

## Research Article

# Black–White Disparities in Moves to Assisted Living and Nursing Homes Among Older Medicare Beneficiaries

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## Abstract

**Objectives:** Investigate black-white disparities in older adults' moves to assisted living and nursing homes and draw from the Andersen Healthcare Utilization Model to test explanations for any disparities.

**Methods:** Data are from a nationally representative sample of older community-dwelling Medicare beneficiaries from the 2015 ( $N = 5,212$ ) National Health and Aging Trends Study (NHATS). We use stepwise multinomial logistic regression to examine black-white disparities in moves out of community housing to assisted living or a nursing home over 2 years, before and after adjusting for predisposing (age, gender), enabling (income, housing tenure, Medicaid, living arrangement) and need (activities of daily living [ADL] limitation, physical capacity, self-rated health, and dementia) factors.

**Results:** Black older adults are less likely to move to assisted living and are more likely to move to a nursing home compared to white older adults. Black-white disparities in moves to nursing homes are explained by black-white differences in enabling and need factors, whereas black-white disparities in moves to assisted living remain even after adjusting for enabling and need factors.

**Discussion:** Unmeasured factors related to systemic racism (e.g., residential racial segregation, racial discrimination) and/or black-white differences in care preferences might further explain black-white disparities in moves to assisted living and warrant further investigation.

**Keywords:** Living environments, Long-term care, Minority aging (race/ethnicity), Residential relocation

Population aging, increasing racial diversity, and the rapidly changing long-term care (LTC) landscape in the United States present challenges and opportunities to achieving equitable access to the full range of LTC options for older adults. In response to both individual preferences and changes in public policy, the United States LTC system continues to undergo a major transformation, characterized by a shift away from nursing home care and toward community-based alternatives (Degenholtz, Nadash, Kang, & Park, 2016). Since 2000, the number of nursing home residents has declined by almost 200,000 and in 2016 the average nursing home occupancy rate was 80%, the lowest level since the National Center for

Health Statistics (2017) began summarizing these data in 1995.

In the last 20 years, the assisted living industry has experienced tremendous growth as an additional residential LTC option primarily for older adults with greater financial resources (Silver, Grabowski, Gozalo, Dosa, & Thomas, 2018). Although nursing homes continue to provide the highest level of care (Freedman & Spillman, 2014), assisted living settings have also evolved to offer an array of services to individuals with complex needs (Grabowski, Stevenson, & Cornell, 2012). Assisted living is generally defined as a non-nursing home congregate residential setting that provides or coordinates personal and health-related services

to promote maximum independence (Fabius & Thomas, 2019; Hawes et al., 2003; Hernandez, 2012). In 2018, the annual median cost for assisted living in the United States was roughly \$48,000, compared to \$89,000 for a semi-private room in a nursing home (Genworth Financial, 2018). Most assisted living residents privately pay for services, as well as room and board, whereas the majority of nursing home residents rely on Medicaid to cover all housing, food, and service costs (Harris-Kojetin et al., 2019). High out-of-pocket costs and few public financing options limit the ability of low- and moderate-income older adults to access assisted living as an LTC and housing option (Doty, 2010).

National estimates suggest that black older adults are underrepresented in assisted living and overrepresented in nursing homes (Freedman & Spillman, 2014; Harris-Kojetin et al., 2019). Access to assisted living may be a greater challenge for black compared to white older adults since black older adults on average have fewer financial resources; however, few studies have examined the distinct pathways to help explain black-white disparities in different types of LTC use (Fabius & Thomas, 2019). Given recent shifts in the LTC landscape, particularly the growth in assisted living and the decline in nursing home use, it is important to understand racial disparities in LTC in order to inform LTC policy development to help create a more equitable LTC system (Naylor, Kurtzman, Miller, Nadash, & Fitzgerald, 2015). This is the first study we know of to examine recent black-white disparities in moves from the community to assisted living and nursing homes using a nationally representative sample of older adults.

