

Chronic Disease, Functional Limitations, and Workforce Participation Among Medicaid Enrollees Over 50: The Potential Impact of Medicaid Work Requirements Post-COVID-19

Rodlescia S. Sneed, PhD, MPH;^{1,2} Alexander Stubblefield, MS;³ Graham Gardner, MS;³ Tamara Jordan, DO, MPH, MLS;¹ Briana Mezuk, PhD⁴

¹Division of Public Health, Michigan State University, 200 East 1st Street, Flint, MI 48502

²Institute of Gerontology & Department of Psychology, 87 East Ferry Street, Detroit, MI 48202

³Department of Economics, Michigan State University, 486 W. Circle Dr., East Lansing, MI 48824

⁴Department of Epidemiology, University of Michigan School of Public Health, 1415 Washington Heights, Ann Arbor, MI 48109

Corresponding Author: Dr. Rodlescia Sneed, PhD, MPH; 87 East Ferry Street, Wayne State University, email: sneedrod@wayne.edu

Abstract

From 2018-2020, 19 states enacted Medicaid work requirements as a strategy for reducing program enrollment and overall cost. While these requirements were later rescinded, strategies to reduce Medicaid costs are likely to reemerge as states attempt to recover economically from the COVID-19 pandemic. Here, we evaluated the impact of Medicaid work requirements on adults aged >50, a group that likely faces significant age-related chronic disease burden. Using 2016 Health and Retirement Study data, we evaluated the chronic disease burden of adult Medicaid beneficiaries aged 51-64 years (n=1460) who would be at risk of losing their Medicaid coverage due to work requirements. We compared Medicaid beneficiaries working <20 hours per week (i.e. those at risk of coverage loss) to those working at least 20 hours per week on eight chronic health conditions, adjusting for demographic characteristics. Among those with chronic health conditions, we also evaluated differences in disease severity based on hours worked per week. Among those working fewer than 20 hours per week, odds of disease were greater for seven of eight chronic conditions, including history of stroke (OR: 5.66; 95% CI: 2.22-14.43) and lung disease (OR: 3.79; 95% CI: 2.10-6.85). Further, those with greater disease severity were likely to work fewer hours. Thus, the introduction of Medicaid work requirements would likely result in coverage loss and lower access to care among older Medicaid beneficiaries with multiple chronic health conditions.

Keywords: Medicaid, Chronic Disease, Functional Limitations, State Health Policies, Older Adults

Key Points

- Chronic disease and functional limitations are associated with reduced work hours among older Medicaid enrollees (51-64 years).

- Medicaid work requirements would jeopardize the eligibility and coverage of adults aged 51-64 with chronic health conditions.
- In turn, losing Medicaid coverage would have adverse effects on long-term health and management of chronic health conditions

Introduction

Medicaid is the primary public health insurance program for low-income Americans. It plays a significant role in our health care system, providing health insurance for one in five Americans (Kaiser Family Foundation, 2019), most of whom lack access to other affordable health insurance options. Additionally, it provides more than 50% of long-term care financing, and helps to pay for premiums and cost-sharing for ten million low-income Medicare beneficiaries (Rudowitz et al., 2019).

Given its critical role in our nation's health insurance infrastructure, Medicaid also accounts for a sizable portion of federal and state expenditures. In FY 2020, total Medicaid program expenditures exceeded \$652 billion, up from \$597 billion in FY 2019 (Medicaid.gov, n.d.). This spending growth can be largely attributed to the COVID-19 pandemic, which has led to a significant increase in Medicaid enrollment and subsequent spending. All fifty states have reported pandemic-related fiscal stress, as demands for health insurance have increased while state revenues have declined (Hinton et al., 2021). From February 2020 to June 2021, Medicaid enrollment increased 16.8%, which corresponds to twelve million new enrollees (Corallo, 2022). Consequently, states have found themselves facing difficult budget decisions to meet balanced budget requirements (Gifford et al., 2020).

Historically, fiscal stress to the Medicaid system has resulted in policy efforts to reduce spending. For example, the Deficit Reduction Act of 2005 gave states authority to require proof of citizenship for Medicaid beneficiaries, charge premiums for children and families between 100 and 150% of the Federal Poverty Level (FPL) and introduce cost sharing for families with income more than 150% of the FPL (Markus & Rosenbaum, 2006). States have also used eligibility and enrollment restrictions as a strategy for reducing costs. For example, in October

2020, the Centers for Medicare and Medicaid Services (CMS) approved the state of Indiana's request to disenroll and lock-out beneficiaries for non-payment of premiums and to lock-out beneficiaries who did not renew their eligibility in a timely fashion (Kaiser Family Foundation, 2022). Additionally, at least 8 states have applied for waivers to Medicaid's retroactive coverage requirements, which allow people to receive coverage for health services received in the three months prior to filing a Medicaid application if they met the eligibility requirements at the time (Cuello, 2021; Shafer et al., 2020).

One recent attempt to curb Medicaid spending has been the introduction of work requirements. From 2018-2020, nineteen states (with guidance from the Trump administration and CMS) drafted policies to impose work requirements among working-aged Medicaid beneficiaries as a condition of enrollment. In June 2018, Arkansas became the first US state to implement work requirements in Medicaid, resulting in coverage loss for 18,000 adults without significant changes in employment (Chen & Sommers, 2020; Sommers, 2019; Sommers, 2020).

Attitudes about Medicaid work requirements have been mixed. Proponents argue that these requirements promote financial independence for families and individuals by increasing employment, shifting Medicaid recipients to employer-based health care coverage, and reducing Medicaid costs (Medicaid and CHIP Payment and Access Commission, 2017). Opponents argue that work requirement policies are largely untested and that they could disenfranchise the nation's most medically-vulnerable citizens (Garfield et al., 2019a). Further, some opponents suggest that support for Medicaid work requirements reflects racial bias about which individuals in a community deserve Medicaid benefits (Haeder et al., 2021). Although CMS (under the Trump administration) originally sanctioned Medicaid work requirements, requirements were

later rescinded in 2021 with the incoming Biden administration (Kaiser Family Foundation, 2022).

While no states are currently implementing work requirements, as states attempt to recover economically from the COVID-19 pandemic, strategies to reduce Medicaid enrollment are likely to reemerge. Further, The COVID-19 pandemic has resulted in a widespread shift in the U.S. labor force, such that there is an ongoing trend of employees voluntarily leaving their jobs at record numbers (i.e. the “Great Resignation”; Washington Post Live; 2021). With this, Medicaid work requirements may re-emerge as a policy conversation in an attempt to both reduce Medicaid enrollment and to rebuild the U.S. post-pandemic workforce. Thus, it is still important to consider the potential impact of Medicaid work requirement policies in policy analyses.

