

Research Article

Racial Disparities in Financial Security, Work and Leisure Activities, and Quality of Life Among the Direct Care Workforce

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Abstract

Background and Objectives: Personal care, home health, and nursing aides provide the majority of care to chronically ill and disabled older adults. This workforce faces challenging working conditions, resulting in high turnover and workforce instability that affect the quality of care for older adults. We examine financial security, work–life balance, and quality of life of Black, Hispanic, and workers of other race/ethnicity compared to White workers.

Research Design and Methods: We hypothesize that Black and Hispanic workers experience greater financial insecurity, spend more time on work-related activities and have less time available for leisure activities, and have a lower quality of life compared to White workers. To test these hypotheses, we analyze the American Time Use Survey using descriptive analyses and multivariable and compositional regression.

Results: Black and Hispanic individuals were 2–3 times more likely to live in poverty than White individuals. The time use analysis indicated that Black and Hispanic workers spent more time on work-related activities and less time on nonwork-related activities, including longer work commutes and less time exercising. In analyses of aggregated paid/unpaid work and leisure, Black workers were the only group that spent significantly more time working and less time on leisure activities compared to White workers. This may explain the lower quality of life that we only observed in Black workers.

Discussion and Implications: Racial/ethnic disparities in well-being among direct care workers may affect the care older adults receive and contribute to widening inequities in this workforce and society. Policymakers should direct efforts toward securing funding for workers, incentivizing employer provisions, and implementing racial equity approaches.

Keywords: American Time Use Survey, Financial security, Quality of life, Time diary data, Worker well-being

More than 8.3 million adults receive long-term care services (Harris-Kojetin et al., 2019) and that number is expected to grow as the size of the population 65 years or older will reach approximately 70 million by 2030 (Vincent & Velkoff, 2010). This change in age structure increases demand for

care services that help chronically ill and disabled older adults with activities of daily living and is a large driver for the health care industry becoming the fastest growing industry in the United States. Direct care workers, which include personal care, home health, and nursing aides, will

contribute approximately 1.3 million jobs to the 1.9 million new health care jobs projected by 2028 (U.S. Bureau of Labor Statistics, 2020). The largest growth is anticipated for direct care workers employed in home health services (Paraprofessional Healthcare Institute, 2020), a trend that reflects a shift toward providing long-term care services increasingly in home- and community-based settings (Spetz et al., 2015).

Working conditions in direct care occupations are physically demanding. Responsibilities include assisting individuals with bathing, dressing, grooming, walking, eating, and cleaning the house, among many other tasks. In addition to limited formal training, poor supervision, and overtime hours being challenges for direct care workers (Spetz et al., 2019), they also often face financial insecurity (Frogner et al., 2016; Himmelstein & Venkataramani, 2019), with wages hovering around the minimum wage and incomes often below the poverty level (Scales, 2020). While burnout, emotional stress, and turnover are high among many health care occupations (Cooper et al., 2016; Khamisa et al., 2015; Shanafelt et al., 2012), they are particularly high in direct care workers (National Academies, 2008). This affects the quality of care of older and disabled adults because turnover, vacancy rates, and stability in the workforce are key factors affecting quality of care (Castle & Engberg, 2007).

Health care workers' well-being, both at work and outside of the workplace, their work-life balance, and daily struggles are overlooked and understudied domains of overall well-being. A recent study examined financial stability and well-being as measured by time diary data in low- and high-skilled long-term care and supports (LTSS) workers compared to other health care workers. Results showed that both low- and high-skilled LTSS workers had lower wages and higher poverty compared to other health care workers. Activities differed mostly for high-skilled LTSS workers compared to other high-skilled health care workers, but the low-skill LTSS workforce spent more time on paid and unpaid activities than other low-skill workers (Muench et al., 2020).

Our study adds to the literature by focusing on racial and ethnic disparities in well-being among direct care workers, workers, who are especially vulnerable to struggles at work and at home. The specific aim of our study is to examine potential racial disparities in financial insecurity, in key domains of life such as time working, traveling to work, carrying out household chores, caring for children, exercising, and eating and drinking, and in quality of life. To assess activity patterns, we use time diary data. Such data are useful for studying well-being as they capture activities in context and are less at risk for decontextualizing well-being compared to aggregate well-being measures (Freedman et al., 2019). Examining economic insecurity and quality of life in the context of how workers allocate their time on work, daily responsibilities, and leisure activities provides rich insights into the complex tradeoffs and challenging circumstances this workforce navigates daily.

Racial disparities in health (Lurie & Dubowitz, 2007), labor markets (Lang & Lehman, 2012), and social capital (Hero, 2003; Lui et al., 2017) have long been documented. The novel coronavirus pandemic has illustrated the extent to which structural racism persists across these domains (Ways and Means Committee, 2020) and has exposed the extraordinary vulnerability of direct care workers, especially from Black and Hispanic communities that have substantially larger representation in entry-level direct care health care jobs (Frogner et al., 2016). While this study does not examine data spanning the period when the coronavirus pandemic emerged, it establishes important baseline data on direct care workers' work-life well-being.

Conceptual Framework and Hypotheses

Our study is theoretically embedded in the Racism and Health Model (Williams & Mohammed, 2013). The model postulates that the social status of different racial groups is shaped by social institutions and by institutional and cultural racism (unobserved in this study) and that the social status associated with race, together with gender, marital status, and socioeconomic status, directly affects a variety of outcomes including stress, societal resources, and socioeconomic opportunities (proximal pathways). Responses to these proximal pathways, such as an individual's behavioral health practices, immune system responses, and self-esteem, in turn affect health outcomes, including morbidity, mortality, disability, and overall well-being.