### Conceptual Framework

We draw on the Andersen Healthcare Utilization Model (Andersen & Newman, 1973) in which use of health services is determined by predisposing characteristics, enabling factors, and need. Predisposing characteristics are the sociocultural characteristics of an individual (e.g., age, race, gender) and can either deter or encourage LTC service use. Enabling factors are the resources that increase the likelihood that use of preferred LTC services will take place (e.g., financial resources, family support). Need is the precipitating factor that causes the individual to require LTC services (e.g., health and functional status). Although Andersen's model (Andersen & Newman, 1973) provides general guidance on the association between race and LTC use, it does not provide insight on the decision-making process when different types of LTC options are available. For example, the economic model of LTC decision making (Pezzin, Kemper, & Reschovsky, 1996) posits that use of a particular type of LTC option is a function of preference, affordability, and medical need. Research suggests that in most cases, the preference of community-dwelling older adults is to continue living at home, and if staying at home is no longer possible, most would prefer moving to assisted living rather than a nursing home (Kasper, Wolff,

& Skehan, 2018). Indeed, racial differences in care preferences have also been documented with blacks being more likely than whites to prefer family care at home (Bradley et al., 2004) and less likely to prefer assisted living (Kasper et al., 2018).

Black-white disparities in moves to assisted living and nursing homes are likely multifaceted and not only the result of racial differences in individual preferences, enabling factors, and need factors. Other factors related to systemic racism, such as residential racial segregation, also may influence black-white disparities in LTC use (Fabius & Thomas, 2019; Smith, Feng, Fennell, Zinn, & Mor, 2007). Research suggests that black nursing home residents are more likely than white nursing home residents to receive care in lower-quality settings (Hefele, Wang, & Lim, 2019; Smith et al., 2007). In addition, racial discrimination can lead to racial disparities in knowledge of LTC options. For instance, hospital discharge planners might be less likely to discuss assisted living with black families if they assume the family cannot afford assisted living, and LTC marketing campaigns may strategically target white, wealthier older adults. Due to these systemic factors, the selection of adequate LTC settings may be limited for black older adults, making it more challenging to find an LTC environment to match their needs and preferences (Fabius & Thomas, 2019).

### Black-White Disparities in LTC Use

Historically, black older adults were significantly less likely to use nursing homes than whites (Clark, 1997; Coughlin, McBride, & Liu, 1990; Wallace, Levy-Storms, Kington, & Andersen, 1998). More recent evidence suggests that the number of black nursing home residents has increased over time, outpacing population growth, just as the number of white nursing home residents has declined (Feng, Fennell, Tyler, Clark, & Mor, 2011). Current estimates suggest that black older adults are overrepresented in nursing homes, making up 8.7% of the population aged 65 and older, but 14.3% of nursing home residents (Harris-Kojetin et al., 2019).

Researchers have theorized that recent shifts in the racial composition of nursing homes are partially due to increased use of assisted living by whites (Feng et al., 2011; Smith, Feng, Fennell, Zinn, & Mor, 2008). There is evidence that assisted living has diverted some healthier, private-pay residents from nursing homes (Silver et al., 2018). Yet, some qualitative research suggests that decisions to move to assisted living are directly influenced by socioeconomic status, but not race (Ball, Perkins, Hollingsworth, Whittington, & King, 2009). Since recent nationally representative studies on assisted living use are primarily cross-sectional (Degenholtz, et al., 2016; Fabius & Thomas, 2019; Freedman & Spillman, 2014), it is not known if there are black-white differences in moves to assisted living, or

whether access to fewer financial resources might explain such disparities.

Although there is more research examining racial disparities in nursing home use than assisted living use, even that research is not clear on the reasons for black overrepresentation in nursing homes. Limited research has examined whether or not black-white disparities in nursing home use are driven primarily by race differences in enabling and need factors (Akamigbo & Wolinsky, 2007; Cai & Temkin-Greener, 2015; Gonzalez, 2019; Thomeer et al., 2014). In a recent study examining a sample of Medicaid home and community-based service users, Cai & Temkin-Greener (2015) found that black older adults delay nursing home use compared to their white counterparts, after controlling for financial and health differences. Longitudinal studies using nationally representative data from the Health and Retirement Study (HRS) conclude that black older adults are actually less likely to use nursing homes than whites (counter to other recent data) and this association strengthens after adjusting for enabling and need factors, suggesting that black-white financial and health differences do not mediate the association between race and nursing home use (Akamigbo & Wolinsky, 2007; Thomeer et al., 2014).