We are specifically interested in studying the potential impact of Medicaid work requirements on adults aged >50 . As states consider how to modify their Medicaid requirements, it may be useful for them to consider age exemptions for eligibility requirements, as older beneficiaries likely have significant age-related chronic disease burden that could negatively impact their ability to work. More than 50% of individuals in the general population of adults ages 51-64 have two or more chronic health conditions (Buttorff et al., 2017), and rates of chronic disease have increased significantly in the last quarter century among adults in this group (United Health Foundation, 2016). Burden of disease may be even higher among Medicaid recipients, as management of chronic health conditions requires ongoing partnership with a primary care provider, which is greatly impacted by access to adequate health care coverage (Garfield et al., 2019b). We know little about the specific health needs of Medicaid enrollees who are not in the workforce. Additionally, we know little about the true impact of chronic

disease in this population with respect to both disease severity and healthcare utilization. Thus, our goal was to evaluate chronic disease burden among Medicaid beneficiaries ages 51-64 who might be subject to Medicaid work requirements. Additionally, we are interested in differences in disease severity and healthcare utilization between Medicaid beneficiaries with reduced workforce participation and those working at higher levels.

Finally, we are interested in functional limitations among those who might be impacted by Medicaid work requirements. Many adults over 50 have difficulties with activities of daily living, including walking, bathing, or dressing themselves. Individuals with these functional limitations have greater hospitalization and mortality risk (Ohtake et al., 2018). While the Medicaid work requirement policies developed by most states have exemptions for those who are “medically frail”,

Our population of interest included Medicaid recipients ages 51-64 working less than 20 hours per week (the cutoff used by most states in their Medicaid demonstration projects). We addressed our research questions using data from the Health and Retirement Study, a nationally-representative study of U.S. community-dwelling adults aged >50. We compared individuals working less than 20 hours per week to their counterparts working at least 20 hours per week.

Methods

Participants and Study Design

We used data from the 2016 wave of the Health and Retirement Study (HRS), a biennial, longitudinal panel study of community-dwelling adults aged >50 (University of Michigan, 2016; University of Michigan, 2018). The survey uses a nationally-representative, multi-stage area probability survey design of U.S. households, oversampling Black adults, Hispanic adults, and

Florida residents (Juster & Suzman, 1995). This current study was exempt from Michigan State University Institutional Review Board review.

The 2016 HRS wave included 20,912 individual participants. From this sample, we excluded participants who were not ages 51-64 ($n=11,053$) and those not on Medicaid ($n=8,107$). We also excluded 202 participants who receiving Supplemental Security Income (SSI), as these individuals would likely be excluded from Medicaid work requirements due to disability. Additionally, we excluded those with missing data on workforce participation ($n=71$), and those missing data on one of our standard covariates (age, race/ethnicity, marital status, gender, education; $n=19$). Our final sample included 1,460 participants who were 46.53% Non-Hispanic White, 21.78% Hispanic, 21.33% Non-Hispanic Black, and 10.36% other racial/ethnic backgrounds. Participants were ages 51-64 (mean age 56.79, $SD=4.22$) and 58.56% female (Table 1).

Assessment of Workforce Participation

Workforce participation was evaluated based on self-report. Participants were asked about the number of hours they worked per week in a primary or secondary job. Participants were considered to have reduced workforce participation if they worked less than 20 hours per week across jobs.

Assessment of Chronic Health Conditions

We evaluated the prevalence of the following eight self-reported chronic conditions: diabetes, hypertension, cancer, lung disease, heart disease, stroke, psychiatric problems, and arthritis. These conditions were each assessed as a binary (yes/no) indicator and were summed to create an indicator of cumulative disease burden (range: 0 to 8). Analyses were conducted using

the number of chronic health conditions as a continuous variable as well as a categorical variable (categories: 0 conditions, 1 condition, 2 conditions, 3 or more conditions).

Assessment of Functional Limitations

Participants were asked about difficulties with 3 activities of daily living (ADLs) using a binary (yes/no) variable: bathing, eating, and dressing. The number of ADLs was summed to produce an ADL score ranging from 0 to 3.

Indicators of Disease Severity

The severity of four of these conditions (arthritis, diabetes, hypertension, and lung disease) was also assessed by self-report via the following questions.

Arthritis severity. To assess arthritis severity, participants were asked about use of opioid pain medication in the last three months (yes/no), use of over the counter pain medication in the past 3 months (yes/no), trouble with pain (yes/no), if their arthritis had gotten better worse or stayed the same in the last 2 years, and if they had surgery or joint replacement because of arthritis in the past 2 years (yes/no)

Diabetes severity. Participants were asked to rate their eyesight using glasses or corrective lenses (excellent, very good, good, fair, or poor), if they were currently using insulin shots or a pump (yes/no), if they had persistent swelling in the feet or ankles since the last interview (yes/no), and if they had stayed overnight in the hospital in the past two years (yes/no).

Hypertension severity. Participants were asked if they were currently taking blood pressure medications (yes/no), if they had stayed overnight in the hospital in the past two years (yes/no), and if they had ever had a stroke (yes/no).

Lung Disease Severity. Participants were asked if they were currently taking medications or receiving treatment for a lung condition (yes/no), if they were receiving oxygen for the lung condition (yes/no), if the lung condition had changed since the last interview (better, worse, stayed the same), and if they had been hospitalized over the last two years (yes/no).

Covariates

Demographic variables included in all analyses were age (continuous variable), sex (male/female), education (no degree, high school diploma, GED [general educational development], two-year degree/some college, four-year degree, master's degree, professional degree), race (Non-Hispanic White, Non-Hispanic Black, Hispanic, Non-Hispanic Other), and marital status (Married, Partnered & Unmarried, Separated, Divorced, Widowed, Never Married).

Statistical Analyses

Given the complex sample design of the HRS (Ofstedal et al., 2011), all analyses were conducted using the survey procedures in Stata 16.1. We evaluated the association between chronic health conditions and reduced workforce participation, defined as working less than 20 hours per week. We used logistic regression to determine the association between each of the eight chronic health conditions and reduced workforce participation, calculating odds ratios (OR) and 95% confidence intervals (CIs). All analyses adjusted for demographic characteristics.

We also evaluated the association between cumulative burden of health conditions (possible range 0 to 8) and reduced workforce participation. All analyses adjust for our standard control variables.