In this study, we measure the proximal outcomes of wage, poverty, and time spent on paid and unpaid work activities. These proximal pathways feed into behavioral patterns, such as sleeping, exercising, eating, and drinking (responses), which determine well-being and health. In this context, individuals from different racial/ethnic groups are postulated to experience differences in financial insecurity, work-life balance, and overall well-being. Specifically, we hypothesize that Black and Hispanic workers are financially more vulnerable (H1), have less time available for health-promoting leisure activities with more time spent on paid and unpaid work activities (H2), and also have lower quality of life (H3) compared to White workers. Figure 1 provides a graphical representation of our adopted Racism and Health model showing the effect of hardship and inequality on antecedents (proximal pathways and responses) of well-being and health. In theory, the proximal pathways and responses mediate the relationship between race and health; however, our data source does support a formal mediation analysis (discussed below).

Design and Methods

Data

We used the publicly available, nationally representative American Time Use Survey (ATUS) for a pooled

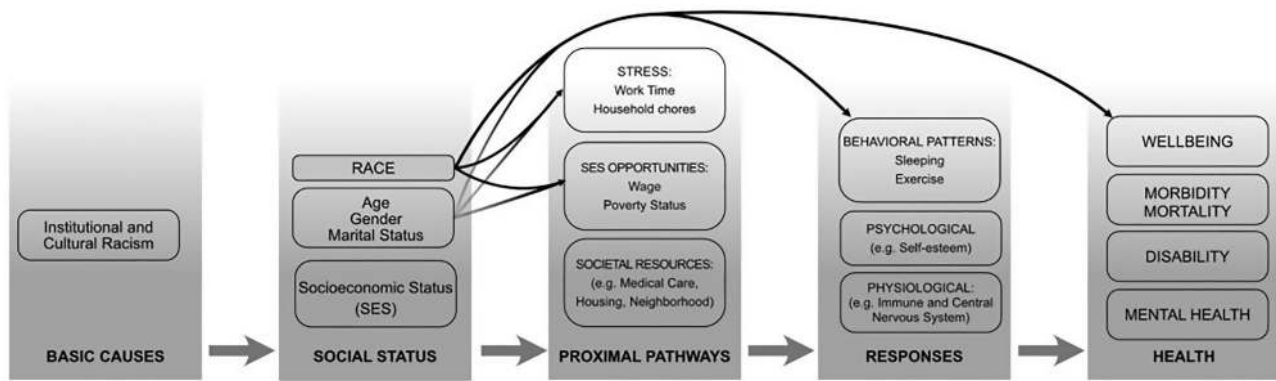


Figure 1. Conceptual framework. *Note:* Our conceptual framework is an adaptation of Williams and Mohammed's Racism and Health Model. Black arrows indicate the empirical relationships tested.

cross-sectional study spanning the years 2003–2018. The ATUS is conducted by the Bureau of Labor Statistics and collects data on a subset of individuals from the Current Population Survey (U.S. Census Bureau, 2019b). In each year, the total sample consists of approximately 13,000 individuals aged 15 and older. The main component of the survey is a time diary in which details of participant's daily activities over a 24-h time period are chronologically collected for one day of the week. The survey also collects demographic and income information administered during specific years. In addition to the 2003–2018 time diary data, we use the well-being module for information on quality of life, collected in the years 2012 and 2013. We obtained all data through the Integrated Public Use Microdata Series (Ruggles et al., 2019).

Sample

Using the U.S. Census Bureau's 2010 Occupation Classification System in ATUS, we identified individuals in the direct care workforce in two occupational groups: nursing, psychiatric, and home health aides (3,600) and personal and home care aides (4,610). Both occupations require a high school diploma or equivalent (though some positions may not require it) and are considered entry-level health care jobs (U.S. Census Bureau, 2019a). We excluded individuals younger than the age of 18 and individuals who were not actively employed. No individuals were excluded due to missing data in key study variables. The final analytic sample consisted of 1,825 workers, representing 2,137,282 individuals in the U.S. population from all states.

Measures

We examined three types of outcomes: financial security, time spent on daily activities, and quality of life. First, to assess financial security, we measured two outcomes: poverty, assessed as the percentage of the workforce with household income below 185% of the federal poverty level, and average hourly wage. ATUS includes two poverty measures, household income below the 135% and 185% of the

federal poverty level. We used the upper threshold because it indicates greater financial instability. It is also a common eligibility criterion for a number of federal programs (U.S. Department of Health and Human Services, 2015). Hourly wage was calculated as weekly earnings divided by hours worked per week. We adjusted earnings for inflation using 2018 as the base year. Second, activity measures were chosen from a large number of activities available in ATUS. We selected work and nonwork activities that reflected considerable time in people's days, such as time working and time traveling to work. We also selected activities that shed light on responsibilities outside of work, including time spent on household activities and caring for children. Leisure activities included socializing, exercising, eating and drinking, and watching TV. Activities are measured in the number of minutes spent per day carrying out the activities. Third, quality of life scores were obtained from the well-being model using a life satisfaction scale. The scale ranges from 0 to 10 and respondents indicated how they felt about where they stand in regard to the best/worst possible life for them. A score of 0 indicates life at its worst and 10 indicates life at its best. This measure was available for a small subpopulation of our sample ($n = 217$) due to the well-being module being collected in the years 2012 and 2013 only; this limited our capacity to explicitly assess the possibility that poverty and time spent on activities mediate the relationship between race/ethnicity and overall well-being.

Our key independent variable was a categorical variable measuring the race/ethnicity of the worker. We coded four groups: White (reference), Black, Hispanic, and other race (Asian, Native American or Alaskan Native, Hawaiian or Pacific Islander, mixed race, or other). We gave priority to individuals' ethnicity, for example, a worker identifying as White race or mixed race with Hispanic ethnicity was included in the Hispanic group. Additional measures of interest were sociodemographic variables including age, gender, marital status, education, household size, presence of a child younger than the age of 18 in the home, whether the worker was foreign-born, industry of employment, urban/rural residence, and U.S. Census region. Age was

a continuous measure; all other measures were binary or categorical. Marital status was measured as married (reference), single, or divorced/widowed/separated; education was binary indicating some college versus no college; and household size was measured as one person (reference), two or three people, or four or more people. Industry categories were health services (reference), hospital, public, social assistance, and other. U.S. regions included Northeast (reference), Midwest, South, and West. Due to the limited number of direct care workers represented in ATUS, we used region-fixed effects rather than state-fixed effects to reduce degrees of freedom. We included survey year as a continuous variable to adjust for trends over time.