### The Current Study

Given the quickly evolving LTC landscape, research on black-white disparities in the LTC system is necessary to inform policy initiatives and mitigate potential racial disparities in access to the full range of LTC options (Konetzka & Werner, 2009). Due to limited data on assisted living and few datasets with distinct measures of both assisted living and nursing home use, this is the first study we know of to examine recent black-white disparities in moves from the community to different LTC environments. We use a nationally representative sample of older community-dwelling Medicare beneficiaries from the 2015 NHATS to examine black-white disparities in moves out of community housing to assisted living or a nursing home by 2017. Then, drawing on Andersen's conceptual model (Andersen & Newman, 1973) and previous literature on racial discrimination, we examine whether (a) enabling and need factors explain any racial disparities in these moves, or (b) racial disparities remain after controlling for enabling and need factors, suggesting that unmeasured factors (e.g., racial discrimination, racial disparities in knowledge of LTC options and/or racial differences in care preferences) might help explain black-white disparities in moves to assisted living and nursing homes.

**Hypothesis 1:** Among older adults living in the community, black older adults will be less likely than white older adults to move to assisted living and more likely to move to a nursing home.

**Hypothesis 2a:** Black-white disparities in moves to assisted living and nursing homes are explained by black-white

differences in enabling factors (income, Medicaid, housing tenure, and living arrangement) and need factors (ADL limitation, physical capacity, self-rated health, and dementia).

**Competing Hypothesis 2b:** Black-white disparities in moves to assisted living and nursing homes are not fully explained by black-white differences in enabling and need factors.

## Method

### Data

In this prospective study, we use a nationally representative sample of older community-dwelling black and white Medicare beneficiaries from the 2015 ( $N = 5,212$ ) NHATS to examine black-white disparities in moves out of community housing to assisted living or a nursing home over 2 years (2015–2017). NHATS follow-up data are collected annually. The first wave of data was collected in 2011, with a baseline response rate of 71% and 7% of interviews completed by a participant serving as a proxy (Kasper & Freedman, 2014). In 2015, the NHATS sample was replenished to adjust for those no longer in the study due to death or attrition. Detailed information on the NHATS study design and methods can be referenced elsewhere (DeMatteis, Freedman, & Kasper, 2016).

Our analytic sample was first limited to older adults reporting their race as black or white and living in the community in 2015, excluding residents of assisted living or a nursing home ( $n = 6,617$ ). Over 80% ( $n = 5,315$ ) remained in our analytic sample after attrition between baseline and follow-up 2 years later. For participants with missing baseline data on the independent variables of interest, we use data from the subsequent round ( $n = 143$ ) when available. If a participant's Medicaid status was still not known, we coded the participant as having Medicaid if their reported annual income was below \$15,000 ( $n = 19$ ). Less than 2% of remaining cases were dropped ( $n = 103$ ) due to missing data on independent variables. Chi-square and  $t$ -tests comparing older adults lost to attrition ( $n = 1,302$ ) to those remaining in our final analytic sample ( $N = 5,212$ ) show that our sample overrepresents white, higher income older adults in better health. Holding all else constant, multiple logistic regression predicting retention does not show a significant association between race and retention; however, living alone and being in better health are significantly associated with retention.

## Measures

### Outcome

A categorical measure of place of residence was used to investigate moves out of community housing. Participants either remained in the community (referent), moved to assisted living, moved to a nursing home, or died. Participants who moved more than once, or moved and then died

between baseline and follow-up 2 years later, were categorized based on their first move ( $n = 48$ ). Since we are interested in use of LTC options across the continuum of care, examining black-white disparities in first moves out of community housing, rather than final place of residence or death is preferred (Granbom, Perrin, Szanton, Cudjoe, & Gitlin, 2018). Though not the focus of our analyses, we include death as a possible outcome (Supplementary Materials).

Unlike other nationally representative datasets that tend to focus on the non-institutionalized population, NHATS collects data on people in institutions, distinguishing nursing homes from alternative residential settings and uses interviews with facility staff and participants/proxies to determine the specific type of residence and confirm that the participant is not expected to return home (Freedman & Spillman, 2014). Based on the work of Freedman and Spillman (2014), residential care settings were classified as assisted living if the facility identified as an adult family care home, group home, board and care home, or assisted living, including the assisted living portion of a continuing care retirement community. Assisted living generally offers a lower level of care than a nursing home, but a higher level of care than independent living, often including personal care services (Freedman & Spillman, 2014). When the NHATS data identified the participant as living in a non-nursing home residential setting, but did not distinguish between assisted living or independent living ( $n = 22$ ), we classified the participant as residing in assisted living if their place of residence offered help with housekeeping, bathing/dressing, medications, or meals. Community housing included those living in a house or apartment, an age restricted setting (retirement or senior housing communities), and independent living; hereafter, we will refer to those who remained in community housing arrangements at follow-up as “non-movers.”