To evaluate differences in indicators of disease severity based on workforce participation, we performed separate analyses among all individuals with the four conditions that assessed

severity: diabetes, high blood pressure, arthritis, and lung disease. We used the margins command in Stata (Stata, n.d.b) to calculate probabilities for each indicator based on hours worked per week (<20 hours versus 20+ hours), adjusting for age, sex, race/ethnicity, education, and marital status.

Results

Of the 1460 Medicaid recipients aged 51 to 64 in our analytic sample, about one-third (33.7%) of adults worked at least 20 hours per week (Table 1). On average, this group of participants worked 39.7 hours per week (SD 15.8). However, nearly two-thirds (66.3%) of participants worked less than 20 hours per week, which would lead to a loss of Medicaid coverage if strict work requirements were imposed. Demographic predictors of reduced workforce participation (working <20 hours per week) included older age, less than a high school education, having a GED, and being partnered but unmarried. Notably, neither gender nor race/ethnicity were associated with reduced workforce participation.

Overall, 28.2% of the sample reported difficulties with at least one activity of daily living (ADLs; Table 1). This varied by work status, as 35.4% of those working <20 hours per week had at least one ADL. Conversely only 8.2% of those working at least 20 hours per week reported ADLs.

Chronic disease burden was high in the sample. Overall, about 32% of the sample had diabetes, 10% had cancer, 21% had lung disease, 23% had heart problems, 12% have had a stroke, 39% had a psychiatric condition, 55% had arthritis, and 62% had hypertension. Only 12.0% had none of the eight health conditions and nearly half (48.4%) had three or more of these conditions. Seven of the eight chronic health conditions (hypertension, diabetes, heart disease, lung disease, stroke, psychiatric problems, and arthritis) were individually associated with

increased odds of reduced workforce participation Table 2). The strongest associations with reduced workforce participation were observed for history of stroke (OR: 5.66; 95% CI: 2.22-14.43) and lung disease (OR: 3.79; 95% CI: 2.10-6.85). A history of cancer was not associated with reduced workforce participation (OR: 1.43; 95% CI: 0.65-3.15). Individuals with at least two chronic health conditions had greater odds of reduced workforce participation than those with less than two chronic conditions (Table 3; OR: 4.02; 95% CI: 2.68-6.02). Those with three or more conditions had greater odds of reduced workforce participation than those with less than three chronic conditions (Table 3; OR: 5.30; 95% CI 3.17-8.87).

Indicators of Disease Severity and Reduced Workforce Participation

We examined the relationship between disease severity and workforce participation for four health conditions that assessed these indicators. Among those with diabetes, 36.4% of those who worked < 20 hours per week reported insulin use, compared to only 22.2% of those who worked \geq 20 hours per week ($p=0.04$; Figure 1). Additionally, 46% of those with diabetes working < 20 hours per week reported swelling in their feet or ankles compared to only 22% of those who worked \geq 20 hours per week ($p=.03$). There were no significant differences in rates of hospitalization or prevalence of fair/poor eyesight based on workforce participation. Among those with arthritis, fifty percent of those working <20 hours per week reported worsening of their arthritis in the past 2 years, compared to only 26% of those working 20+ hours ($p=0.03$; Figure 2). Additionally, those working <20 hours were more likely than their counterparts to report difficulty climbing a flight of stairs (48% versus 23%; $p=0.001$), difficulty walking one block (42% versus 14%; $p<0.0001$), and use of opioids (41% versus 24% $p=0.01$). There was no association between reduced workforce participation and self-reported trouble with pain or use of over-the-counter pain medications among those with arthritis.

Among those with a lung condition, 73% of those working <20 hours per week were currently using medication or treatment for the condition, compared to only 43% of those working 20+ hours per week ($p=0.008$). There was no statistically significant difference among those working <20 hours versus those working 20+ hours with respect to hospitalization in the last 2 years (41% versus 23%; $p=0.16$), oxygen use (15% versus 4%; $p=0.19$) or worsening of the lung condition in the last 2 years (26% versus 20%; $p=0.69$).

Finally, among those with hypertension, 83% of those working <20 hours per week were currently taking blood pressure medications, compared to only 62% of those working 20+ hours per week. Additionally, 43% of those working <20 hours per week had been hospitalized in the last 2 years, compared to only 22% of those working 20+ hours per week ($p=0.002$). Further, 19% of those working <20 hours per week reported a history of stroke, compared to only 5% of those working 20+ hours per week.

Discussion

We observed that chronic disease burden is strongly associated with reduced workforce participation among Medicaid beneficiaries aged 51 to 64. Among those with reduced workforce participation, odds of disease were greater for seven of eight chronic conditions, even after controlling for variables commonly associated with workforce participation, including age, race/ethnicity, sex, marital status, and education. We also observed that, among those with individual chronic health conditions, those with reduced workforce participation had poorer condition-related outcomes, suggesting greater disease severity. Overall, our findings suggest that work requirements for Medicaid beneficiaries in this age group would have the greatest impact on those with high disease burden. This has broad implications for population health, as

individuals who have multiple chronic health conditions report greater healthcare utilization than their counterparts in the form of more doctor's visits, prescriptions, and referrals to specialists (Buttorff et al., 2017). Loss of coverage for these important services would likely have negative implications for long-term disease management.

Two-thirds (66.7%) of participants in our sample worked fewer than 20 hours per week. Thus, enactment of Medicaid work requirements would result in coverage loss for most Medicaid recipients over the age of fifty. This is significantly higher than previous estimates of coverage loss that include younger individuals. For example, Soni and colleagues (2020) observed that 22% of adults ages 19-64 would not satisfy at 20-hour-per week work requirement, putting them at risk of coverage loss. It is also of great public health relevance, given that more than 50% of adults ages 51-64 have two or more chronic health conditions (Buttorff et al., 2017).

In addition to potential loss of coverage, the imposition of work requirements on those with chronic health conditions could also be detrimental to employers. For example, annual absenteeism due to hypertension result in more than \$11 billion in costs to U.S. employers, with an annual additional cost per person as high as \$2362 for absenteeism and presenteeism (i.e. reduced productivity while at work; see review by MacLeod, 2022). Likewise, the estimated indirect costs of diagnosed diabetes are estimated at \$3.3 billion in annual costs due to absenteeism and \$26.9 billion for presenteeism (American Diabetes Association, 2018). Chronic conditions are a major contributor to the costs of health insurance premiums and employee medical claims (Centers for Disease Control and Prevention, 2022). Given this, employers may be reluctant to hire those with chronic health conditions, viewing them as potentially costly employees.

