list of the included variables can be found in Appendix Table A2.

(3) Comprehensive health: To summarize overall health, we construct a comprehensive *health deficiency index* following Abeliansky, Erel, and Strulik (2020) and Börsch-Supan et al. (2021). The index aggregates a wide range of 36 health deficits, encompassing chronic diseases, functional limitations, and physical activity indicators (a full list is provided in Appendix Table A3). Each deficit is coded as present or absent, and the index is calculated as the proportion of observed deficits relative to the total number of non-missing health indicators. To construct a share that increases with better health, we subtract the proportion of present health deficits from one.

(4) Mental health: Mental health is measured using the 8-item Center for Epidemiologic Studies Depression (CES-D) scale (Radloff 1977) available in the HRS. The CES-D captures depressive symptoms such as sadness, loneliness, and sleep disturbances. Each affirmative response counts as one symptom, resulting in a score ranging from 0 to 8, where higher values indicate a greater number of symptoms. To maintain consistent scaling across our measures, we reverse the CES-D score by computing 8 minus the CES-D score, so that higher scores represent better mental health.

(5) Cognitive health: Cognitive functioning is assessed using three standard tasks: immediate word recall, delayed word recall, and serial 7s subtraction. Respondents are asked to recall as many words as possible from a list of ten both immediately and after a brief delay, and to successively subtract seven from 100 up to five times. To balance the heavier weight of memory tasks, we assign double weight to the serial 7s score. The total cognitive health score is the sum of these components, ranging from 0 to 30, where higher scores indicate better cognitive performance.

3.2. Sample

Our sample includes individuals aged 65 to 79. Respondents are included if information is available on at least one of the health indicators described above and on income. The final sample comprises 25,696 individuals, corresponding to 106,864 person-wave observations. Table 1 reports summary statistics across three income groups, where each respondent is counted once, at the wave when their age was closest to 70.

Overall, the sample contains slightly more women than men, with the gender imbalance most pronounced in the lowest income group. In the top income tercile, the gender distribution is roughly even. Marital status also varies substantially across income groups; having a spouse is considerably more common among respondents with higher incomes (note that the division into income groups is based on equivalized household income). The number of children declines with income, while years of education increase monotonically across the income distribution.

Turning to economic variables, the difference in equivalized household income between the bottom and middle terciles is approximately $31,000, and the gap between the middle and top terciles is about $45,000. Wealth differences are even more pronounced: the average wealth is roughly $150,000 higher in the middle income group than in the lowest income group, and about $500,000 higher in the top income group than in the middle tercile.

Finally, we compare average values of the five health indicators across income groups. All measures are coded such that higher values indicate better health. Across all outcomes, individuals in the highest income tercile consistently exhibit better health.

Table 1. Summary Statistics

	Total	Income Tercile 1	Income Tercile 2	Income Tercile 3
Demographics				
% Women	55.7	61.5	54.5	50.4
% Married	62.8	47.1	66.8	75.8
Number of children	3.2	3.5	3.2	2.9
Years of education	12.1	10.1	12.3	14.3
Income & Wealth				
Equivalized Household Income (in $)	56,748	23,575	54,759	100,388
Equivalized Household Wealth (in $)	373,427	140,904	289,481	786,823
Health				
Functional health	10.3	9.9	10.5	10.7
Diagnosed health	5.9	5.7	6.0	6.1
Comprehensive health	0.80	0.74	0.81	0.84
Mental health	6.6	6.0	6.7	7.0
Cognitive health	17.0	14.3	17.1	19.3
# Individuals	25,696			
# Observations	106,864			

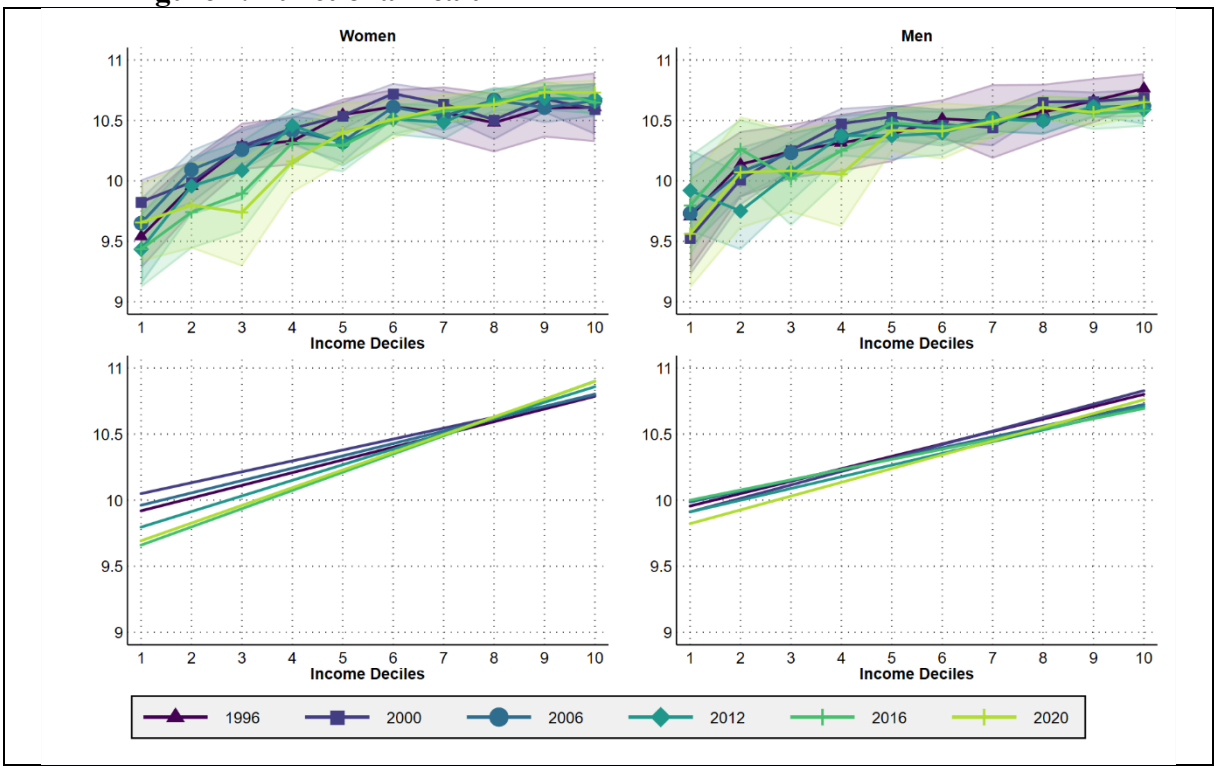
Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1).
Note. We use household equivalized income, which is calculated by dividing the total household income by 1 for the first person in the household, plus 0.5 for every additional household member. We adjust for purchasing power parity; values are reported in 2022$. Respondents stay in the same income group over time, based on their position in the wave they entered HRS.

4. The income-health gradient by income decile

We begin by constructing health–income gradients by plotting the five health measures against income deciles and examining whether these gradients became steeper during the period of U.S. pension reforms.

Figures 2 and 3 illustrate functional health across income deciles and survey waves. The left panels show women, and the right panels show men. In each panel, the upper part displays the raw data with 95% confidence intervals, while the lower part presents linear regression lines for each wave. To reduce visual clutter, Figure 2 includes six selected waves (1996, 2000, 2006, 2012, 2016, and 2020), whereas Figure 3 presents results for all waves.

Figure 2. Functional health based on the number of functional limitations

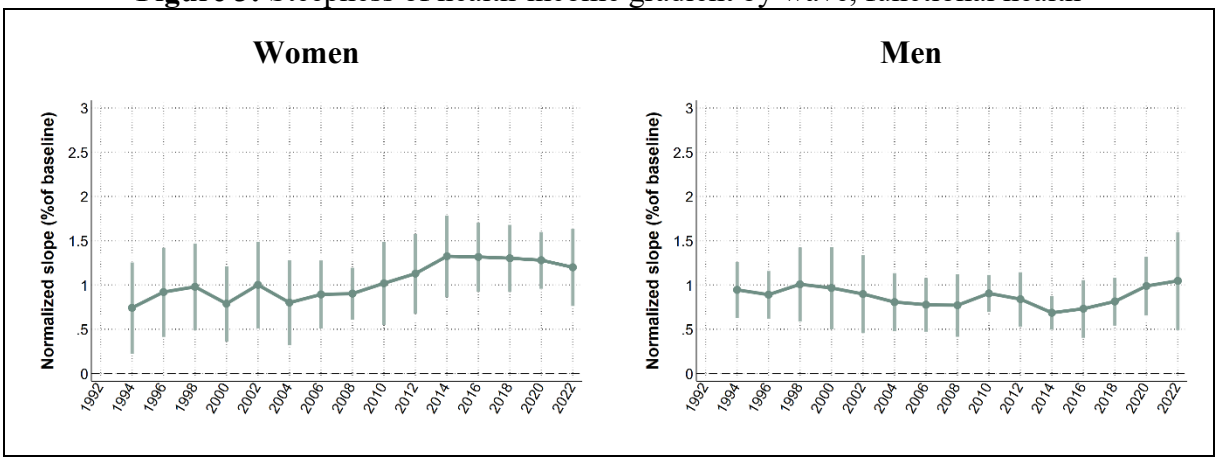


Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. In the upper panel, we plot the mean health status by income group over waves with the shaded areas depicting 95%-confidence bands around these means. In the lower panel, we plot a linear regression of the health status on income deciles and call this the *health gradient*.

For women, functional health in the higher income deciles remains largely stable over time. In contrast, a modest decline is visible in the lower income deciles (around the third and fourth) in the 2016 and 2020 waves compared with earlier years. The fitted regression lines suggest that health among lower-income women initially improved (the 2000 line lies above that for 1996) and then declined steadily in subsequent years. For men, there is no comparable trend; changes across waves appear minimal.