### Predisposing Characteristics

Self-reported non-Hispanic black (1) versus non-Hispanic white race (0) is the predisposing characteristic of interest. Gender (female = 1) and age were included as controls. To protect the identity of participants in the publicly available NHATS data, age was categorized ordinally from 1 to 6 and included in the analysis as a continuous measure (1 = 65–69 years old; 6 = 90+ years old).

### Enabling Factors

Annual income was based on the participant’s estimate of individual income or income for co-residing couples from multiple sources, including: earned income, social security, supplemental security income, pensions, retirement account withdrawals, and income earned from interest/dividends (Kasper & Freedman, 2018). We used the imputed total income value available in the NHATS public use file (Montaquila, Freedman, & Kasper, 2012). In line with previous work (Freedman et al., 2014), we constructed

indicator variables based on quartiles of the imputed annual income measure with cutpoints of \$15,000, \$30,000, and \$60,000 (referent = < \$15,000). Housing tenure (referent = homeowner; renter; other arrangement [e.g., lives with family]) was also included as an enabling factor since home equity is a financial resource for older homeowners to meet their LTC needs (Joint Center for Housing Studies, 2018). Self-reported measures of living arrangement (lives with others = 1; lives alone = 0) and Medicaid receipt (Medicaid = 1) were also included as enabling factors since both are resources that could influence use of LTC options.

### Need Factors

We adjust for a variety of need factors including: self-rated health as a continuous measure (1 = poor; 5 = excellent), physical capacity (0–12 scale [ $\alpha = 0.88$ ], with higher scores reflecting greater self-reported physical capacity on activities such as, walking, lifting, opening jars, etc.) (Freedman et al., 2011), and self-reported difficulty in the last month completing tasks independently (referent = no limitation; only instrumental activities of daily living [IADL] limitation; ADL limitation [including those with an IADL limitation]). ADL tasks included: eating, bathing, toileting, dressing, getting around inside the home, and getting out of bed. IADL tasks included: getting outside the home, doing laundry, shopping, preparing meals, handling bills/banking, and managing medications. Participants who received help (for health or functioning reasons) and never completed a task independently in the last month were also coded as having a limitation. We also included a dichotomous indicator for dementia status (1 = probable dementia). A participant was considered to have probable dementia if they met one of the following criteria: (a) the participant or proxy reported a diagnosis, (b) a score indicating probable dementia on the AD8 Dementia Screening Interview, or (c) a score at least 1.5 standard deviations below the mean on at least two domains of cognitive tests (memory, orientation, and executive functioning) (Kasper, Freedman, & Spillman, 2013).

### Analysis

We used multinomial logistic regression to estimate relative risk ratios for the likelihood of moving to assisted living, a nursing home, or dying, compared to remaining in the community over 2 years (referent). All independent variables were taken at baseline (2015) and the dependent variable was based on the first move to assisted living or a nursing home (or death) by follow-up 2 years later (2017). A stepwise approach was used to create three models based on Andersen’s model (Andersen & Newman, 1973). Model 1 included predisposing characteristics (race, gender, and age), Model 2 added enabling factors (income, housing tenure, Medicaid, and living arrangement), and Model 3 added need factors (ADL limitation, physical capacity, self-rated health, and dementia). To compare older adults who



moved to a nursing home to those who moved to assisted living, we replicated the stepwise multinomial logistic regression analysis with assisted living as the referent. The corresponding NHATS 2015 analytic weights were used in all analyses and standard errors were adjusted to account for NHATS' complex sample design (Kasper & Freedman, 2018). Analyses were conducted in Stata Version 15.0 (Stata Corp, College Station, TX). Results of multinomial regression models with death as an outcome can be found in [Supplementary Table 2](#), as they are not the focus of our analysis.

To test the sensitivity of our findings we also ran models adjusting for multiple chronic conditions (count of 12 conditions), number of children (0–6+) and receiving help with any self-care (e.g., bathing), mobility (e.g., getting out of bed), or household activities (e.g., laundry). In line with previous research, we also created an “at risk” subsample ( $n = 2,596$ ) defined as those who receive help or reported having difficulty with at least one of 12 self-care, mobility, or household activities at baseline (Freedman & Spillman, 2014). Our findings were robust to these alternative specifications.

## Results

[Table 1](#) presents weighted baseline characteristics of the analytic sample by race. Consistent with other national estimates, when applying the survey weights, black older adults make up 9.2% of the analytic sample (Administration for Community Living, 2017). Compared to whites, black older adults were more likely to be female, younger, not a homeowner, lower income and in worse health (all  $p \leq .01$ ) ([Table 1](#)).