Of note, functional disability was very uncommon among those working at least 20 hours per week. Ninety-one percent of participants in this group reported no difficulties with activities of daily living (ADLs), a common measure of functional limitation. Conversely, more than one-third (35%) of those at risk for coverage loss (i.e. working < 20 hours per week) reported difficulties with at least one ADL. Although Medicaid work requirements policies in some states may allow exemptions for disabled adults receiving Social Security Income, some Medicaid enrollees 51-64 years old with one or more ADL difficulties could automatically lose Medicaid coverage if strict work requirements are imposed. Empirical data collected when Medicaid work requirements were activated in Arkansas show that more than 4,000 people were immediately removed from Medicaid rolls within the first three months of the program (Wilson & Thompson, 2018) and more than 18,000 people were removed within the first year, most of whom were unaware of the policy in the first place (Sommers et al., 2020). The resumption of similar policies could negatively impact older Medicaid beneficiaries with significant functional limitations.

Our findings are consistent with other studies in this area. The Kaiser Family Foundation reported that Medicaid beneficiaries ages 19-64 who reported poor health were 50% less likely to be employed as those reporting excellent or good perceived health, rendering them more likely to face coverage losses (Garfield et al., 2018a). Additionally, the Kaiser Family Foundation reported that 35% of those not working have multiple chronic conditions, including high blood pressure, high cholesterol, arthritis, or heart disease (Garfield et al., 2018b). Notably, despite their health problems, these beneficiaries were not currently receiving social security income, which is typically associated with disability. Further, data from the Michigan Medicaid expansion program demonstrated that 74% of Medicaid beneficiaries ages 19-64 who were out

of work had at least one chronic health condition, compared to only 62% of those who were currently employed (Tipirneni et al., 2018).

Our findings are consistent with a broader literature linking poor health to less employment. Numerous studies have demonstrated that poor health is associated with greater risk of exit from paid employment (van Rijn et al., 2013). Further, among those who remain in the workforce, chronic disease has been strongly linked to limitations in individuals' abilities to perform both the physical and psychosocial demands of work (Lerner et al., 2000). People with chronic health conditions report less productivity and more difficulty in performing physical work-related tasks (Jinnett et al., 2017). Additionally, individuals with chronic conditions face more workplace discrimination and less employer support than their counterparts (Siu et al., 2012).

Limitations

This study is not without limitations. We utilized data from the 2016 HRS to evaluate associations between chronic disease and reduced workforce participation. These data were collected prior to the COVID-19 pandemic, which has had known impacts on both employment and Medicaid enrollment (Hinton et al., 2021). Consequently, our sample may not reflect the current population of adults aged >50 receiving Medicaid benefits. Despite this, our study still has a number of strengths. We utilized data from a population-based sample including more than 20,000 individual participants. This provided us with an adequate subsample of Medicaid beneficiaries over 50 to perform our analyses. Further, the Health and Retirement study includes a large battery of health-related information, which allowed us to characterize the health status of our sample in detail.

Conclusion

This work has important implications for Medicaid policy. Although Medicaid work requirements are not currently being implemented anywhere in the U.S., conversations related to this issue may re-emerge as states attempt to recover from the financial impact of the pandemic. In December 2021, CMS contacted the states with approved work requirements through drafted letters, saying workforce requirements among Medicaid beneficiaries did not promote Medicaid objectives (Kaiser Family Foundation, 2022). Six states, however, still have approved applications for implementing work requirements that have not yet been acted on by CMS (Kaiser Family Foundation, 2022), and there is still great debate over whether Medicaid benefits should be tied to employment. As CMS and the states consider next steps on work requirements, our findings suggest that any decisions would have great impact on Medicaid beneficiaries over 50 who have chronic health conditions.

Acknowledgments: This work was supported by the Robert Wood Johnson Foundation's (RWJF) Policies for Action program under grant number 77342. This is a secondary analysis that uses data from the Health and Retirement Study, (2016 HRS Core and RAND HRS Longitudinal File 2018), sponsored by the National Institute on Aging under grant number NIA U01AG009740 and conducted by the University of Michigan.

Disclosure Statement: The authors report there are no competing interests to declare.

References

- American Diabetes Association (2018). Economic Costs of Diabetes in the U.S. in 2017. *Diabetes care*, 41(5), 917–928. <https://doi.org/10.2337/dci18-0007>
- Buttorff, C., Ruder, T., & Bauman, M. (2017). *Multiple chronic conditions in the United States*. RAND Corporation.
https://www.rand.org/content/dam/rand/pubs/tools/TL200/TL221/RAND_TL221.pdf
- Centers for Disease Control and Prevention (2022). *Workplace Health Promotion*.
<https://www.cdc.gov/chronicdisease/resources/publications/factsheets/workplace-health.htm>
- Chen, L. & Sommers, B. D. (2020). *Work Requirements and Medicaid Disenrollment in Arkansas, Kentucky, Louisiana, and Texas, 2018*. American Journal of Public Health, 12, 1208-1210.
- Corallo, B. (2022, January 10). *Analysis of recent national trends in Medicaid and CHIP enrollment*. Kaiser Family Foundation. <https://www.kff.org/coronavirus-covid-19/issue-brief/analysis-of-recent-national-trends-in-medicaid-and-chip-enrollment/>
- Cuello, L. (2021, October 4). *Retroactive coverage waivers: Coverage lost and nothing learned*. Georgetown University Health Policy Institute – Center for Children and Families.
<https://ccf.georgetown.edu/2021/10/04/retroactive-coverage-waivers-coverage-lost-and-nothing-learned/>
- Garfield, R., Rudowitz, R., & Damico, A. (2018a). *Understanding the intersection of Medicaid and work*. Kaiser Family Foundation. <https://files.kff.org/attachment/Issue-Brief-Understanding-the-Intersection-of-Medicaid-and-Work>

Garfield, R., Rudowitz, R., Musumeci, M.B., & Damico, A. (2018b, June). *Implications of work requirements in Medicaid: What does the data say?* Kaiser Family Foundation.

<https://kymedicaidtracker.com/wp-content/uploads/2019/05/Issue-Brief-Implications-of-Work-Requirements-in-Medicaid-What-Does-the-Data-Say.pdf>

Garfield, R., Rudowitz, R., Orgera, K., & Damico, A. (2019a, August). *Understanding the intersection of Medicaid and work: What does the data say?* Kaiser Family Foundation.