Figure 3 plots the slopes of the fitted lines across all waves, along with their confidence intervals. To make the gradients comparable over time, the slopes are normalized by dividing by the mean value of the health variable in the most recent wave available for all health indicators (2020). This normalization uses a fixed denominator across waves to ensure that changes in the slope reflect shifts in the income–health gradient itself rather than differences in the absolute level of health. While the slope increased somewhat for women in later years, the gradient remains relatively flat for men. Statistical tests indicate that, for men, none of the gradients differ significantly across waves. For women, the slopes from 2014 onward are statistically different from 1994 at the 10% level, but this difference disappears when 1996 is used as the reference year. The pairwise tests are reported in Appendix Tables A4 through A8.

Figure 3: Steepness of health-income gradient by wave, functional health

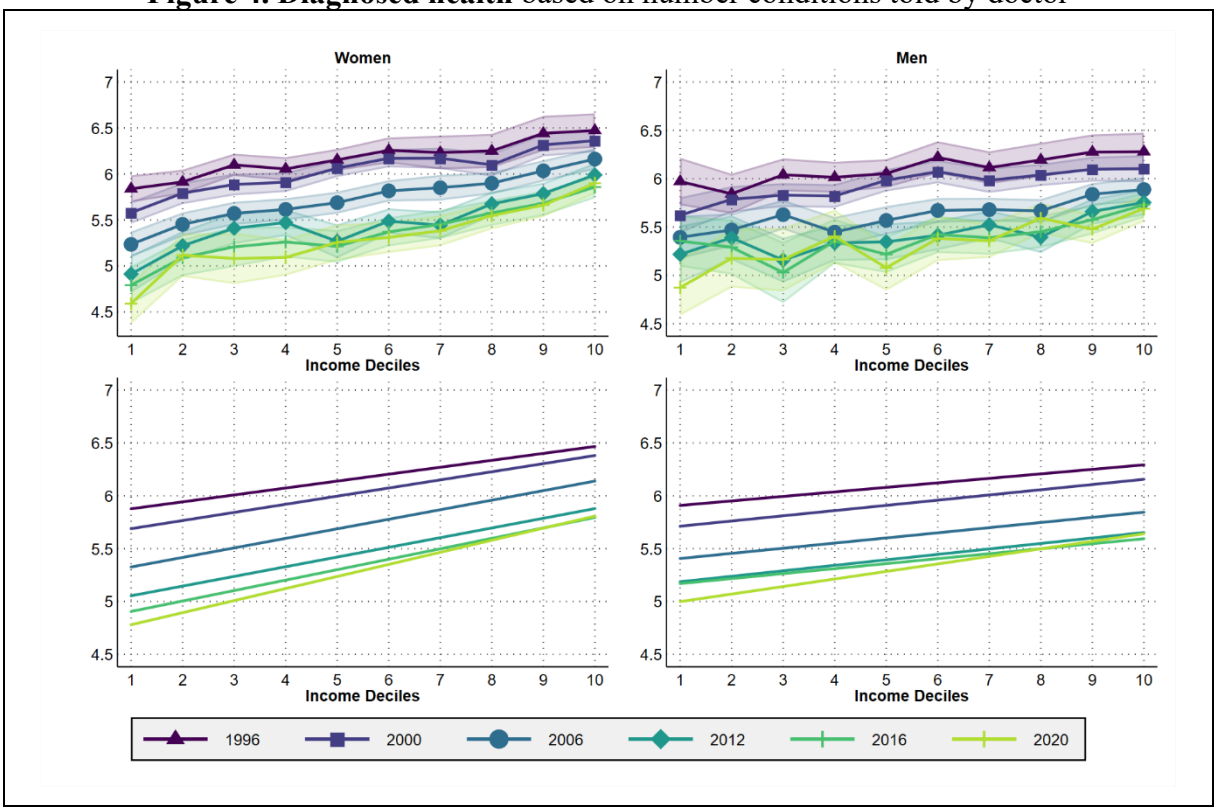


Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. We depict the slopes and the 95% confidence intervals over the years, which we retrieved from a linear regression of the health status on income deciles. The slopes are normalized by dividing them by the mean of the health outcome in Wave 9.

Figures 4 and 5 display diagnosed health, measured by the number of conditions a doctor has identified. Diagnosed health in 1996 appears substantially better than in later years, showing a steady decline over time. This pattern largely reflects the construction of the measure, since once a condition is reported, it remains counted for all subsequent waves, though the sample of persons age 65 to 79 is also being refreshed over time as new survey respondents age into this group while others age out.

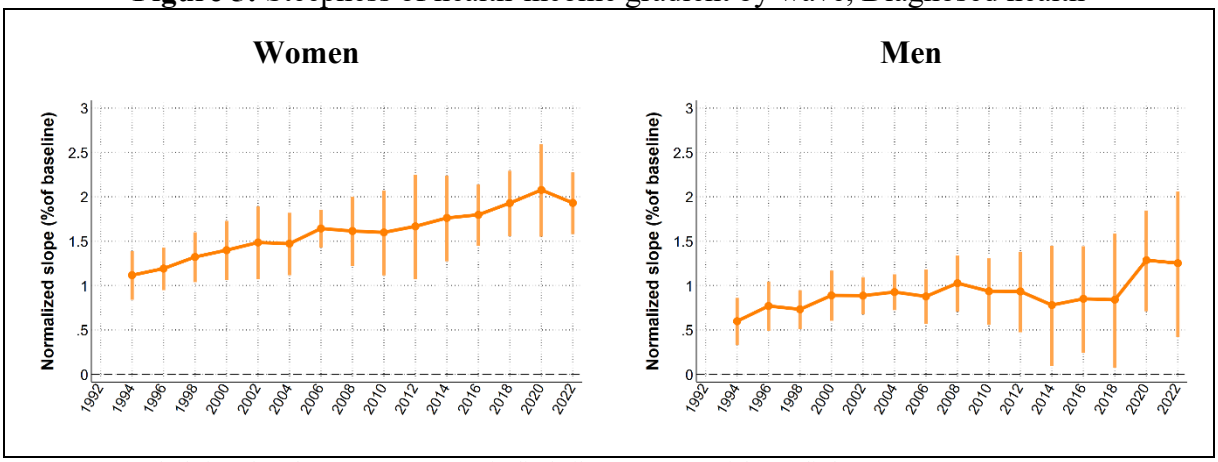
The gradient shown in Figure 5, which pools all waves, becomes steeper for women over time, indicating increasing health inequality by income. The confidence intervals for the most recent waves (2018, 2020, and 2022) do not overlap with those for the early waves (1994 and 1996). Statistical tests confirm that these later slopes differ significantly from the early ones at the 1% level. For men, the gradient remains relatively flat overall, with only the two most recent waves showing a slightly steeper slope. However, wide confidence intervals prevent a consistent pattern of statistically significant differences from emerging.

Figure 4. Diagnosed health based on number conditions told by doctor



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. In the upper panel, we plot the mean health status by income group over waves with the shaded areas depicting 95%-confidence bands around these means. In the lower panel, we plot a linear regression of the health status on income deciles and call this the *health gradient*.

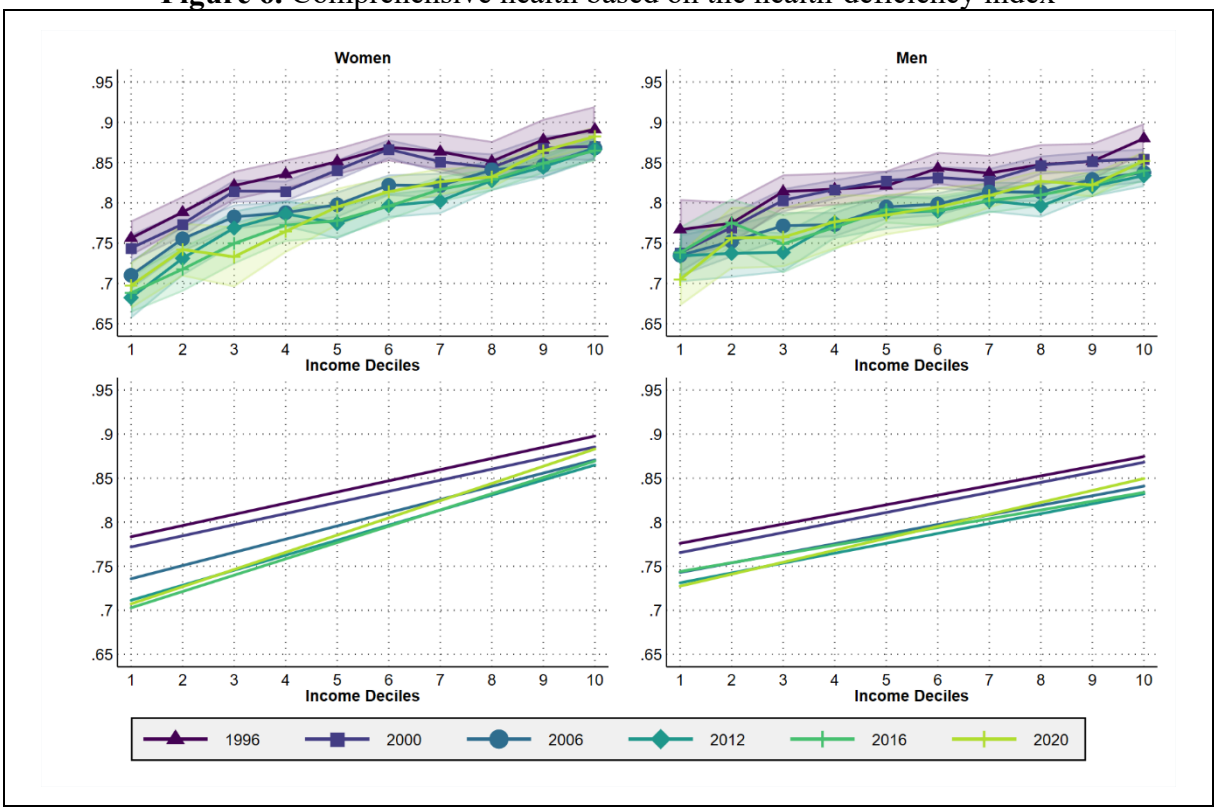
Figure 5: Steepness of health-income gradient by wave, Diagnosed health



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. We depict the slopes and the 95% confidence intervals over the years, which we retrieved from a linear regression of the health status on income deciles. The slopes are normalized by dividing them by the mean of the health outcome in Wave 9.