[Table 2](#) presents weighted baseline characteristics for the 2015 analytic sample by type of move 2 years later. By 2017, 93.3% of the sample remained in the community (unweighted  $n = 4,733$ ), 1.7% moved to assisted living, 1.3% moved to a nursing home, and 3.7% died. Participants with probable dementia were the most at risk of death or moving to assisted living or a nursing home. Close to 5% of participants with Medicaid moved to a nursing home, whereas less than 2% of participants with Medicaid moved to assisted living after 2 years. Overall, those who remained in the community after 2 years were more likely to be male, younger, living with others, homeowners, higher income, and in better health (all  $p \leq .001$ ) ([Table 2](#)). Although the same proportion (93.3%) of black

**Table 1.** Weighted Characteristics of Community-Dwelling Older Adults at Baseline in 2015 by Race

	Full sample ( $N = 5,212$ )	Black ( $n = 1,197$ )	White ( $n = 4,015$ )	$p$
Total	100.0	9.2	90.8	
Female	55.4	60.6	54.8	.002
Age (years)				.054
65–79	75.9	77.9	75.7	
80+	24.1	22.1	24.3	
Lives with others	69.9	64.9	70.4	.007
Housing tenure				<.001
Homeowner	78.7	57.2	80.9	
Renter	12.5	29.3	10.8	
Other arrangement	8.7	13.5	8.3	
Annual income				<.001
<\$15,000	12.7	34.9	10.5	
\$15,000–29,999	20.4	30.8	19.3	
\$30,000–59,999	29.3	21.9	30.0	
\$60,000+	37.7	12.4	40.3	
Medicaid	8.2	30.5	5.9	<.001
ADL/IADL limitation				<.001
No limitation	59.7	50.3	60.7	
Only IADL limitation	12.0	11.3	12.1	
ADL limitation	28.2	38.4	27.2	
Full physical capacity	38.2	29.3	39.1	<.001
Self-rated health				<.001
Excellent	15.7	6.8	16.6	
Very good	34.4	18.8	36.0	
Good	31.8	38.7	31.1	
Fair	14.5	28.9	13.1	
Poor	3.5	6.9	3.2	
Probable dementia	5.8	12.3	5.2	<.001

Note. ADL = activities of daily living; IADL = instrumental activities of daily living.  $p$  values are based on Pearson  $\chi^2$ .

**Table 2.** Weighted Characteristics of Community-Dwelling Older Adults at Baseline in 2015 by Type of Move Two Years Later

	Non-movers	Assisted living	Nursing home	<i>p</i>
Total <sup>a</sup>	93.3	1.7	1.3	
Race				.158
Black	93.3	0.9	1.7	
White	93.3	1.8	1.2	
Gender				.001
Female	92.5	2.3	1.5	
Male	94.3	1.0	1.0	
Age (years)				<.001
65–79	96.5	0.7	0.6	
80+	83.2	4.9	3.3	
Living situation				<.001
Lives with others	94.8	1.0	0.9	
Lives alone	89.9	3.5	2.1	
Housing tenure				<.001
Homeowner	95.5	1.0	0.7	
Renter	90.0	1.9	2.6	
Other arrangement	78.6	8.2	4.7	
Annual income				<.001
<\$30,000	88.0	2.3	2.8	
\$30,000+	95.5	1.5	0.6	
Medicaid status				<.001
Medicaid	85.8	1.8	4.8	
No Medicaid	94.0	1.7	1.0	
ADL/IADL limitation				<.001
No limitation	96.1	1.1	0.4	
Only IADL limitation	94.0	1.5	1.7	
ADL limitation	87.0	3.3	2.9	
Physical capacity				<.001
Full physical capacity	97.7	0.9	0.3	
Physical capacity limitation	90.6	2.2	1.9	
Self-rated health				<.001
Excellent- good	94.8	1.6	0.8	
Fair or poor	86.4	2.5	3.3	
Dementia				<.001
Probable dementia	70.7	7.8	8.2	

Note. ADL = activities of daily living, IADL = instrumental activities of daily living.

N = 5,212.

<sup>a</sup>Does not sum to 100% because death as an outcome is omitted. See [supplementary material \(Table 1\)](#) for complete description of sample.