<https://files.kff.org/attachment/Issue-Brief-Understanding-the-Intersection-of-Medicaid-and-Work-What-Does-the-Data-Say>

Garfield, R., Orgera, K., & Damico, A. (2019b, January 25). *The uninsured and the ACA: A primer – Key facts about health insurance and the uninsured amidst changes to the Affordable Care Act.* Kaiser Family Foundation. <https://www.kff.org/report-section/the-uninsured-and-the-aca-a-primer-key-facts-about-health-insurance-and-the-uninsured-amidst-changes-to-the-affordable-care-act-how-does-lack-of-insurance-affect-access-to-care/>

Gifford, K., Lashbrook, A., Barth, S., Hinton, E., Rudowitz, R., Guth, M., & Stolyar, L. (2020, October 14). *State Medicaid programs respond to meet COVID-19 challenges: Results from a 50-state Medicaid budget survey for state fiscal years 2020 and 2021.* Kaiser Family Foundation. <https://www.kff.org/medicaid/report/state-medicaid-programs-respond-to-meet-covid-19-challenges/>

Haeder, S. F., Sylvester, S. M., & Callaghan, T. (2021). Lingering Legacies: Public Attitudes about Medicaid Beneficiaries and Work Requirements. *Journal of Health Politics, Policy and Law*, 46, 305–355. <https://doi.org/10.1215/03616878-8802198>

- Hinton, E., Stolyar, L., Rudowitz, R. (2021, March 12). *Medicaid spending and enrollment trends amid the COVID-19 pandemic – Updated for FY 2021 & looking ahead to FY 2022*. Kaiser Family Foundation. <https://www.kff.org/coronavirus-covid-19/issue-brief/medicaid-spending-and-enrollment-trends-amid-the-covid-19-pandemic-updated-for-fy-2021-looking-ahead-to-fy-2022/#:~:text=After%20relatively%20flat%20Medicaid%20enrollment,spending%20would%20increase%20by%208.4%25>
- Jinnett, K., Schwatka, N., Tenney, L., Brockbank, C.V.S., & Newman, L.S. (2017). Chronic conditions, workplace safety, and job demands contribute to absenteeism and job performance. *Health Affairs*, 36(2), 237-244. Doi: 10.1377/hlthaff.2016.1151
- Juster, R.T. & Suzman, R. (1995). An overview of the Health and Retirement Study. *The Journal of Human Resources*, 30, S7-S56. Doi: : 10.2307/146277
- Kaiser Family Foundation. (2019). *Health insurance coverage of the total population*. <https://www.kff.org/other/state-indicator/total-population/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>
- Kaiser Family Foundation. (2022a). *Medicaid waiver tracker: Approved and pending Section 1115 waivers by state*. <https://www.kff.org/medicaid/issue-brief/medicaid-waiver-tracker-approved-and-pending-section-1115-waivers-by-state/#note-1-4>
- Kaiser Family Foundation (2022b). *An Overview of Medicaid Work Requirements: What Happened Under the Trump and Biden Administrations?* <https://www.kff.org/medicaid/issue-brief/an-overview-of-medicaid-work-requirements-what-happened-under-the-trump-and-biden-administrations/>

- Lerner, D.J., Amick III, B.C., Malspeis, S., & Rogers, W.H. (2000). A national survey of health-related work limitations among employed persons in the United States. *Disability and Rehabilitation*, 22(5), 225-232. Doi: 10.1080/096382800296791
- MacLeod, K. E., Ye, Z., Donald, B., & Wang, G. (2022). A Literature Review of Productivity Loss Associated with Hypertension in the United States. *Population Health Management*, 25, 297–308. <https://doi.org/10.1089/pop.2021.0201>
- Markus, A.R. & Rosenbaum, S. (2006, October 1). *The Deficit Reduction Act of 2005: An overview of key Medicaid provisions and their implications for early childhood development services*. The Commonwealth Fund.
[https://www.commonwealthfund.org/publications/fund-reports/2006/oct/deficit-reduction-act-2005-overview-key-medicare-provisions-and#:~:text=The%20Deficit%20Reduction%20Act%20of%202005%20\(DRA\)%20grants%20states%20flexibility,and%20thus%20access%20to%20services.](https://www.commonwealthfund.org/publications/fund-reports/2006/oct/deficit-reduction-act-2005-overview-key-medicare-provisions-and#:~:text=The%20Deficit%20Reduction%20Act%20of%202005%20(DRA)%20grants%20states%20flexibility,and%20thus%20access%20to%20services.)
- Medicaid and CHIP Payment and Access Commission. (2017, October). *Work as a condition of Medicaid eligibility: Key take-aways from TANF*. <https://www.macpac.gov/wp-content/uploads/2017/10/Work-as-a-Condition-of-Medicaid-Eligibility-Key-Take-Aways-from-TANF.pdf>
- Medicaid.gov. (n.d.). *Expenditure reports from MBES/CBES*. Centers for Medicare & Medicaid Services. <https://www.medicare.gov/medicaid/financial-management/state-expenditure-reporting-for-medicare-chip/expenditure-reports-mbescbes/index.html>
- Ofstedal, M.B., Weir, D.R., Chen, K.-T., & Wagner, J. (2011, June). *HRS documentation report: Updates to HRS sample weights*. University of Michigan Survey Research Center.
<https://hrs.isr.umich.edu/sites/default/files/biblio/dr-013.pdf>

- Ohtake, P. J., Lee, A. C., Scott, J. C., Hinman, R. S., Ali, N. A., Hinkson, C. R., Needham, D. M., Shutter, L., Smith-Gabai, H., Spires, M. C., Thiele, A., Wiencek, C., & Smith, J. M. (2018). Physical Impairments Associated With Post-Intensive Care Syndrome: Systematic Review Based on the World Health Organization's International Classification of Functioning, Disability and Health Framework. *Physical Therapy*, 98, 631–645. <https://doi.org/10.1093/ptj/pzy059>
- Rudowitz, R., Garfield, R., & Hinton, E. (2019, March 6). *10 things to know about Medicaid: Setting the facts straight*. Kaiser Family Foundation. <https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-medicaid-setting-the-facts-straight/>
- Shafer, P., Huberfeld, N., & Golberstein, E. (2020, May 8). Waivers will leave thousands responsible for coronavirus treatment costs. *Health Affairs Forefront*. Doi: 10.1377/forefront.20200506.111318
- Siu, A.M.H., Hung, A., Lam, A.Y.L. & Cheng, A. (2013). Work limitations, workplace concerns, and job satisfaction of persons with chronic disease. *Work*, 45(1), 107-115. doi: 10.3233/WOR-121550
- Sommers, B. D., Goldman, A. L., Blendon, R. J., Orav, E. J., & Epstein, A. M. (2019). Medicaid Work Requirements - Results from the First Year in Arkansas. *New England Journal of Medicine*, 381, 1073-1082. <https://doi.org/10.1056/NEJMs1901772>
- Sommers, B. D., Chen, L., Blendon, R. J., Orav, E. J., & Epstein, A. M. (2020). Medicaid Work Requirements In Arkansas: Two-Year Impacts On Coverage, Employment, And Affordability Of Care. *Health Affairs*, 39, 1522–1530. <https://doi.org/10.1377/hlthaff.2020.00538>