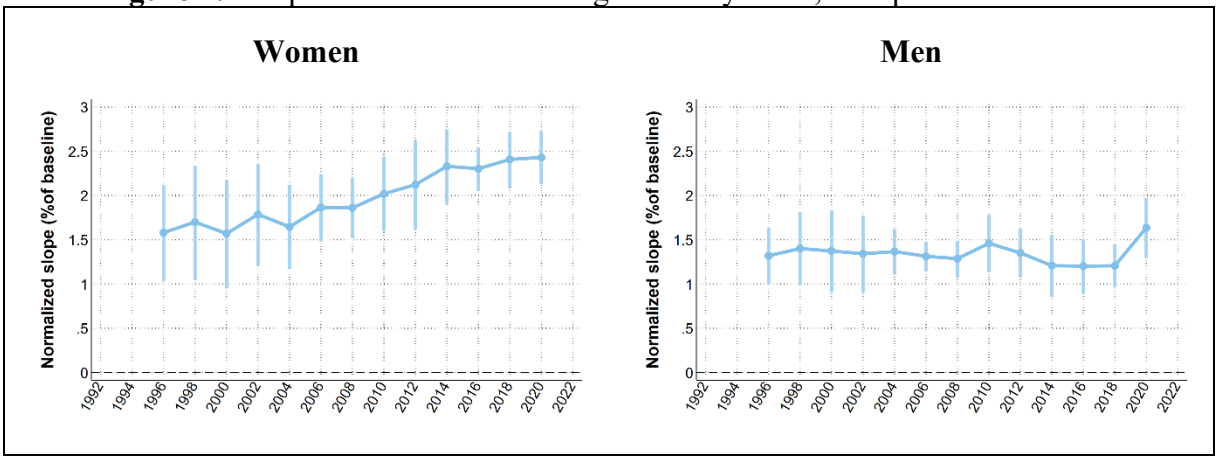
For comprehensive health (Figures 6 and 7), we find better health in 1996 and 2000 compared with later years for both women and men. Among women, the gradient increases over time (see the left panel of Figure 7), with statistical tests indicating that the 2018 and 2020 waves differ significantly from almost all waves prior to 2010, at least at the 5% level. For men, we again find no significant change in the gradient over time.

Figure 6. Comprehensive health based on the health-deficiency index



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. In the upper panel, we plot the mean health status by income group over waves with the shaded areas depicting 95%-confidence bands around these means. In the lower panel, we plot a linear regression of the health status on income deciles and call this the *health gradient*.

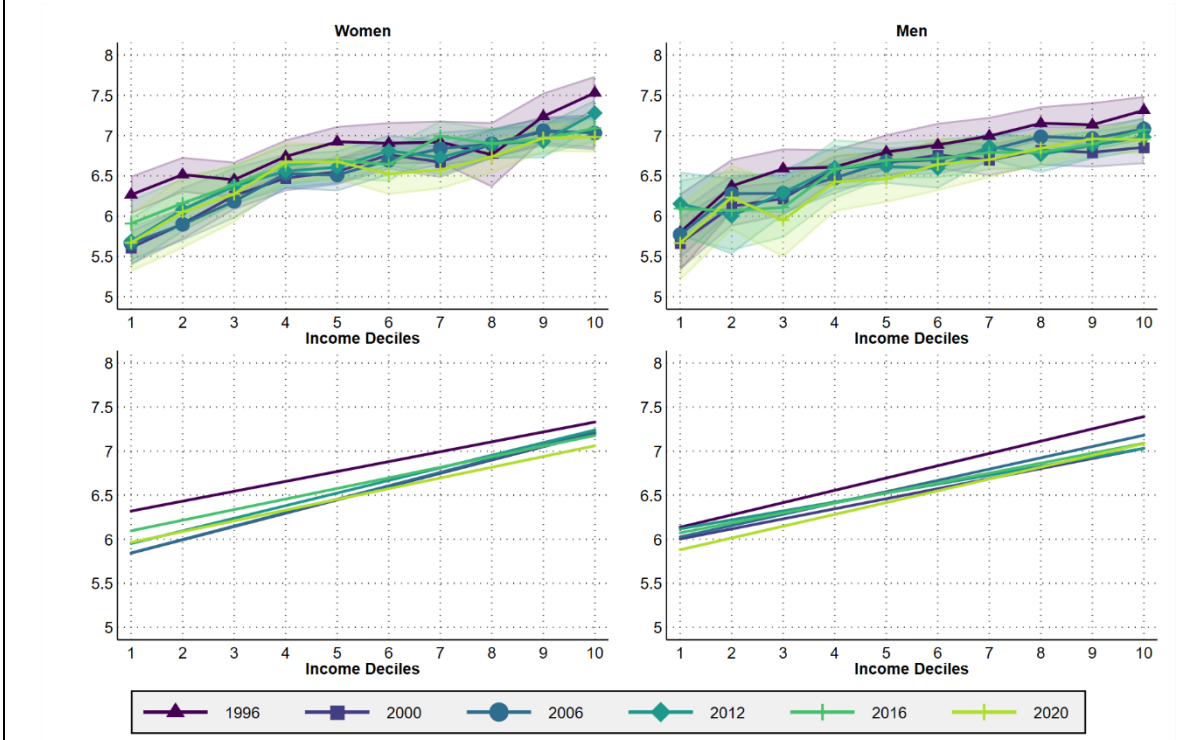
Figure 7: Steepness of health-income gradient by wave, Comprehensive health



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. We depict the slopes and the 95% confidence intervals over the years, which we retrieved from a linear regression of the health status on income deciles. The slopes are normalized by dividing them by the mean of the health outcome in Wave 9.

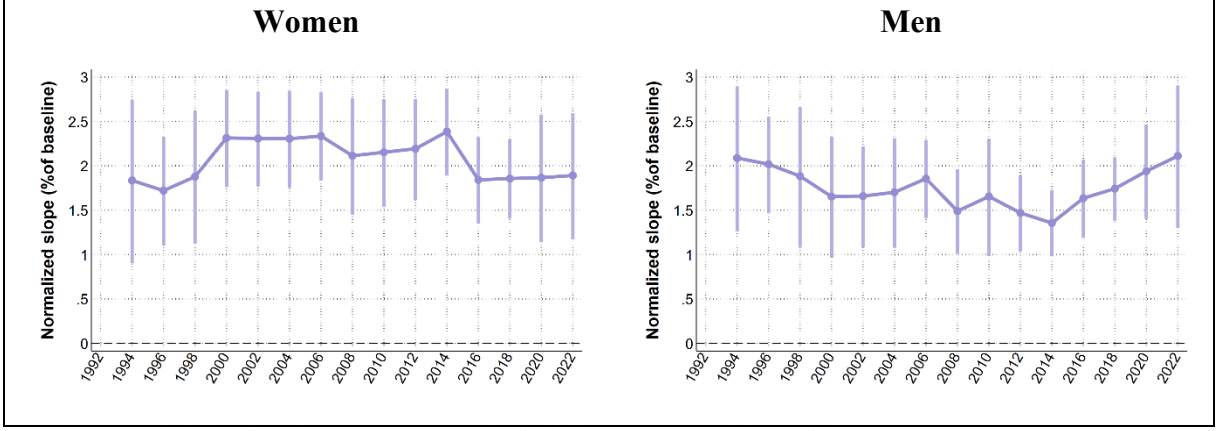
Figures 8 and 9 show results for mental health, measured by the CES-D scale. There is no discernible increase in the slope of the health–income gradient. The same holds for cognitive health, as illustrated in Figures 10 and 11.