Statistical Analysis

We began by conducting descriptive analyses to obtain sample characteristics by race/ethnicity. Statistical

significance in sample characteristics was assessed using chi-square tests for categorical variables and analysis of variance for continuous variables. To test hypotheses H1–H3, we first obtained descriptive analyses for all outcomes for the sample overall and by race/ethnicity. We then examined differences by race/ethnicity in economic security measures (H1) using unadjusted and adjusted logistic regression for binary outcomes (poverty) and ordinary least squares (OLS) regression for hourly wage. We log-transformed wage and also included age squared in the adjusted wage model to account for the potential for diminishing returns with age in addition to including all covariates mentioned above.

To assess differences by race/ethnicity in work–life balance (H2), we analyzed the time diary data using compositional regression. A compositional analysis is a useful approach for time allocation data with many applications in economics, psychology, and health research (Dumuid

Table 1. Sample Characteristics for Direct Care Workers (N = 1,825) by Race, American Time Use Survey 2003–2018

Variable	White (N = 845)	Black (N = 626)	Hispanic (N = 256)	Other/Mixed ^a (N = 98)	Statistic ^b
<i>Occupation</i>					
Nursing, psychiatric, and home health aides (%; N = 1,298)	69.1	73.7	62.4	72.9	2.02
Personal and home care aides (%; N = 527)	30.9	26.3	37.6	27.1	
<i>Demographics</i>					
Mean age, SD	41.05 (15.28)	40.38 (12.85)	40.20 (12.75)	43.52 (12.55)	1.04
Female (%)	84.8	87.3	90.2	84.6	0.99
Some college or more (%)	58.2	50.7	39.6	65.1	5.83***
Marital status (%)					4.57***
Married	43.5	32.5	46.6	62.8	
Divorced/separated/widowed	23.8	20.2	21.3	13.0	
Single	32.8	47.3	32.1	24.2	
Children in the household (yes; %)	37.5	55.5	61.6	49.1	12.32***
Number of people in household (%)					5.77***
1 person	13.0	14.1	6.0	12.1	
2–3 people	60.5	52.2	45.3	38.2	
4 or more	26.6	33.7	48.6	49.7	
Foreign born (%)	5.0	28.8	45.0	64.3	50.50***
Living in a rural/nonmetropolitan area (%)	34.4	11.0	7.3	10.8	29.77***
Industry (%)					1.41
Health services	64.7	71.6	68.0	57.3	
Hospitals industry	15.6	13.1	8.7	20.9	
Public sector	2.8	1.7	2.4	1.7	
Social assistance	9.6	7.5	14.4	15.2	
Other	7.3	6.1	6.5	5.0	
Census region (%)					17.47***
Northeast	21.9	24.7	27.0	22.0	
Midwest	37.9	21.4	8.8	12.6	
South	22.2	48.5	29.8	21.9	
West	18.0	5.5	34.4	43.5	

Notes: ANOVA = analysis of variance.

^aOther/mixed race included Asian, Native American, Hawaiian, or mixed race.

^bTesting between groups: ANOVA for continuous variables (F statistic) and chi-squared test for categorical variables (chi-square statistic).

*p < .05, **p < .01, ***p < .001.

et al., 2018; Garhammer, 2002; Gershuny & Sullivan, 2003; McGregor et al., 2019; Robinson & Godbey, 1997). It is particularly well suited for data that sum to 100%, such as the ATUS time diary data that sum to 24 h. Using conventional statistical methods such as OLS can lead to bias when used with time use data because of collinearity between activities. Furthermore, a compositional analysis addresses the fact that time allocation of daily activities does not occur in isolation but consists of time constraints and tradeoffs. For example, when measuring the relationship of race on a single activity, such as time spent working, the compositional analysis estimates the effect of race/ethnicity on time working by considering time spent on all other activities. This is accomplished by expressing the outcome variable as a function of all activities (Chastin et al., 2015; Hron et al., 2012; Mert et al., 2018; Muller et al., 2018). In other words, individual activities represent the relative contributions in the overall 24-h time period. Thus, relevant information is conveyed by ratios between activities and differences between relative contributions of an activity should be considered in ratios instead of absolute differences (Muller et al., 2018).

Specifically, the approach includes a log-ratio transformation (log base 2) of the compositional outcome to move data from the compositional space to unrestricted real space, which then allows one to proceed with conventional statistical methods, including OLS. Estimated coefficients can be re-transformed to the original unit (i.e., proportion/percent) by taking the base of 2 to the power of the coefficient 2^{β_k} . For example, an estimate of 1.22 can be interpreted as an activity that dominates over other activities by 22% compared to the reference group. Similarly, an estimate of 0.86 can be interpreted as a 14% decrease of one activity as a part of the entire composition of activities compared to the reference group. We report all compositional estimates in this manner for ease of interpretation. Please refer to [Supplementary Material](#) for additional technical information.

We also estimated an alternative model specification to test whether preferences in work and leisure activities could explain time use differences observed by race/ethnicity by grouping activities into leisure and paid/unpaid work activities.

Finally, we measured differences by race/ethnicity in quality of life (H3) using OLS regression. While an ordinal-level regression would be indicated for this measure, we are not able to estimate a 10-point scale on the small sample for which the measure was available. Because scores on this 10-point scale were approximately normally distributed, we opted for an OLS regression. All analyses were conducted with using the “survey” package in R (Lumley, 2004) and were adjusted with weights provided by ATUS to produce statistics that represent the full U.S. population (Hofferth et al., 2018). Statistical significance was indicated at conventional levels (95% confidence interval [CI] with alpha at 0.05).