- Tipirneni, R., Goold, S.D., & Ayanian, J.Z. (2018). Employment status and health characteristics of adults with expanded Medicaid coverage in Michigan. *JAMA Internal Medicine*, 178(4), 564-567. Doi: 10.1001/jamainternmed.2017.7055
- United Health Foundation. (2016). *2016 senior report*. America's Health Rankings. <https://www.americashealthrankings.org/learn/reports/2016-senior-report/findings>
- University of Michigan. (2016). *Health and Retirement Study – 2016 HRS Core public use dataset*. <https://hrsdata.isr.umich.edu/data-products/2016-hrs-core>
- University of Michigan. (2018). *Health and Retirement Study – 2018 HRS Longitudinal File public use dataset*. <https://hrsdata.isr.umich.edu/data-products/rand-hrs-longitudinal-file-2018>
- van Rijn, R.M., Robroek, S.J.W., Brouwer, S., & Burdorf, A. (2013). Influence of poor health on exit from paid employment: A systematic review. *Journal of Occupational Medicine*, 71(4), 295-301. Doi: 10.1136/oemed-2013-101591
- Washington Post Live. (2021, September 24). *Transcript: The Great Resignation with Molly M. Anderson, Anthony C. Klotz, PhD & Elaine Welteroth*. The Washington Post. <https://www.washingtonpost.com/washington-post-live/2021/09/24/transcript-great-resignation-with-molly-m-anderson-anthony-c-klotz-phd-elaine-welteroth/>
- Wilson JC & Thompson J (2018). Nation's First Medicaid Work Requirement Sheds Thousands From Rolls In Arkansas. *Health Affairs Forefront*. <https://www.healthaffairs.org/doi/10.1377/forefront.20181001.233969>

Table 1. Demographic Characteristics and Health Status of Study Sample. All descriptive statistics are weighted.

	Total Sample (n=1460)	Working < 20 hours per week (66.3% of total sample)	Working ≥ 20 hours per week (33.7% of total sample)	p-value
Variable	%	%	%	
Mean Age (SD ^a)	56.8 (4.2)	57.1 (4.3)	56.0 (3.9)	0.01
Race				0.23
Non-Hispanic White	46.5	45.2	50.3	
Non-Hispanic Black	21.3	23.4	15.5	
Hispanic	21.8	21.7	22.1	
Non-Hispanic Other	10.4	9.7	12.2	
% Female	54.8	56.6	49.7	0.18
Education				0.02
Less than High School	33.4	28.3	17.8	
High School Degree	25.6	31.6	38.3	
GED ^b	10.0	11.2	6.8	
Some College	13.4	13.6	12.9	
College Degree or Higher	17.7	15.4	24.	
Marital Status				0.15
Married	36.3	34.9	39.9	
Partnered	8.6	9.4	6.5	
Separated/Divorced	30.2	28.4	35.2	
Widowed	6.1	6.6	4.9	
Never Married	18.9	20.7	13.6	
Difficulties with activities of daily living (ADLs%)				<.0001
None	71.8	64.6	91.8	
One	15.7	19.7	4.8	
Two	8.7	10.7	3.1	
Three	3.8	5.1	0.3	
Number of chronic health conditions (Mean; SD)	2.6 (1.9)	2.9 (1.9)	1.5 (1.4)	<.0001
Number of chronic health conditions				<.0001
0 conditions	12.0	7.2	25.7	
1 Condition	18.2	14.4	28.9	
2 Conditions	21.4	20.2	24.6	
3 or more conditions	48.4	58.2	20.8	

^aStandard Deviation; ^bCompleted a General Educational Development Program

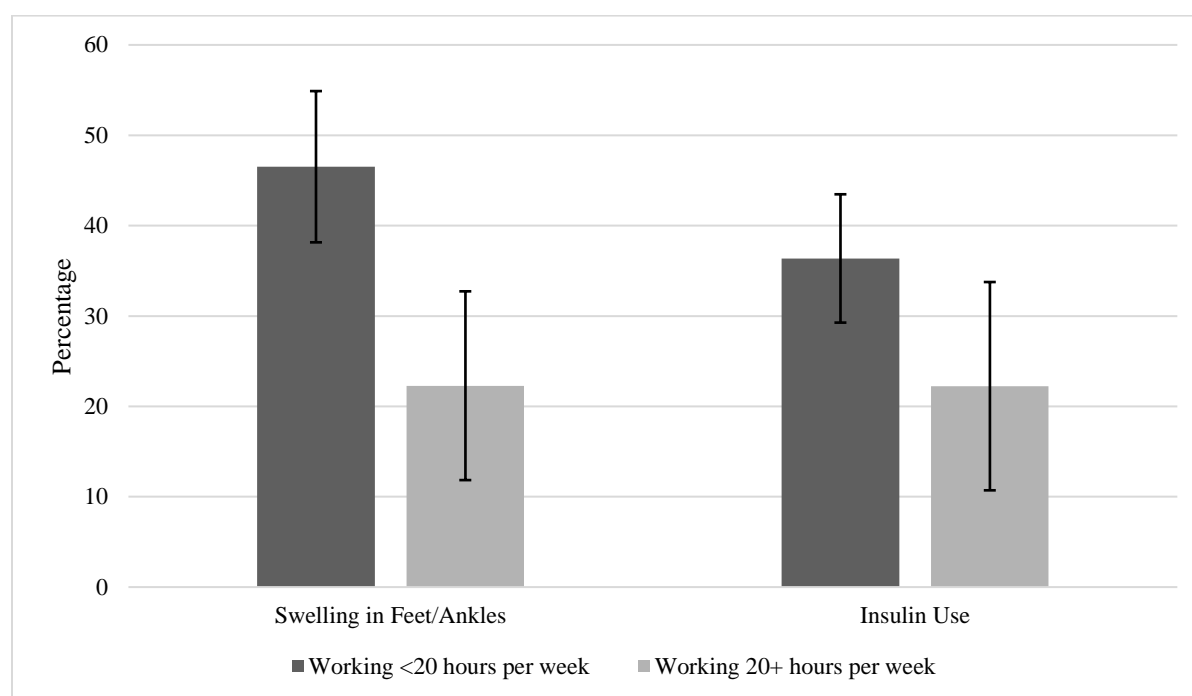
Table 2. Logistic Regression Models Evaluating Associations Between Individual Chronic Health Conditions and Reduced Workforce Participation (working less than 20 hours per week; n=1460).