Figure 8. Mental health based on CESD scale



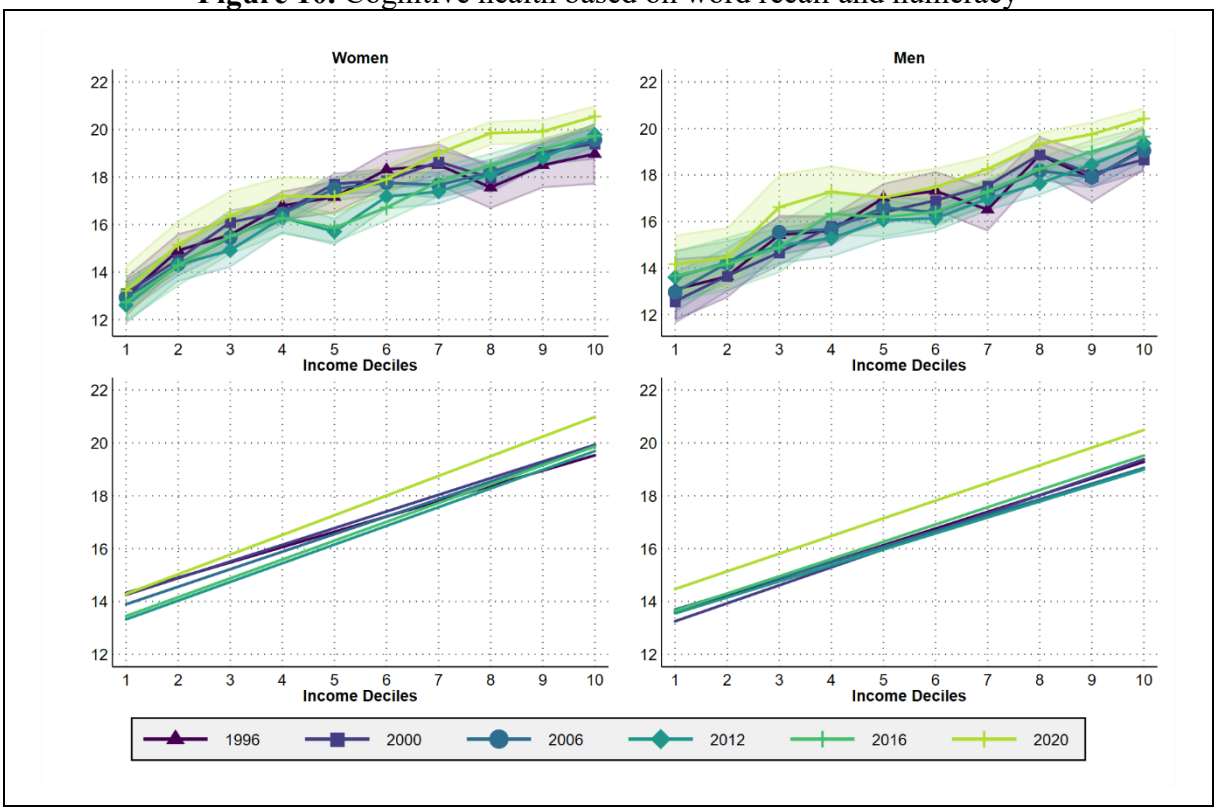
Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. In the upper panel, we plot the mean health status by income group over waves with the shaded areas depicting 95%-confidence bands around these means. In the lower panel, we plot a linear regression of the health status on income deciles and call this the *health gradient*.

Figure 9: Steepness of health-income gradient by wave, Mental health



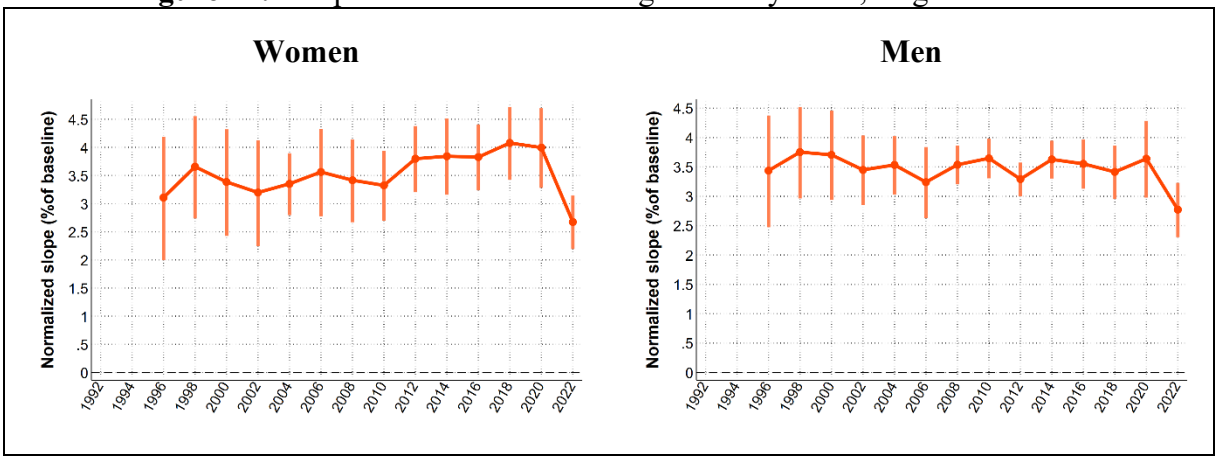
Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. We depict the slopes and the 95% confidence intervals over the years, which we retrieved from a linear regression of the health status on income deciles. The slopes are normalized by dividing them by the mean of the health outcome in Wave 9.

Figure 10. Cognitive health based on word recall and numeracy



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. In the upper panel, we plot the mean health status by income group over waves with the shaded areas depicting 95%-confidence bands around these means. In the lower panel, we plot a linear regression of the health status on income deciles and call this the *health gradient*.

Figure 11: Steepness of health-income gradient by wave, Cognitive health



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. We depict the slopes and the 95% confidence intervals over the years, which we retrieved from a linear regression of the health status on income deciles. The slopes are normalized by dividing them by the mean of the health outcome in Wave 9.

To summarize, we find evidence of significant increases in physical health inequality over time for women, whether physical health is measured by functional limitations, diagnosed conditions, or a comprehensive index of health deficits. By contrast, we find no increase in inequality over time in mental or cognitive health for women, nor any significant increase in health inequality over time for men.

5. Number of years needed for poorer individuals to catch up with the health of richer individuals

The previous section demonstrated that substantial differences in health levels persist across income groups for all five measures for both men and women. The purpose of this section is to express these level differences in a way that is comparable across health dimensions and interpretable in real-world terms.

Figure 12 illustrates this approach using functional health as an example. We define *very good functional health* as a score above the 66th percentile of the overall distribution among individuals aged 65–89 in Wave 1.[3] We pool women and men in the definition of good health and in the analysis of differences across income groups in order to increase sample size within the income deciles. The left panel shows how the proportion of respondents with very good functional health declines with age, while the right panel depicts how this proportion evolves over time for the second, fifth, and ninth income deciles.

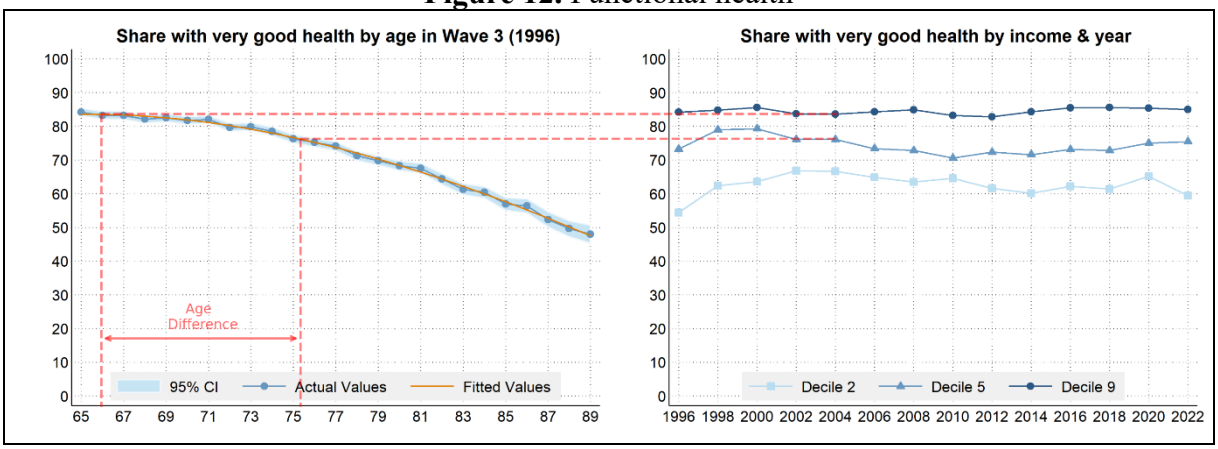
We then translate the income-related differences shown in the right panel into an equivalent age-based metric derived from the left panel. In other words, we calculate how many years earlier an individual in a lower income decile reaches the same level of functional health as someone in a higher decile. We refer to this difference as the *catch-up time* – the number of additional years a lower-income individual would need to close the health gap with a wealthier counterpart.

In our example, the share of individuals with very good functional health in Wave 7 (2004) is roughly eight percentage points higher in the ninth income decile than in the fifth (right panel of Figure 12). This difference corresponds to an age gap of about nine years in the probability of being in very good health (left panel).

We repeat this calculation for the differences between the second and fifth deciles, as well as for the larger gap between the second and ninth deciles, and apply the same approach to the remaining four health measures. Across Figures 12 through 16, health declines consistently with age, and the expected ordering by income emerges clearly: individuals in higher income deciles maintain better health throughout. The difference is almost always more pronounced between the ninth and fifth deciles than between the fifth and second.

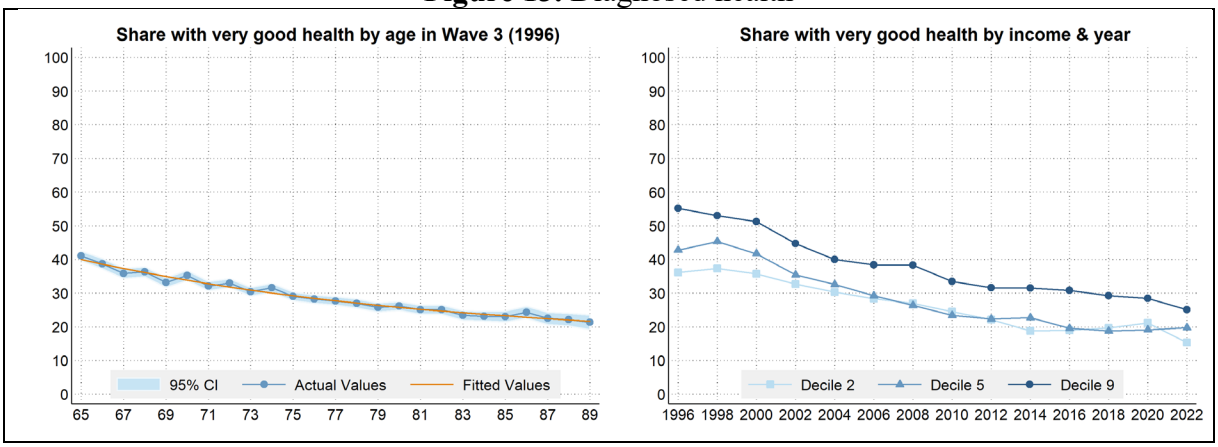
[3] To ensure that the health distribution captures a sufficiently long period of aging for comparison, the reference population for defining health changes over age is expanded to include individuals up to age 89. Note that for the main empirical analysis, our sample is restricted to individuals aged 65–79.