Results

Approximately two thirds of direct care workers were employed as nursing, psychiatric, or home health aides ($N = 1,298$) and one third worked as personal or home care aides ($N = 527$). The racial/ethnic compositions of these occupational groups were not statistically significantly different from each other. [Table 1](#) presents characteristics of the sample by race. Hispanic workers and individuals of other mixed race/ethnicities were more likely to be married, more likely to have children at home, and more likely to live with more than four people in a household. White workers were more likely to live in a rural area compared to other workers.

Financial Instability (H1)

Descriptive analyses showed that 70% of Black and 75% of Hispanic workers experienced household poverty compared to 55% of White workers ($p < .001$; [Table 2](#)). In adjusted multivariate regressions controlling for age, gender, marital status, education, children in the household, number of people in the household, foreign born, industry, U.S. region, and survey year, Black and Hispanic workers were approximately 2.7 times more likely than White workers to live in poverty ($p < .001$; [Table 3](#)). Noteworthy, individuals who reported having a child in the household were 8.3 times more likely to experience household poverty ($p < .001$). Hourly wage did not significantly differ by race/ethnicity in both descriptive and adjusted regression analyses.

Time Spent on Activities—Compositional Analysis (H2)

To test whether Black and Hispanic workers spent more time on work-related and nonwork-related activities compared to White workers, we began by calculating the average time spent on activities (in minutes), followed by estimating unadjusted and adjusted multivariate compositional regression models. Descriptive results are summarized in [Table 2](#) and regression results are presented in [Figure 2](#) and [Table 4](#). Black and mixed-race workers spent significantly more time at work, 331 min for Black workers and 361 min for mixed-race workers compared to 291 min for White workers ($p = .002$) and all race/ethnicity groups spent more time traveling to work than White workers, with Black workers reporting 28 min, Hispanic workers reporting 33 min, and mixed-race workers reporting 29 min compared to 22 min reported by White workers ($p < .001$). Compositional adjusted regression analyses found that time spent by Black workers working and commuting to work dominated over other activities at 22% and 31%, respectively, compared to White individuals' work and commuting activities, though only commuting was statistically significant in adjusted models

Table 2. Descriptive Statistics of Outcome Measures

Outcome	Overall (<i>N</i> = 1,825)	White (<i>N</i> = 845)	Black (<i>N</i> = 626)	Hispanic (<i>N</i> = 256)	Other/Mixed ^a (<i>N</i> = 98)	Statistic ^b
<i>Financial security</i>						
Household poverty (income lower than 185% FPL; %)	55.4	40.1	70	75	59.1	10.75***
Hourly wage, mean (<i>SD</i>)	13.12 (7.46)	13.16 (7.58)	13.17 (6.46)	12.42 (8.48)	14.37 (8.36)	0.86
<i>Activities in minutes, mean (SD)</i>						
Work	306.9 (8)	291.6 (11.7)	331.1 (13.7)	286.9 (19.2)	361.6 (36.7)	2.71**
Work-related travel	26 (1.2)	22.2 (1.4)	28.1 (1.9)	32.6 (3.7)	29.4 (7.4)	3.69***
Household activities	106 (3.5)	113.8 (5.6)	84.1 (4.9)	126.4 (9.8)	101.4 (11.5)	7.94***
Childcare	32.4 (2.5)	33.2 (3.8)	33 (3.3)	25.6 (3.8)	39.9 (20)	0.99
Eating or drinking	59.2 (1.7)	64.5 (2.8)	45.4 (2.1)	62.2 (3)	78.5 (9.3)	15.15***
Sleep	503.7 (4.9)	505.6 (7.1)	496.3 (9.1)	521.6 (10.8)	478.6 (18.1)	1.79*
Socializing	216.3 (6.2)	221.7 (8.3)	223.2 (13.1)	196.4 (14.2)	190.4 (23)	1.85*
Watching TV	128 (5)	125.6 (7.2)	142.2 (10.5)	121.4 (10.1)	93.3 (13.1)	2.87**
Sport	9.9 (1.3)	13.3 (2.3)	6 (1.3)	9 (2.7)	4.1 (1.6)	4.10
<i>Well-being, mean (SD)</i>						
Quality of life (1–10)	6.95 (2.05)	7.11 (1.90)	6.56 (2.16)	7.17 (2.06)	7.81 (1.85)	1.45

Notes: ANOVA = analysis of variance; FPL = Federal poverty level.

^aOther/mixed race included Asian, Native American, Hawaiian, or mixed race.

^bTesting between groups: ANOVA for continuous variables (*F* statistic) and chi-squared test for categorical variables (chi-square statistic).

p* < .05, *p* < .01, ****p* < .001.

(*p* = .011). In unadjusted results, Hispanic workers also spent more time traveling to work, with an average commute that was 30% longer than the average of White workers (*p* = .026).