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Chronic Health Condition								
Diabetes	1.58 (1.01-2.48)							
Lung Disease		3.79 (2.10-6.85)						
Arthritis			2.14 (1.48-3.11)					
Stroke				5.66 (2.22-14.43)				
Cancer					1.25 (0.61-2.58)			
Heart Disease						3.10 (1.81-5.32)		
Psych Problems							2.79(1.70-4.60)	
Hypertension								2.12 (1.40-3.22)
Age (years)	1.10 (1.03-1.17)	1.11 (1.04-1.18)	1.08 (1.01-1.14)	1.10 (1.03-1.18)	1.03 (1.03-1.17)	1.09 (1.03-1.16)	1.11 (1.04-1.18)	1.08 (1.02-1.15)
Race/Ethnicity								
NH White (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NH Black	1.37 (0.80-2.35)	1.75 (1.00-3.07)	1.46 (0.84-2.54)	1.44 (0.82-2.51)	1.42 (0.83-2.44)	1.47 (0.83-2.60)	1.57 (0.86-2.87)	1.28 (0.76-2.18)
Hispanic	0.81 (0.48-1.37)	1.17 (0.71-1.94)	0.94 (0.55-1.59)	0.95 (0.57-1.59)	0.90 (0.54-1.51)	0.99 (0.59-1.64)	1.02 (0.59-1.75)	0.87 (0.51-1.48)
NH Other	0.80 (0.40-1.61)	1.04 (0.52-2.05)	0.88 (0.44-1.75)	0.91 (0.45-1.84)	0.85 (0.47-1.93)	0.88 (0.43-1.81)	0.91 (0.45-1.81)	0.84 (0.40-1.75)
Sex								
Male (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.46(0.97-2.20)	1.42 (0.95-2.13)	1.35 (0.90-2.03)	1.51 (0.99-2.29)	1.34 (0.91-1.98)	1.45 (0.96-2.21)	1.35 (0.92-2.01)	1.53 (1.01-2.34)
Marital Status								
Married (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Partnered	1.88 (0.99-3.58)	1.67 (0.84-3.31)	1.92 (1.02-3.61)	1.84 (0.98-3.48)	1.88 (1.00-3.51)	2.19 (1.20-4.02)	1.84 (0.99-3.41)	1.70 (0.84-3.44)
Separated/ Divorced	0.80 (0.46-1.37)	0.78 (0.44-1.38)	0.78 (0.46-1.34)	0.83 (0.48-1.44)	0.82 (0.48-1.42)	0.75 (0.44-1.27)	0.78 (0.45-1.34)	0.80 (0.45-1.38)
Widowed	1.04 (0.48-2.25)	1.06 (0.50-2.24)	0.92 (0.44-1.95)	1.11 (0.51-2.41)	1.08 (0.50-2.33)	0.96 (0.40-2.33)	0.92 (0.40-2.10)	0.99 (0.45-2.15)
Never Married	2.02 (1.04-3.90)	2.04 (1.06-3.90)	1.93 (1.02-3.67)	2.17 (1.12-4.19)	2.05 (1.06-3.96)	2.04 (1.07-3.92)	1.94 (1.00-3.76)	2.10 (1.08-4.06)
Education								
High School Diploma	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Less than high school	2.17 (1.33-3.54)	1.78 (1.06-3.01)	2.08 (1.27-3.40)	2.32 (1.41-3.81)	2.17 (1.32-3.56)	2.08 (1.27-3.43)	2.04 (1.21-3.42)	2.11 (1.28-3.45)
GED	2.37 (1.29-4.37)	1.87 (1.04-3.36)	1.98 (1.12-3.53)	2.36 (1.28-4.34)	2.29 (1.24-4.21)	2.02 (1.11-3.69)	1.94 (1.10-3.42)	2.19 (1.27-3.78)
Some college	1.52 (0.76-3.07)	1.47 (0.72-3.00)	1.39 (0.72-2.68)	1.74 (0.85-3.55)	1.45 (0.72-2.94)	1.32 (0.66-2.65)	1.31 (0.66-2.62)	1.51 (0.76-2.98)
College degree or higher	1.01 (0.58-1.76)	0.92 (0.53-1.59)	0.94 (0.54-1.66)	0.91 (0.50-1.64)	0.97 (0.55-1.69)	0.98 (0.57-1.71)	0.86 (0.50-1.50)	0.99 (0.57-1.75)
Number of difficulties with Activities of Daily Living (ADLs)								
None (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
One	6.00 (2.65-13.58)	5.87 (2.45-14.08)	5.00 (2.26-11.07)	5.58 (2.54-12.27)	6.09 (2.70-13.70)	6.08 (2.68-13.79)	5.43 (2.18-12.10)	5.44 (2.38-12.47)
Two	4.48 (1.78-11.26)	4.47 (1.74-11.46)	3.90 (1.48-10.27)	4.30 (1.67-11.05)	4.66 (1.85-11.73)	4.44 (1.69-11.66)	3.89 (1.44-10.48)	4.13 (1.61-10.56)
Three	155.80 (21.05-1152.93)	125 (16.66-948.37)	27.43 (5.02-150.04)	140.32 (18.81-1046.76)	151.54 (20.77-1105.5)	141.30 (18.89-1056.68)	23.47 (3.99-138.08)	29.37 (4.92-175.17)

Table 3. Logistic Regressions Model of the Association Between Number of Chronic Health Conditions and Reduced Workforce Participation