Figure 12. Functional health



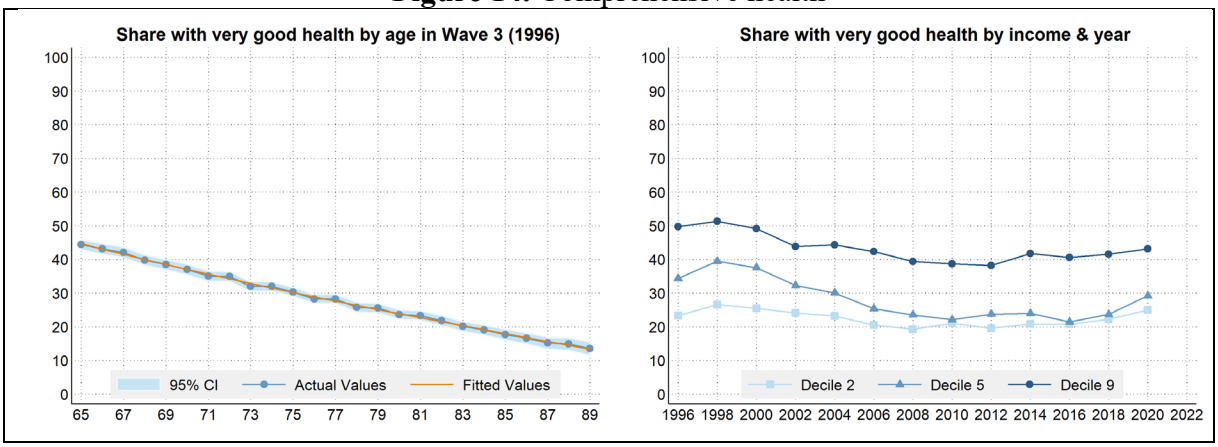
Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The left panel shows the share of individuals in very good health (defined as the top 34% of the distribution) in 1996, by age. The right panel shows the share of respondents who are in very good health by three income groups over the years. How our measure *catch-up time* is translated from the difference being in good share by income decile in years of aging is depicted as an example in 2004 for the difference between Decile 9 and Decile 2 by the red lines.

Figure 13. Diagnosed health



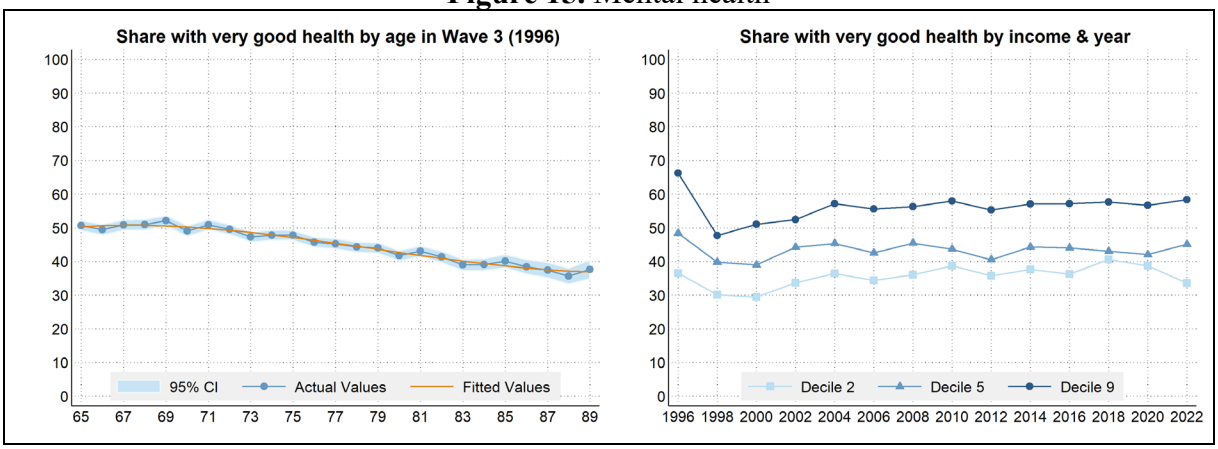
Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The left panel shows the share of individuals in very good health (defined as the top 34% of the distribution) in 1996, by age. The right panel shows the share of respondents who are in very good health by three income groups over the years.

Figure 14. Comprehensive health



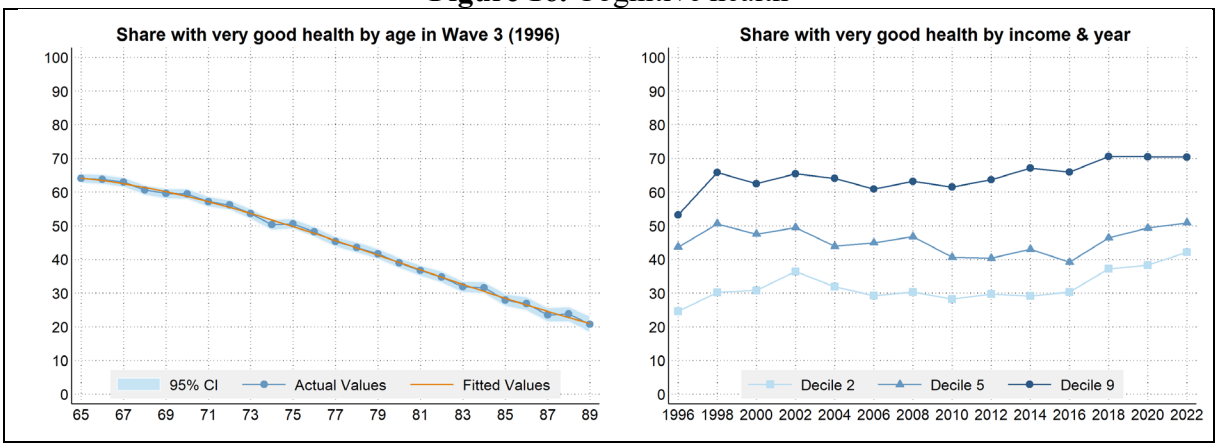
Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The left panel shows the share of individuals in very good health (defined as the top 34% of the distribution) in 1996, by age. The right panel shows the share of respondents who are in very good health by three income groups over the years.

Figure 15. Mental health



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The left panel shows the share of individuals in very good health (defined as the top 34% of the distribution) in 1996, by age. The right panel shows the share of respondents who are in very good health by three income groups over the years.

Figure 16. Cognitive health



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The left panel shows the share of individuals in very good health (defined as the top 34% of the distribution) in 1996, by age. The right panel shows the share of respondents who are in very good health by three income groups over the years.

We summarize these findings in Table 2, which reports differences between the second, fifth, and ninth income deciles in terms of *years to catch up* across all five health measures. The analysis focuses on the years 1996 (Wave 3), 2008 (Wave 9), and 2020 (Wave 15). In addition to results for *very good health* (the top 34% of the health distribution), we also report estimates for *good health*, corresponding to the top 67%.

Some of the differences are strikingly large. When the age–health gradient is relatively flat – as in the case of mental health – even modest gaps in the means translate into substantial differences in catch-up time. The evolution of these differences over time, summarized in Table 3, shows a mixed pattern. Overall, the results do not indicate a systematic widening of health inequalities. On average, the gap between the second and fifth income deciles narrows, while the gap between the ninth and fifth deciles widens somewhat.

Table 2. Catch-up years

a) % in very good health (>66% percentile in 1996)

	1996			2008			2020		
	2nd to 5th	5th to 9th	2nd to 9th	2nd to 5th	5th to 9th	2nd to 9th	2nd to 5th	5th to 9th	2nd to 9th
Functional health	9.1	12.3	21.3	4.9	12.5	17.4	5.4	11.2	16.6
Diagnosed health	3.0	0.0	3.0	-1.0	12.8	11.8	0.0	14.0	14.0
Comprehensive health	8.5	6.9	15.4	3.6	11.9	15.5	3.3	9.8	13.2
Mental health	16.6	8.4	25.0	13.0	12.0	25.0	4.2	15.7	19.9
Cognitive health	9.0	4.7	13.7	7.6	10.1	17.8	5.1	10.2	15.3

b) % in good health (>33% percentile in 1996)

	1996			2008			2020		
	2nd to 5th	5th to 9th	2nd to 9th	2nd to 5th	5th to 9th	2nd to 9th	2nd to 5th	5th to 9th	2nd to 9th
Functional health	9.1	12.3	21.3	4.9	12.5	17.4	5.4	11.2	16.6
Diagnosed health	2.6	0.0	2.6	1.9	13.8	15.7	0.0	13.8	13.8
Comprehensive health	14.8	4.3	19.0	5.9	13.7	19.6	5.4	12.8	18.3
Mental health	25.0	0.0	25.0	13.3	10.2	23.5	4.1	16.1	20.1
Cognitive health	12.6	10.2	22.8	9.8	11.1	20.9	8.2	11.6	19.8

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. This table displays the catch-up years for the second, fifth, and ninth income deciles in 1996, 2008, and 2012, respectively. It can be read as follows: For respondents in 1996, the difference in health between the second and the fifth income deciles would amount to 5.7 years of aging. We find a large share of individuals with very good functional health such that the percentiles for a) and b) coincide.