Several differences emerged across nonwork activities for Black and Hispanic workers compared to White workers. Adjusting for all study variables, Black workers spent 36% less time on household activities (*p* < .001), 38% less time eating and drinking (*p* < .001), 18% less time exercising (*p* = .024), and 36% more time watching TV (*p* = .02). In contrast, after adjusting for covariates, Hispanic workers did not significantly differ from White workers in their time spent on household activities, eating and drinking, and exercising, but spent 45% more time watching TV (*p* = .024), and 30% less time with their children compared to White workers (*p* = .003). Workers of other race also spent 33% less time exercising than White workers (*p* = .01). (Detailed compositional regression results for all activities with 95% and 99% CIs are available in [Supplementary Appendix Table 1.](#))

Alternative Analyses

To learn whether some of the observed differences in activities are driven by preferences in leisure or if leisure in aggregate is available systematically differently to individuals of different races/ethnicities, we estimated an additional model in which we grouped activities into leisure and paid/unpaid work activities. Following the sociology literature on time use (Sayer, 2005), we grouped working, commuting to work, household responsibilities, and child care as paid/unpaid

activities. Leisure activities were socializing, eating and drinking, sports, and watching TV. Sleep and other activities remained separate categories. Grouping activities into leisure and paid/unpaid work activities not only accounts for work/leisure preferences, it also provides a more equitable approach to understanding work time because White workers may be more likely to have access to resources that can support unpaid work activities, such as household and childcare activities, than Black and Hispanic workers. Compositional regression results for these activities showed that Black workers had 13% less leisure time available than White workers (*p* = .03). Race/ethnicity coefficients are plotted in [Figure 3](#), and regression results of the full models are available in [Supplementary Appendix Table 2.](#)

Our results confirm the hypothesis that Black and Hispanic workers spent more time on work-related activities and less time on leisure activities, providing evidence that work–life balance is harder to achieve for these workers compared to White workers.

Quality of Life (H3)

Exploratory analyses of quality of life using ATUS years 2012 and 2013 found no statistical difference by race/ethnicity in descriptive and unadjusted analyses. However, in adjusted analyses, Black individuals experienced lower quality of life compared to White workers with a coefficient of 0.9 (*p* = .027) on a 0–10 scale ([Table 2](#) and [Supplementary Appendix Table 3](#)). This analysis provides support for our research hypothesis for Black individuals, but not for Hispanic workers.

Table 3. Unadjusted and Adjusted Logistic and OLS Regression Results for Poverty and Wage (Financial Security Measures) for Direct Care Workers, American Time Use Survey 2003–2018

Variables	Household poverty logit (N = 654)		Wage (log) OLS (N = 1,760)	
	OR (95% CI)	p Value	Coeff. (95% CI)	p Value
	<i>Unadjusted model</i>			
Black (Ref. White)	3.48 (2.09 to 5.79)	<.001	0.07 (–0.05 to 0.18)	.247
Hispanic	4.49 (2.26 to 8.9)	<.001	–0.07 (–0.29 to 0.15)	.526
Other race	2.15 (0.82 to 5.63)	.119	0.02 (–0.3 to 0.34)	.897
	<i>Adjusted model</i>			
Black (Ref. White)	2.72 (1.5 to 4.93)	.001	0.12 (–0.02 to 0.27)	.101
Hispanic	2.74 (1.18 to 6.37)	.02	–0.04 (–0.23 to 0.14)	.645
Other race	1.22 (0.35 to 4.33)	.754	–0.01 (–0.32 to 0.31)	.968
Age (in years)	1 (0.98 to 1.02)	.963	0.02 (–0.01 to 0.04)	.298
Age (squared)			0 (–0.0003 to 0.0001)	.190
Female	0.33 (0.15 to 0.74)	.008	–0.11 (–0.28 to 0.05)	.179
Divorced/separated/widowed (Ref. Married)	2.04 (1.11 to 3.77)	.023	–0.09 (–0.22 to 0.03)	.152
Single	1.55 (0.79 to 3.02)	.201	–0.26 (–0.47 to –0.04)	.021
Some college	0.55 (0.34 to 0.89)	.015	0.08 (–0.05 to 0.2)	.238
Rural	1.1 (0.63 to 1.91)	.747	–0.11 (–0.26 to 0.03)	.132
Household 2–3 people (Ref. 1-person household)	0.5 (0.26 to 0.96)	.036	–0.1 (–0.29 to 0.09)	.297
Household 4 plus	0.28 (0.11 to 0.68)	.005	–0.15 (–0.38 to 0.08)	.207
Child in household	8.34 (4.39 to 15.86)	<.001	0.04 (–0.1 to 0.18)	.569
Foreign born	1.66 (0.89 to 3.11)	.115	–0.14 (–0.31 to 0.03)	.099
West	2.56 (1.08 to 6.08)	.034	–0.04 (–0.24 to 0.15)	.674
Midwest	1.33 (0.69 to 2.57)	.395	–0.14 (–0.32 to 0.03)	.107
South	1.48 (0.81 to 2.7)	.203	–0.17 (–0.31 to –0.02)	.024
Hospital industry (Ref. Health services)	0.91 (0.43 to 1.9)	.795	0.19 (0.03 to 0.36)	.022
Public sector	0.59 (0.16 to 2.18)	.429	0.18 (–0.05 to 0.41)	.119
Social assistance	0.57 (0.23 to 1.42)	.231	0.05 (–0.15 to 0.25)	.625
Other industry	0.59 (0.28 to 1.25)	.17	–0.03 (–0.28 to 0.21)	.792
Year	1.04 (0.98 to 1.1)	.194	0 (–0.01 to 0.01)	.991

Notes: OLS = ordinary least squares; OR = odds ratio. Sample size varies based on data availability. Wage data available 2003–2018, poverty data available 2006–2008 and 2014–2016. The wage model is log-transformed and also included age squared.

Discussion and Implications

Results of our analysis of financial stability, time spent on work and leisure activities, and quality of life of direct care workers show the challenges that Black and Hispanic individuals in this workforce face.

Financial Instability (H1)

Our analysis provided evidence that Black and Hispanic direct care workers experienced greater financial insecurity compared to White workers with a 2.7 higher prevalence of household poverty among Black and Hispanic workers. This supports our hypothesis that Black and Hispanic workers experience greater financial insecurity. Additional research is needed to identify the source of this disparity because there was no statistically significant difference in wages by different racial/ethnic groups. There are several possible explanations for differences

in poverty rates. First, Black and Hispanic direct care workers are more likely than White workers to have children in the household and have four or more people living in the household. Thus, greater earnings are required for these workers to keep their households out of poverty. In addition, Black direct care workers are less likely to be married than White workers and thus may be less likely to have another worker in the household to generate income.