Variable	Model 1		Model 2	
	OR	95% CI	OR	95% CI
Number of Chronic Conditions				
Two or more conditions	4.02	2.70-5.99		
0-1 conditions (reference)	1.00	2.68-6.02		
Number of Chronic Conditions				
Three or more conditions			5.30	3.17-8.86
0-2 conditions (reference)			1.00	
Age	1.07	1.00-1.15	1.07	
Education				
Less than high school	1.88	1.12-3.13	1.83	1.11-3.00
HS Diploma (reference)	1.00		1.00	
GED program	1.92	1.13-3.28	1.65	0.92-2.96
Some College	1.72	0.83-3.53	1.49	0.72-3.09
College Degree or Higher	0.93	0.52-1.66	0.80	0.44-1.44
Marital Status				
Separated/Divorced	0.74	0.43-1.25	0.74	0.84-3.43
Widowed	0.84	0.38-1.87	0.87	0.36-2.13
Never Married	1.58	0.85-2.94	1.77	0.92-3.39
Married (reference)	1.00		1.00	
Gender				
Female	1.33	0.87-2.05	1.51	0.99-2.31
Male (reference)	1.00		1.00	
Race/Ethnicity				
Non-Hispanic White (reference)	1.00		1.00	
Non-Hispanic Black	1.64	0.98-2.75	1.82	1.03-3.19
Hispanic	1.01	0.58-1.77	1.17	0.68-2.02
Non-Hispanic Other	1.02	0.48-2.17	1.14	0.55-2.36

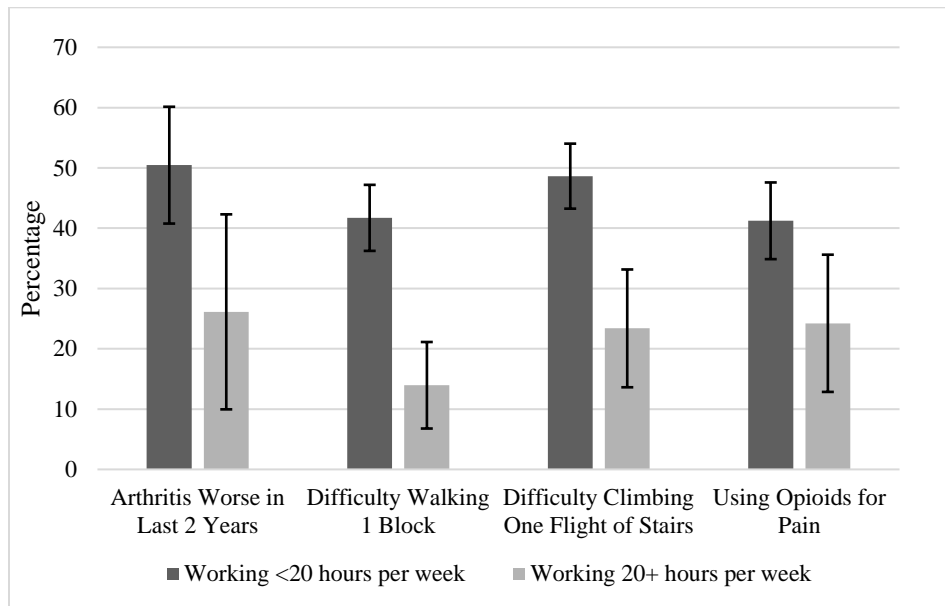
Figure 1. Self-Reported Indicators of Disease Severity and Workforce Participation Among Those with Diabetes



Error bars represent the 95% confidence intervals.

Analyses adjusted for age, race/ethnicity, sex, marital status, and education.

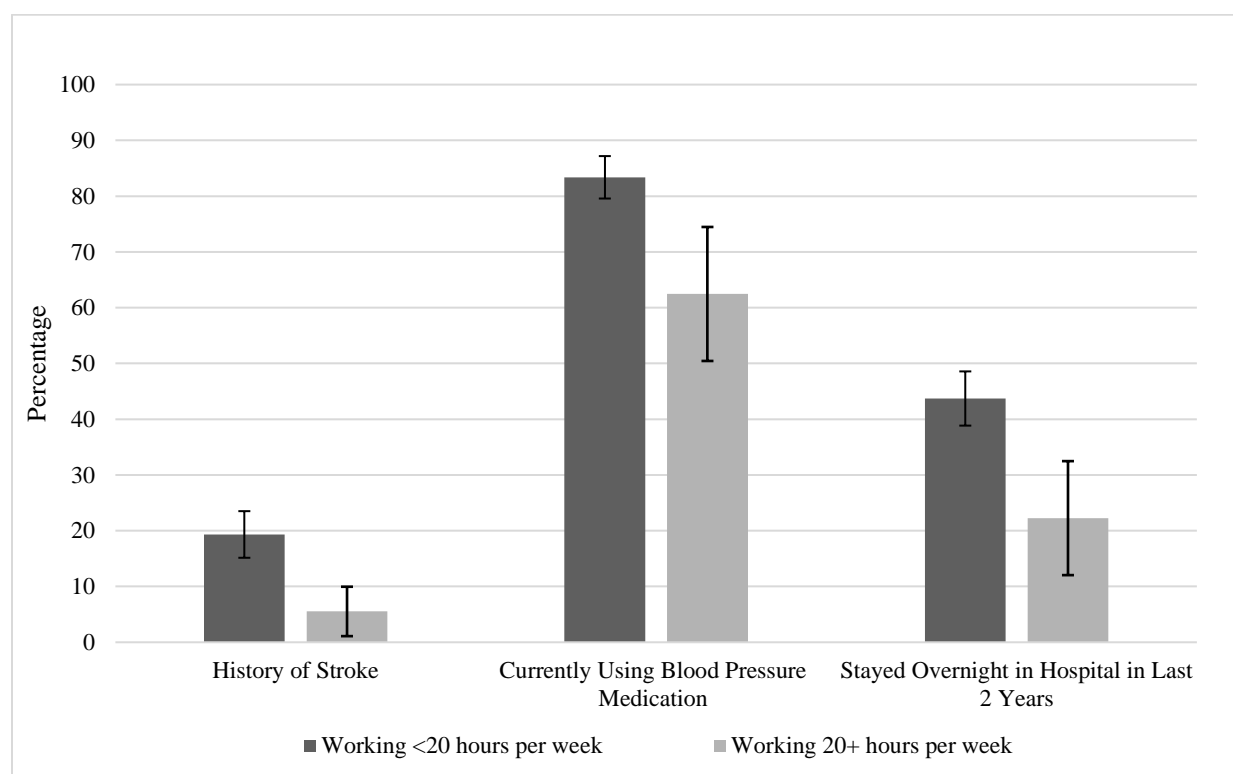
Figure 2. Self-Reported Indicators of Disease Severity and Workforce Participation Among Those with Arthritis



Error bars represent the 95% confidence intervals.

Analyses adjusted for age, race/ethnicity, sex, marital status, and education.

Figure 3. Self-Reported Indicators of Disease Severity and Workforce Participation Among Those with Hypertension



Error bars represent the 95% confidence intervals.

Analyses adjusted for age, race/ethnicity, sex, marital status, and education.