Table 3. Change in catch-up years from 1996 to 2020

	Very good health			Good health		
	2nd to 5th	5th to 9th	2nd to 9th	2nd to 5th	5th to 9th	2nd to 9th
Functional health	-3.6	-1.1	-4.7	-3.6	-1.1	-4.7
Diagnosed health	-3.0	14.0	11.0	-2.6	13.8	11.2
Comprehensive health	-5.3	2.9	-2.4	-9.4	8.6	-0.8
Mental health	-12.5	7.4	-5.1	-20.9	16.1	-4.9
Cognitive health	-3.9	5.6	1.6	-4.4	1.4	-2.9
Average	-5.7	5.7	0.1	-8.2	7.8	-0.4

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. This table summarizes how catch-up years changed between 1996 and 2020 for very good health (being in the top 34% distribution relative to the Wave 3 distribution) and good health (being in the top 67% distribution).

The results in Table 2 suggest that health of those at the bottom of the income distribution (2nd decile) is substantially worse than the health of those at the top of the distribution (9th decile). More specifically, the difference in the probability of being in good or very good health at the bottom vs. the top of the distribution is roughly equivalent to the decline in health associated with 15 to 20 years of aging. In Table 3, we see that the gap between the 2nd and 9th deciles is not widening over the period 1996 to 2020. However, the gap between the 5th and 9th deciles

is widening (while the gap between the 2nd and 5th decile narrows), suggesting a relative decline in health for those in the middle of the income distribution.

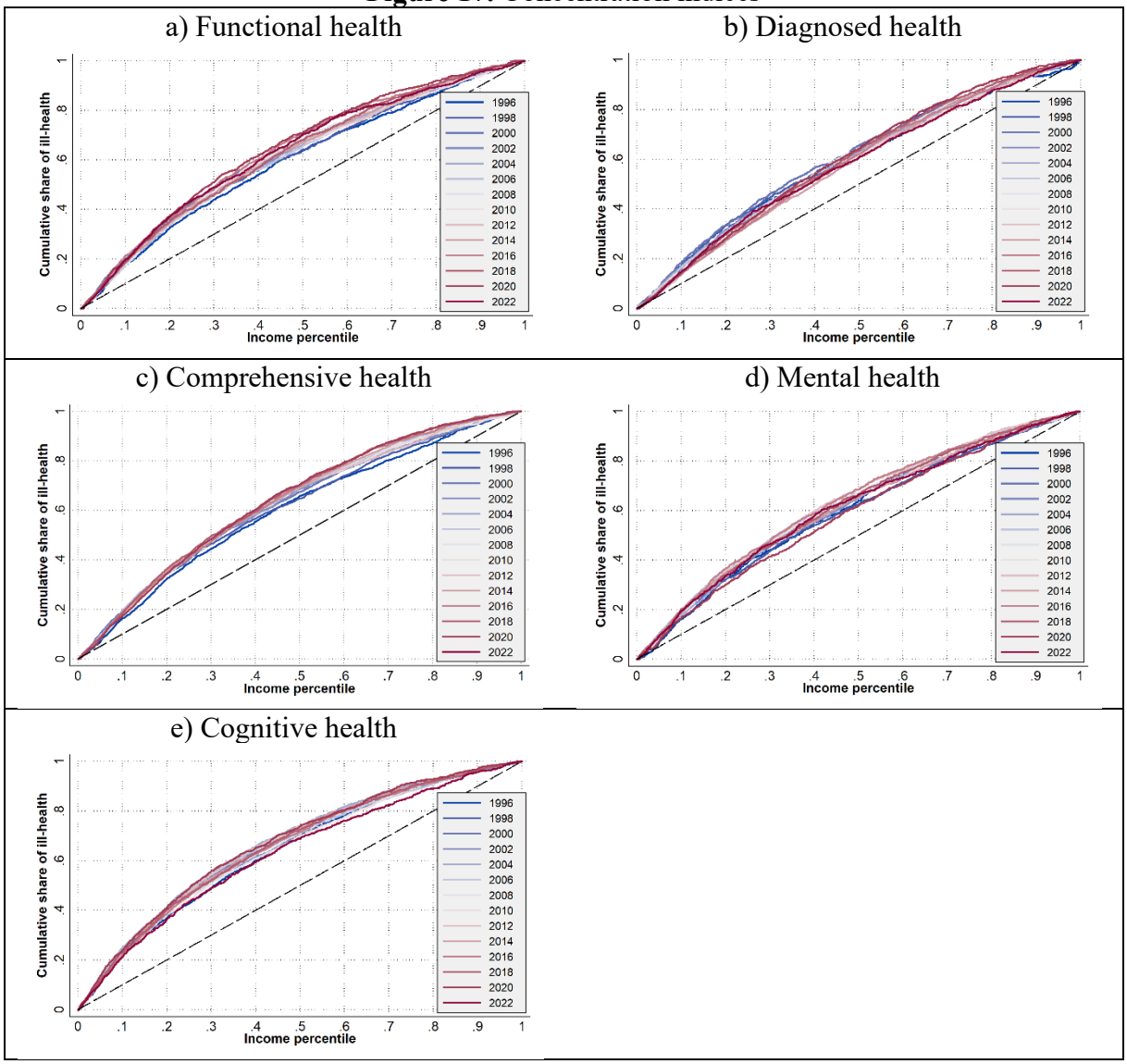
6. Concentration indices

An alternative approach to quantifying inequality is through the **concentration curve**, a variant of the Lorenz curve applied to health outcomes. The associated **concentration index (CI)** – analogous to the Gini coefficient for income inequality – is defined as:

$$CI = \frac{1}{n}\sum_{i=1}^{n}\frac{h_i}{\bar{h}}(2R_i - 1)$$

where h_i denotes the health status of individual i, $\bar{h}$ is the mean health level in the sample, and R_i represents the fractional income rank of individual i.

Figure 17. Concentration indices



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. These graphs show the concentration curves, which plot the cumulative share of individuals with bad health against income. Equality is represented by the 45-degree line. The further the concentration curve is to the left of the 45-degree line, the greater the inequality is.

Figure 17 displays the concentration curves for each survey wave from 1996 to 2022. The graphs plot the cumulative share of individuals in poor health against the cumulative distribution of income, pooled for women and men. The 45-degree line represents perfect equality, while curves that lie further to the left indicate greater inequality.

For functional and comprehensive health, the concentration curves gradually shift away from the equality line over time, indicating a widening of disparities in these dimensions. In contrast, for diagnosed, mental, and cognitive health, no clear visual evidence of changing inequality is observed.

Figure 18 presents the evolution of the concentration indices across survey waves for all five health measures. A value of zero represents perfect equality, while more negative values

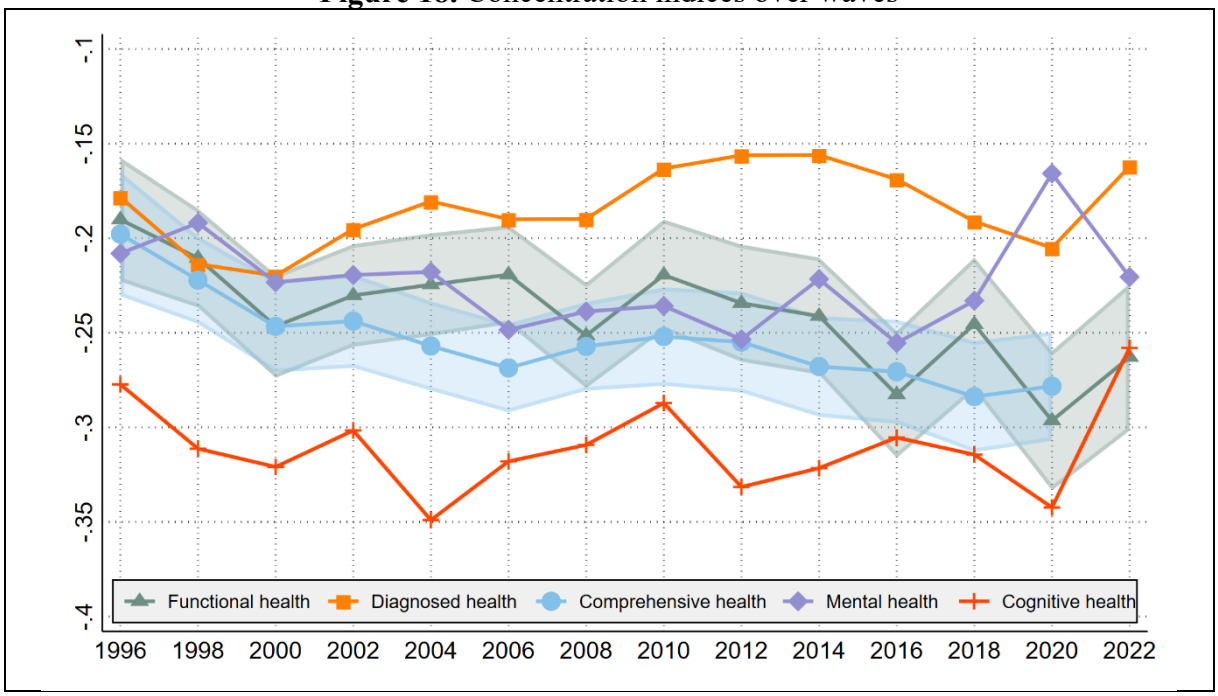
indicate greater inequality. Cognitive health exhibits the highest degree of inequality, with concentration index values ranging from about –0.30 to –0.35, whereas diagnosed health shows the smallest disparities, with values between –0.20 and –0.15. For both measures, inequality remains relatively stable over time.

For mental health, we observe an initial increase in inequality, reflected in more negative index values in the early waves, followed by a flattening and then a shift toward greater equality in 2020, coinciding with the onset of the COVID-19 pandemic.

In contrast, both functional and comprehensive health display a steady rise in inequality over time. To assess statistical significance, we plot 95% confidence intervals around the concentration indices. In both cases, the confidence intervals for the most recent waves do not overlap with those from earlier years. Statistical tests confirm that the changes in the concentration indices between 1996 and 2020 are significant at the 1% level.[4]

The complete set of concentration indices and their 95% confidence intervals is reported in Appendix Table A9.