Another possible nonwage explanation for higher poverty rates among Black and Hispanic direct care workers is that they may not work the same number of hours as White direct care workers. It is common for work schedules to vary among direct care workers (Stone et al., 2017), and this can lead to low and unstable incomes. It is also possible that Black and Hispanic workers work fewer hours, on average, when they have children living at home. Furthermore, employers may not offer them as many hours of work as they desire (Stone et al., 2017).

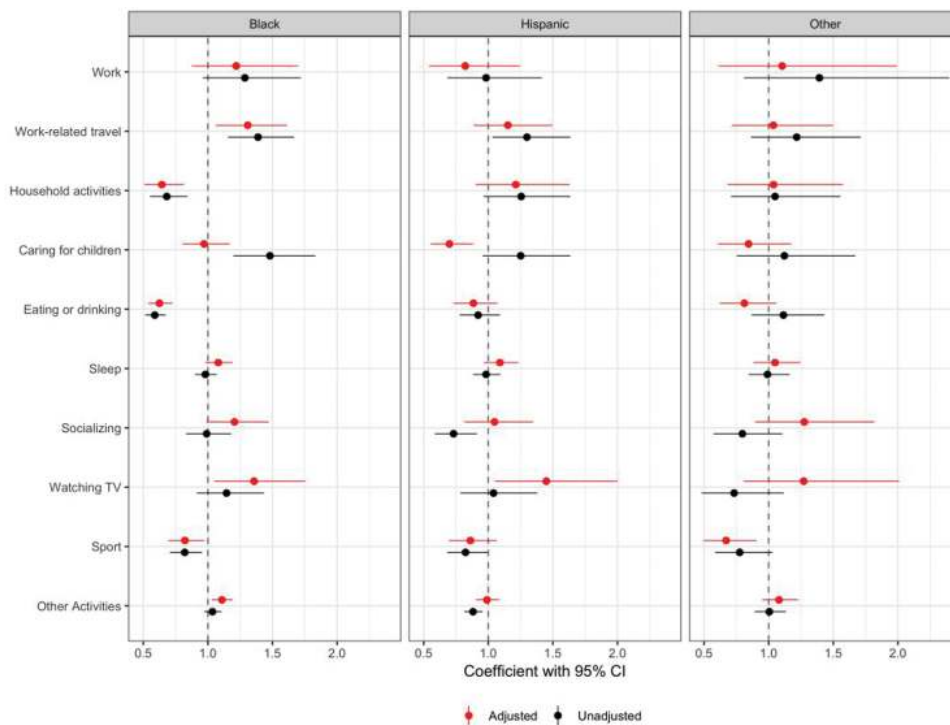


Figure 2. Unadjusted and adjusted compositional analysis coefficients for race/ethnicity among direct care workers on time spent on activities, American Time Use Survey 2003–2018. *Notes:* In addition to race, adjusted models included age, gender, marital status, education, child in household, number of people in household, foreign born, rural status, industry, U.S. region, and survey year. For race/ethnicity coefficients at 95% and 99% confidence intervals see Table 4. For full model results see Supplementary Appendix Table 1. The time diary data are analyzed using compositional regressions in order to address collinearity between activities. The compositional analysis examines the proportional differences among activities. This analysis uses the logarithm of base two. The estimates graphed here are the exponent of the 2 base 2^{β_k} , allowing for easier interpretation. For example, an estimate of 1.22 can be interpreted as a 22% increase from the reference category. Similarly, an estimate of 0.86 can be interpreted as a 14% decrease from the reference category.

Overall, many direct care workers earn a wage so low that they, and their household members, are living in poverty. Efforts to increase their wages such as through increases in local, county, or state minimum wage laws would particularly benefit these workers. Unionization could also provide wage and security benefits (Rosenfeld & Denice, 2019; Shierholz, 2018). However, there are barriers to wage increases associated with the financing of home care and nursing home services. Medicaid pays for approximately 42% of long-term services and supports, followed by Medicare with 22% (Colello, 2018), and employers’ ability to raise wages is constrained by reimbursement levels (Paraprofessional Healthcare Institute, 2016; The Henry J. Kaiser Family Foundation, 2017). And, approximately 15% of home care is paid directly by clients and their families, who may not have sufficient resources to pay a high wage (Colello, 2018).

Time Spent on Activities (H2)

Black and Hispanic direct care workers also experienced disparities throughout their day-to-day work and leisure activities. They reported longer commutes compared to White workers, which may be the result of rising housing

costs in urban areas (Mayock, 2016). In addition, Hispanic direct care workers reported less time with their children. Employers of direct care workers need to be attentive to the tradeoffs their employees are making with respect to commute times, housing costs, and childcare availability. Efforts to balance these competing demands could be supported by employer support for local childcare programs or by greater efforts to assign home care workers to clients closer to their homes.

Other approaches that could help worker well-being and would require public policy support could include subsidized rental housing and housing loans to allow employees to live closer to work. Employer provision of meals in the workplace could support a healthier workforce, while at the same time helping low-wage workers save money on food. Special workplace health prevention activities such as exercise programs, meditation, and other activities could be established to improve health and quality of life. However, these types of programs are likely to be feasible only for settings where employees are co-located, such as nursing homes; home care aides working alone in a household cannot easily access such programs. Such initiatives could help attract workers from other entry-level health care jobs and contribute to greater workforce stability.