Figure 18. Concentration indices over waves



Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. This graph illustrates the concentration indices over time by health outcome. Lower values indicate more inequality.

[4] For functional health, the concentration index is statistically different from 1996 for each wave from 2014 onward. For comprehensive health, this even applies to every wave from 2004 onward.

7. Conclusion

This study has explored the changes in health inequality in the U.S. during a period when Social Security reforms were being phased in. In our analysis of the health inequality gradient, we find some evidence of increasing health inequality for women with respect to physical health. By contrast, there is no steepening of the gradient for women's mental or cognitive health, nor any evidence of a steepening gradient for men. We find that the differences in health outcomes between individuals at different points in the income distribution are substantial – equivalent to the effect of aging 15 to 20 years. When we pool women and men and compare high and low income individuals, there is no evidence that these large health differences are widening over time, though there is some evidence that health at the middle of the distribution may be slipping. Finally, when we conceptualize health inequality using a measure analogous to the Gini coefficient, we find that both functional and comprehensive health display a steady rise in inequality over time. Overall, our findings present a somewhat mixed picture as to the trend in health inequalities, where results can vary by health measure, gender, or method for measuring inequality.

The Social Security reforms that occurred over this era reduced lifetime pension income, but workers on the whole have been able to counteract much of the impact on annual retirement income by working longer. Our analysis leaves room for the possibility that lower income workers, who may have been less able to extend their working lives or may have worked longer but at a cost to their health, experienced worsening health as a result of this reform. We believe that further exploration of this hypothesis may be worthwhile.

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9. Appendix

Table A1 – List functional health

batha	Bathing or showering	phonea	Using a telephone
eata	Eating	medsa	Taking medication
dressa	Dressing	moneya	Handling money
walkra	Walking across a room	shopa	Shopping
beda	Getting in or out of bed	mealsa	Preparing meals
toilta	Using the toilet, including getting up or down		

Table A2 – List diagnosed health

hearte	Ever had heart problems	cancre	Ever had cancer
hibpe	Ever had high blood pressure	lunge	Ever had lung disease
stroke	Ever had stroke	psyche	Ever had psych problems
diabe	Ever had diabetes	arthre	Ever had arthritis

Table A3 – List comprehensive health

heart	Heart problem this wave	dimea	Any difficulty picking up a dime
hibp	High blood pressure this wave	armsa	Any difficulty reaching or extending arms up
strok	Stroke this wave	pusha	Any difficulty pushing or pulling large objects
diabe	Diabetes this wave	dressa	Any difficulty dressing
cancr	Cancer this wave	batha	Any difficulty bathing or showering
lung	Lung problems this wave	eata	Any difficulty eating
psych	Psychological problems this wave	beda	Any difficulty getting in or out of bed
arthr	Arthritis this wave	mapa	Any difficulty using a map
walks	Any difficulty walking several blocks	moneya	Any difficulty managing money
walk1a	Any difficulty walking one block	phonea	Any difficulty using a telephone
walkra	Any difficulty walking across the room	medsa	Any difficulty taking medications
sita	Any difficulty sitting for two hours	toilta	Any difficulty using the toilet
chaira	Any difficulty getting up from a chair	mealsa	Any difficulty preparing a hot meal
climsa	Any difficulty climbing several flights of stairs	shopa	Any difficulty shopping for grocery
clim1a	Any difficulty climbing one flight of stairs	hspnit	Overnight hospital stays in the previous two years / since last interview
stoopa	Any difficulty stooping, kneeling, or crouching	nrshom	Any nursing home stay in the previous two years / since last interview
lifta	Any difficulty lifting or carrying 10lbs	bmi	Self-reported body mass index, BMI≥30 or BMI≤18.5=1, 25≤BMI<30=0.5, 18.5<BMI<25=0

Table A4 – Statistical test for differences in **functional health**

	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022
1994		0.628	0.513	0.891	0.474	0.870	0.646	0.596	0.436	0.269	**0.099***	**0.081***	**0.086***	**0.082***	0.183
1996	0.798		0.869	0.696	0.821	0.736	0.933	0.952	0.779	0.547	0.246	0.223	0.235	0.238	0.410
1998	0.815	0.644		0.565	0.951	0.609	0.785	0.792	0.910	0.662	0.316	0.292	0.307	0.315	0.510
2000	0.941	0.783	0.897		0.520	0.971	0.722	0.667	0.476	0.283	**0.094***	**0.073***	**0.077***	**0.071***	0.185
2002	0.866	0.977	0.724	0.835		0.565	0.732	0.734	0.959	0.708	0.345	0.322	0.339	0.349	0.551
2004	0.554	0.699	0.460	0.585	0.745		0.769	0.723	0.524	0.330	0.123	0.102	0.108	0.103	0.227
2006	0.454	0.583	0.382	0.506	0.657	0.897		0.969	0.684	0.437	0.159	0.130	0.137	0.130	0.300
2008	0.472	0.596	0.396	0.513	0.658	0.883	0.977		0.680	0.412	0.131	0.096	0.102	**0.089***	0.267
2010	0.837	0.933	0.667	0.815	0.978	0.622	0.497	0.521		0.742	0.363	0.339	0.357	0.368	0.579
2012	0.640	0.806	0.526	0.657	0.830	0.887	0.778	0.773	0.730		0.552	0.536	0.562	0.591	0.822
2014	0.171	0.222	0.170	0.276	0.385	0.533	0.617	0.679	0.129	0.405		0.981	0.943	0.877	0.701
2016	0.358	0.460	0.307	0.419	0.550	0.749	0.840	0.873	0.379	0.636	0.813		0.959	0.886	0.696
2018	0.537	0.692	0.445	0.579	0.748	0.975	0.860	0.849	0.600	0.902	0.448	0.703		0.929	0.728
2020	0.853	0.653	0.944	0.939	0.748	0.447	0.358	0.379	0.678	0.519	0.122	0.279	0.424		0.772
2022	0.753	0.617	0.911	0.827	0.679	0.464	0.401	0.408	0.638	0.520	0.225	0.334	0.457	0.859	

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The **left-bottom** half reports the p-values for the pair-wise comparison in means between two years for **men**. The **top-right** half does so for **women**. Significance levels: ***p < 0.01, ** p < 0.05, * p < 0.10.

Table A5 – Statistical test for differences in **diagnosed health**

	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022
1994		0.687	0.304	0.201	0.143	0.118	**0.003*** **	**0.040** **	**0.086***	**0.096***	**0.023** **	**0.002*** **	**0.001*** **	**0.001*** **	**0.000*** **
1996	0.385		0.489	0.324	0.227	0.196	**0.006*** **	**0.070***	0.136	0.143	**0.038** **	**0.005*** **	**0.001** **	**0.002*** **	**0.001*** **
1998	0.447	0.835		0.731	0.520	0.513	0.075	0.233	0.328	0.300	0.122	**0.036** **	**0.010** **	**0.012** **	**0.008*** **
2000	0.143	0.557	0.389		0.748	0.766	0.227	0.410	0.500	0.436	0.225	0.103	0.036	0.031	0.030
2002	**0.097***	0.514	0.318	0.989		0.962	0.505	0.655	0.723	0.619	0.392	0.254	0.114	0.080	0.104
2004	**0.054***	0.372	0.199	0.829	0.785		0.416	0.595	0.675	0.577	0.341	0.195	**0.078***	**0.059***	**0.068***
2006	0.179	0.612	0.450	0.958	0.963	0.793		0.900	0.871	0.939	0.658	0.454	0.186	0.130	0.165
2008	0.042	0.231	0.131	0.522	0.467	0.601	0.506		0.962	0.883	0.641	0.490	0.248	0.162	0.234
2010	0.150	0.485	0.356	0.843	0.820	0.966	0.812	0.716		0.860	0.639	0.510	0.283	0.185	0.271
2012	0.212	0.547	0.433	0.869	0.853	0.979	0.841	0.740	0.993		0.808	0.708	0.459	0.306	0.449
2014	0.624	0.977	0.894	0.772	0.770	0.684	0.798	0.518	0.693	0.713		0.906	0.588	0.383	0.576
2016	0.451	0.811	0.715	0.910	0.913	0.813	0.938	0.610	0.812	0.829	0.879		0.607	0.379	0.592
2018	0.553	0.862	0.785	0.908	0.911	0.830	0.931	0.657	0.826	0.838	0.906	0.985		0.649	0.994
2020	**0.032** **	0.110	0.074	0.219	0.196	0.243	0.215	0.434	0.313	0.342	0.262	0.301	0.357		0.647
2022	0.138	0.275	0.230	0.412	0.397	0.451	0.402	0.615	0.492	0.505	0.385	0.439	0.470	0.947	

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The **left-bottom** half reports the p-values for the pair-wise comparison in means between two years for **men**. The **top-right** half does so for **women**. Significance levels: ***p < 0.01, ** p < 0.05, * p < 0.10.