Table 4. Unadjusted and Adjusted Compositional Analysis Coefficients for Race/Ethnicity Among Direct Care Workers on Time Spent on Activities, American Time Use Survey 2003–2018

Activity	Unadjusted			Adjusted		
	Coeff	95% CI	99% CI	Coeff	95% CI	99% CI
Work						
Black	1.29	0.96–1.72	0.88–1.88	1.22	0.87–1.7	0.79–1.87
Hispanic	0.98	0.68–1.42	0.61–1.58	0.82	0.54–1.25	0.48–1.41
Other race	1.39	0.81–2.4	0.69–2.82	1.1	0.61–1.99	0.51–2.37
Work-related travel						
Black	1.39***	1.16–1.67	1.09–1.76	1.31*	1.06–1.61	1–1.71
Hispanic	1.3*	1.03–1.64	0.96–1.75	1.15	0.89–1.49	0.82–1.61
Other race	1.22	0.86–1.71	0.78–1.9	1.04	0.72–1.5	0.64–1.67
Household activities						
Black	0.68***	0.55–0.84	0.52–0.9	0.64***	0.51–0.81	0.47–0.87
Hispanic	1.25	0.96–1.63	0.89–1.77	1.21	0.9–1.63	0.83–1.78
Other race	1.05	0.71–1.55	0.63–1.75	1.04	0.68–1.58	0.6–1.78
Caring for children						
Black	1.48***	1.2–1.83	1.12–1.95	0.97	0.8–1.17	0.76–1.23
Hispanic	1.25	0.96–1.63	0.88–1.77	0.7**	0.55–0.88	0.52–0.95
Other race	1.12	0.75–1.67	0.67–1.88	0.84	0.61–1.18	0.55–1.3
Eating or drinking						
Black	0.59***	0.51–0.67	0.49–0.7	0.62***	0.54–0.73	0.51–0.76
Hispanic	0.92	0.78–1.09	0.74–1.14	0.89	0.73–1.07	0.69–1.13
Other race	1.11	0.87–1.43	0.81–1.54	0.81	0.62–1.06	0.57–1.15
Sleep						
Black	0.98	0.9–1.07	0.88–1.1	1.08	0.98–1.19	0.95–1.23
Hispanic	0.98	0.88–1.09	0.86–1.13	1.09	0.96–1.23	0.93–1.28
Other race	0.99	0.84–1.16	0.81–1.22	1.05	0.88–1.25	0.84–1.31
Socializing						
Black	0.99	0.83–1.18	0.79–1.24	1.21	0.99–1.47	0.93–1.56
Hispanic	0.73**	0.59–0.91	0.55–0.97	1.05	0.82–1.35	0.76–1.45
Other race	0.8	0.57–1.11	0.52–1.22	1.28	0.89–1.82	0.81–2.02
Watching TV						
Black	1.14	0.91–1.43	0.85–1.53	1.36*	1.05–1.76	0.97–1.89
Hispanic	1.04	0.78–1.38	0.72–1.5	1.45*	1.05–2	0.95–2.2
Other race	0.73	0.48–1.12	0.42–1.26	1.27	0.8–2.01	0.7–2.3
Sport						
Black	0.82*	0.71–0.95	0.67–1	0.82*	0.69–0.97	0.66–1.03
Hispanic	0.82*	0.68–1	0.64–1.05	0.86	0.7–1.07	0.65–1.14
Other race	0.78	0.58–1.03	0.54–1.12	0.67**	0.5–0.91	0.45–0.99
Other activities						
Black	1.04	0.97–1.1	0.95–1.12	1.11**	1.03–1.19	1.01–1.22
Hispanic	0.88**	0.81–0.96	0.79–0.98	0.99	0.9–1.08	0.88–1.11
Other race	1.01	0.89–1.13	0.86–1.17	1.08	0.95–1.23	0.91–1.28

Notes: In addition to race, adjusted models included age, gender, marital status, education, child in household, number of people in household, foreign born, rural status, industry, U.S. region, and survey year. See [Supplementary Appendix Table 1](#) for detailed model results. The time diary data are analyzed using compositional regressions in order to address collinearity between activities. The compositional analysis examines the proportional differences among activities. This analysis uses the logarithm of base two. The estimates shown here are the exponent of the 2 base 2^{B^*} , allowing for easier interpretation. For example, an estimate of 1.22 can be interpreted as a 22% increase from the reference category. Similarly, an estimate of 0.86 can be interpreted as a 14% decrease from the reference category. To address potentially false inferences from multiple comparisons testing, we also provide 99% confidence intervals. Note that a Bonferroni correction for nine activities indicates statistical significance at an alpha of 0.005.

* $p < .05$, ** $p < .01$, *** $p < .001$.

The considerably shorter time allocation for physical activity and larger time allocation to sedentary activity such as watching TV by Black and Hispanic workers compared

to White workers are congruent with other studies ([Ahmed et al., 2005](#); [Hughes et al., 2005](#); [Wilson-Frederick et al., 2014](#)) and are concerning for the potential health effects

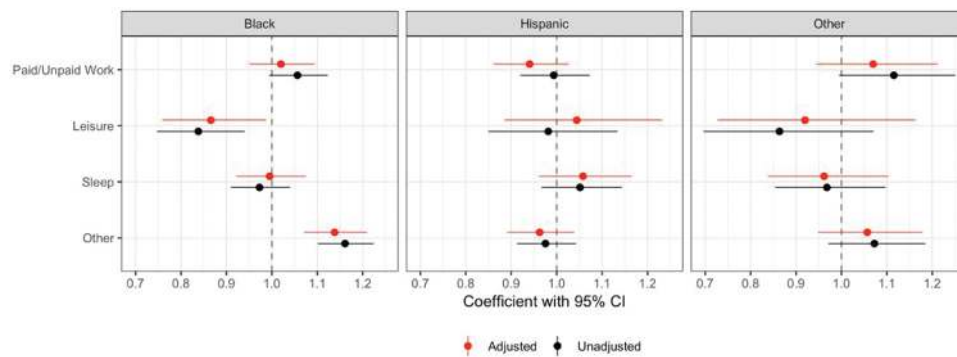


Figure 3. Unadjusted and adjusted compositional regression coefficients of combined paid/unpaid work and leisure activities for race/ethnicity among direct care workers, American Time Use Survey 2003–2018. For full model results please see [Supplementary Appendix Table 2](#).

in this group of workers. While it was beyond the scope of this study to investigate other health-related activities, such as specific dietary and exercise habits, previous studies have shown a negative correlation between long commutes and health-promoting activities (Christian, 2012). For example, more time commuting is associated with less time exercising in previous research (Christian, 2012) and less time spent eating may result in the consumption of more prepared and processed foods that are less healthful (Senia et al., 2017).

While both Black and Hispanic direct care workers experienced differences in time use compared to White workers, Black workers in particular appear to experience a cascade of challenges. They were the only group of workers for which our follow-up analyses indicated that their time spent on paid and unpaid work in aggregate may be substantially larger compared to White workers. Our results suggest that this may lead to less time being available for other activities, such as eating and drinking, and time for exercise. When we measured several leisure activities in aggregate to account for differences in preferences among individuals, leisure remained significantly lower for Black compared to White workers. The leisure gap was approximately 13%, or approximately 3 h in a person's day, which is a substantial amount of time that is not available for physical or mental health.

It could be argued that models without controls for children, education, household size, and other variables would be better able to uncover true racial/ethnic disparities in time allocation because the majority of our covariates are not exogenous and may be affected by structural racism and discrimination. For example, patterns in marriage, childrearing, and cohabitation are associated with socioeconomic status (Lundberg & Pollak, 2014; Lundberg et al., 2016; Raley et al., 2015) and have been affected by discriminatory policies in incarceration, education, housing, and other areas (Charles & Luoh, 2010; Edin & Nelson, 2013; Mickelson, 2003). This would likely reveal larger magnitudes of differences in time use for Black and Hispanic workers.

Quality of Life (H3)

It is possible that the financial and time constraints faced by Black workers explain the lower quality of life scores that we observed among this group of workers. Our results indicate that the well-being of these workers is more fragile. The quality of life analysis included our only direct measure of well-being and was conducted on a subsample of 217 individuals. Thus, our study results should be considered preliminary evidence of the relationship of race/ethnicity on worker well-being. Additional research using direct measures of well-being is needed and should be studied in larger samples of direct care workers.

Nevertheless, our analysis reveals how racial disparities in financial security and work–life balance permeate through the lives of the direct care workforce and highlight the disadvantages that especially Black workers face. It seems warranted that employers, payers, stakeholders, and public policy initiatives explicitly address racial inequities with racial equity approaches. We recommend using toolkits and resources that aim to bring racial equity into operations and decision making, such as those developed by the [Government Alliance on Race and Equity \(2016\)](#).

During the novel coronavirus pandemic, differences in financial stability, time use, and quality of life are likely widening for people of color due to the disproportionate impacts associated with fewer economic, health, and social resources. For instance, these individuals and/or their spouses may be more likely to work in settings furloughing employees, be traveling to work on public transport with interruptions in services, may be more likely to face childcare issues due to daycare closures, may be more likely to contract the virus due to higher infection rates in their work settings and neighborhoods, and may face negative health consequences if infected due to less-comprehensive health care coverage (Shippee et al., 2020). Enhanced federal support is more urgent than ever to support the well-being of direct care workers at the frontlines in nursing homes, residential care facilities, post-acute care, and rehabilitation facilities and to provide adequate care to older adults who have contracted the virus (Feder, 2020).

Limitations

Our analysis has important limitations. First, we use survey data and as a result the analysis is exposed to response bias from self-reporting. For example, industry and occupation of employment may not be accurately reported. Second, the ATUS sampling frame is not stratified by occupation and industry codes, and after applying survey weights the weighted counts of the direct care workforce fall short of the estimates from the Bureau of Labor Statistics. Assuming weighting the data was representative of each race/ethnicity group, this would not affect our results. Third, ATUS respondents provide data for a 24-h period for 1 day of the week. Thus, we are not able to calculate average number of hours worked or spent on other activities over the course of a full week or longer time period. Shift work or part-time work may not be fully accounted for in the data. Fourth, activities that could be carried out at the same time, such as eating and watching TV, are not measured as simultaneous activities in ATUS. This could lead to an underestimation of the duration of activities that may co-occur during the day. Fifth, the sample size of entry-level direct care workers is limited in ATUS and data on wages, poverty, and quality of life were not available in all years, thus some analyses are not precisely estimated, and *p* values do not always reach traditional significance levels. However, the patterns we observe are consistent across model specifications and seeing effects even in quality of life is meaningful. Sixth, not all direct care workers in our sample provide care to older adults. An examination of industry codes reveals that about two thirds of our sample were employed in nursing home and residential care facilities. Future research should focus on examining the impact on different populations and settings. Sixth, we were unable to formally test the degree to which proximal pathways (such as poverty) and responses (such as time spent on leisure activities) mediate the relationship between race and overall well-being, due to the well-being module only being obtained during the years 2012 and 2013. Finally, this study is unable to determine the cause as to whether more time spent on one activity versus another activity is due to preference versus hardship. Some people may choose a longer commute in order to buy a larger home, while others may be forced to live farther from their job because they cannot afford housing near work. Conversely, the study cannot determine the dependencies between time allocations; a longer commute, for example, may or may not be the cause of spending less time at work.

Conclusions

Our study provides evidence that Black and Hispanic direct care workers experience racial disparities that permeate many domains of their lives. Black workers are particularly vulnerable, with high household poverty rates and

less time for leisure activities. Addressing racial disparities with race-explicit organizational approaches that promote racial equity in combination with improving working conditions that are barriers to engagement in well-being activities would support those most in need, build workforce stability, and help meet the long-term care needs of the nation's aging population in the years to come.

Supplementary Material

Supplementary data are available at *The Gerontologist* online.

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Conflict of Interest

None declared.

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