Table A6 – Statistical test for differences in **comprehensive health**

	1994	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**	**2016**	**2018**	**2020**	**2022**
1994															
1996			0.781	0.979	0.609	0.859	0.399	0.391	0.211	0.149	**0.032****	**0.017****	**0.010*****	**0.007*****	
1998		0.759		0.773	0.843	0.895	0.663	0.664	0.415	0.308	0.107	**0.085***	**0.052***	**0.043****	
2000		0.849	0.931		0.612	0.847	0.420	0.414	0.235	0.169	**0.044****	**0.029****	**0.017****	**0.013****	
2002		0.933	0.848	0.923		0.711	0.823	0.828	0.524	0.388	0.135	0.107	**0.064***	**0.052****	
2004		0.818	0.892	0.981	0.923		0.479	0.471	0.250	0.175	0.034	**0.016****	**0.009*****	**0.006*****	
2006		0.976	0.702	0.811	0.903	0.731		0.986	0.597	0.422	0.108	**0.059***	**0.032****	**0.023****	
2008		0.866	0.627	0.735	0.819	0.627	0.839		0.570	0.397	**0.090***	**0.041****	**0.022****	**0.015****	
2010		0.544	0.825	0.763	0.669	0.659	0.431	0.373		0.757	0.307	0.257	0.150	0.121	
2012		0.881	0.846	0.936	0.972	0.936	0.819	0.711	0.619		0.533	0.526	0.345	0.301	
2014		0.647	0.487	0.576	0.637	0.473	0.595	0.703	0.302	0.531		0.913	0.773	0.704	
2016		0.609	0.453	0.548	0.608	0.423	0.537	0.657	0.261	0.484	0.984		0.609	0.522	
2018		0.586	0.430	0.533	0.594	0.376	0.481	0.623	0.223	0.446	0.997	0.984		0.919	
2020		0.182	0.389	0.369	0.295	0.214	**0.094***	**0.082***	0.463	0.204	**0.086***	**0.064***	**0.044****		
2022															

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The **left-bottom** half reports the p-values for the pair-wise comparison in means between two years for **men**. The **top-right** half does so for **women**. Significance levels: ***p < 0.01, ** p < 0.05, * p < 0.10.

Table A7 – Statistical test for differences in **mental health**

	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022
1994		0.839	0.945	0.382	0.384	0.391	0.350	0.630	0.573	0.519	0.303	0.990	0.968	0.958	0.925
1996	0.890		0.750	0.158	0.156	0.164	0.127	0.392	0.326	0.270	**0.098***	0.762	0.726	0.762	0.721
1998	0.724	0.782		0.354	0.355	0.363	0.315	0.641	0.573	0.510	0.264	0.938	0.963	0.983	0.978
2000	0.423	0.411	0.665		0.989	0.983	0.954	0.645	0.699	0.762	0.850	0.207	0.204	0.330	0.356
2002	0.398	0.370	0.651	0.990		0.994	0.942	0.651	0.705	0.770	0.835	0.205	0.202	0.331	0.357
2004	0.459	0.450	0.721	0.918	0.921		0.936	0.660	0.714	0.779	0.832	0.216	0.213	0.340	0.366
2006	0.624	0.648	0.952	0.624	0.591	0.689		0.597	0.648	0.710	0.890	0.165	0.160	0.291	0.315
2008	0.215	0.151	0.402	0.700	0.654	0.595	0.268		0.931	0.859	0.516	0.515	0.526	0.618	0.653
2010	0.419	0.405	0.663	0.997	0.992	0.920	0.620	0.691		0.926	0.559	0.433	0.440	0.549	0.583
2012	0.189	0.120	0.365	0.654	0.601	0.545	0.217	0.950	0.645		0.615	0.360	0.363	0.485	0.517
2014	0.110	**0.048****	0.234	0.452	0.381	0.347	0.088	0.663	0.439	0.694		0.124	0.118	0.242	0.262
2016	0.340	0.284	0.590	0.965	0.948	0.865	0.488	0.661	0.962	0.597	0.342		0.965	0.956	0.910
2018	0.448	0.406	0.750	0.819	0.806	0.909	0.696	0.404	0.818	0.336	0.140	0.710		0.982	0.935
2020	0.765	0.838	0.908	0.516	0.480	0.567	0.812	0.216	0.511	0.177	**0.077***	0.388	0.547		0.961
2022	0.968	0.852	0.692	0.394	0.368	0.428	0.585	0.193	0.391	0.168	**0.095***	0.310	0.412	0.727	

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The **left-bottom** half reports the p-values for the pair-wise comparison in means between two years for **men**. The **top-right** half does so for **women**. Significance levels: ***p < 0.01, ** p < 0.05, * p < 0.10.

Table A8 – Statistical test for differences in **cognitive health**

	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022
1994															
1996			0.451	0.707	0.903	0.696	0.508	0.648	0.737	0.277	0.265	0.256	0.135	0.182	0.477
1998		0.615		0.686	0.491	0.575	0.877	0.687	0.554	0.797	0.748	0.756	0.458	0.563	**0.060***
2000		0.665	0.933		0.782	0.953	0.778	0.960	0.915	0.468	0.443	0.436	0.237	0.312	0.188
2002		0.983	0.544	0.602		0.780	0.558	0.720	0.826	0.288	0.275	0.264	0.130	0.183	0.329
2004		0.860	0.643	0.710	0.83		0.666	0.893	0.946	0.278	0.272	0.245	0.094	0.159	**0.067***
2006		0.734	0.310	0.350	0.632	0.464		0.789	0.639	0.634	0.595	0.592	0.317	0.418	**0.056***
2008		0.845	0.619	0.691	0.798	0.990	0.400		0.852	0.427	0.404	0.390	0.185	0.265	**0.097***
2010		0.683	0.808	0.891	0.570	0.710	0.252	0.648		0.278	0.270	0.247	**0.100***	0.162	0.104
2012		0.775	0.277	0.319	0.641	0.408	0.882	0.271	0.116		0.924	0.944	0.530	0.673	**0.004*****
2014		0.709	0.773	0.854	0.603	0.754	0.269	0.699	0.936	0.126		0.976	0.620	0.757	**0.006*****
2016		0.827	0.658	0.730	0.780	0.954	0.408	0.955	0.731	0.315	0.780		0.573	0.719	**0.003*****
2018		0.968	0.464	0.521	0.929	0.730	0.654	0.670	0.424	0.656	0.455	0.664		0.867	**0.001*****
2020		0.730	0.828	0.898	0.672	0.800	0.381	0.784	0.984	0.34	0.975	0.826	0.581		**0.002*****
2022		0.218	**0.034****	**0.04****	**0.078***	**0.028****	0.228	**0.008*****	**0.003*****	**0.061***	**0.003*****	**0.014****	**0.053***	**0.034****	

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. The **left-bottom** half reports the p-values for the pair-wise comparison in means between two years for **men**. The **top-right** half does so for **women**. Significance levels: ***p < 0.01, ** p < 0.05, * p < 0.10.

Table A9 – Concentration indices

	1996		1998		2000		2002		2004		2006		2008		2010	
	Conc. Index	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**
Functional Health	-0.190	[-0.223, -0.157]	-0.211	[-0.237, -0.184]	-0.247	[-0.274, -0.219]	-0.230	[-0.257, -0.203]	-0.225	[-0.252, -0.197]	-0.219	[-0.245, -0.193]	-0.251	[-0.279, -0.224]	-0.219	[-0.249, -0.190]
Diagnosed Health	-0.178	[-0.236, -0.121]	-0.214	[-0.253, -0.174]	-0.220	[-0.258, -0.181]	-0.195	[-0.230, -0.161]	-0.181	[-0.212, -0.149]	-0.190	[-0.219, -0.160]	-0.190	[-0.219, -0.160]	-0.163	[-0.193, -0.133]
Comprehensive Health	-0.198	[-0.231, -0.165]	-0.222	[-0.245, -0.199]	-0.247	[-0.271, -0.222]	-0.244	[-0.269, -0.219]	-0.257	[-0.281, -0.233]	-0.269	[-0.292, -0.245]	-0.257	[-0.281, -0.234]	-0.252	[-0.278, -0.226]
Mental Health	-0.208	[-0.249, -0.167]	-0.192	[-0.218, 0.165]	-0.223	[-0.251, -0.196]	-0.219	[-0.247, --0.192]	-0.218	[-0.246, -0.190]	-0.248	[-0.276, -0.221]	-0.239	[-0.269, -0.208]	-0.236	[-0.271, -0.201]
Cognitive Health	-0.277	[-0.314, -0.241]	-0.311	[-0.337, -0.286]	-0.321	[-0.347, -0.295]	-0.302	[-0.327, -0.276]	-0.349	[-0.375, -0.323]	-0.318	[-0.344, -0.292]	-0.309	[-0.333, -0.286]	-0.287	[-0.313, -0.261]

Source. Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. This table lists the concentration indices for our five health measures over years. Lower values indicate more inequality.

Table A9 – Concentration indices (ctd.)

	2012		2014		2016		2018		2020		2022	
	Conc. Index	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**	**Conc. Index**	**95%-CI**
Functional Health	-0.234	[-0.265, -0.203]	-0.241	[-0.272, -0.210]	-0.283	[-0.316, -0.249]	-0.245	[-0.281, -0.210]	-0.296	[-0.333, -0.260]	-0.263	[-0.302, -0.224]
Diagnosed Health	-0.156	[-0.186, -0.126]	-0.156	[-0.185, 0.127]	-0.169	[-0.198, -0.139]	-0.191	[-0.221, -0.161]	-0.205	[-0.235, -0.175]	-0.162	[-0.195, -0.129]
Comprehensive Health	-0.255	[-0.282, -0.228]	-0.268	[-0.294, -0.241]	-0.271	[-0.298, -0.243]	-0.284	[-0.313, -0.254]	-0.278	[-0.307, -0.249]		
Mental Health	-0.253	[-0.287, -0.220]	-0.222	[-0.258, -0.185]	-0.255	[-0.294, -0.217]	-0.233	[-0.274, -0.193]	-0.166	[-0.204, -0.128]	-0.220	[-0.293, -0.178]
Cognitive Health	-0.332	[-0.358, -0.305]	-0.322	[-0.350, -0.293]	-0.305	[-0.336, -0.275]	-0.314	[-0.346, -0.282]	-0.342	[-0.375, -0.309]	-0.258	[-0.293, -0.223]

Source. . Own calculations, based on RAND HRS Longitudinal File 2022 (V1). Weights applied.
Note. This table lists the concentration indices for our five health measures over years. Lower values indicate more inequality.