*p* values are based on Pearson  $\chi^2$ .

and white older adults remained in the community after 2 years, black older adults, compared to whites, were less likely to move to assisted living and more likely to move to a nursing home, although this unadjusted difference is small and not statistically significant.

In [Table 3](#), Model 1AL shows that after adjusting for gender and age, black participants were less likely than whites to move from the community to assisted living (RR: 0.50, *p* = .10). Model 1NH shows that black compared to white participants were more likely to move from the community to a nursing home (RR: 1.43, *p* = .25), although this difference was not statistically significant. In [Table 4](#), Model 1NH directly compares nursing home movers to assisted living movers and shows that for black older adults,

the risk of moving to a nursing home compared to moving to assisted living was 2.84 times that of white participants (*p* = .04). Taken together, the Model 1 results in both [Tables 3](#) and [4](#) support our first hypothesis that black older adults are less likely to move to assisted living and more likely to move to a nursing home compared to white older adults.

Models 2 and 3 allow us to examine if black underrepresentation in moves to assisted living and overrepresentation in moves to nursing homes can be accounted for by black-white differences in enabling (Model 2) and need factors (Model 3). As seen in [Table 3](#) Model 3AL, black older adults are less likely to move to assisted living even after accounting for black-white differences in enabling and need factors (RR: 0.40, *p* = .03). This result supports competing

**Table 3.** Multinomial Logistic Regression Models Predicting Moves from the Community in 2015 to Assisted Living or a Nursing Home by 2017

	Assisted living			Nursing home		
	1AL	2AL	3AL	1NH	2NH	3NH
<i>Predisposing characteristics</i>						
Black	0.50†	0.49†	0.40*	1.43	0.63	0.51†
Female	2.03**	1.44	1.32	1.22	0.82	0.63†
Age (1–6 scale)	1.94***	1.67***	1.43***	1.92***	1.77***	1.39**
<i>Enabling factors</i>						
Lives with others		0.43**	0.33***		0.89	0.55*
Housing tenure (ref = homeowner)						
Renter		2.00†	1.79		2.50*	2.19*
Other arrangement		6.41***	5.48***		4.04***	3.33***
Annual income (ref = <\$15,000)						
\$15,000–29,999		0.93	0.99		1.84	2.05
\$30,000–59,999		1.90†	2.19*		0.93	1.24
\$60,000+		0.90	1.17		0.52	0.87
Medicaid		0.89	0.70		3.63**	2.17*
<i>Need factors</i>						
ADL/IADL limitation (ref = no limitation)						
Only IADL limitation			0.84			1.71
ADL limitation			1.50			1.59
Physical capacity (0–12 scale)			0.93†			0.85**
Self-rated health (1–5 scale)			0.96			0.81†
Probable dementia			3.45***			3.80***
Constant			0.01***			0.02***

Note. Referent non-movers. Coefficients are reported as relative risk ratios; regressions employ weights and adjust for standard errors to account for complex survey design.

N = 5,212.

ADL = activities of daily living; IADL = instrumental activities of daily living.

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

hypothesis 2b; black-white disparities in moves to assisted living are not fully explained by enabling and need factors included in the present study.

Very different results emerged when examining black-white disparities in moves to a nursing home. As seen in Table 3, Model 1NH, consistent with our first hypothesis, black participants were *more* likely to move to a nursing home than whites, but after accounting for enabling (Model 2NH) and need factors (Model 3NH), this association was reversed (RR: 0.51,  $p = .07$ ). After considering all enabling and need factors, black older adults had 49% less risk of moving to a nursing home compared to white older adults. When comparing nursing home movers to assisted living movers (Table 4), black older adults were more likely than whites to move to a nursing home rather than assisted living (RR: 2.84,  $p = .04$ ), but the magnitude of the association decreased and was no longer statistically significant after accounting for enabling factors (RR: 1.29,  $p = .63$ ). Collectively, results from Tables 3 and 4 for nursing home use support hypothesis 2a; black overrepresentation in moves to nursing homes are explained by black-white differences in enabling factors (income, Medicaid, housing tenure, and living arrangement) and need factors

(ADL limitation, physical capacity, self-rated health, and dementia).

## Discussion

In order to inform the development of a more equitable LTC system in the United States, it is imperative for policy makers and advocates to understand potential unintended consequences of recent shifts in the LTC landscape on disparities in LTC. Unfortunately, there is limited contemporary evidence examining racial disparities in the access, use, and quality of formal LTC options (Naylor et al., 2015). Our study contributes by examining black-white disparities among older adults in moves from the community to assisted living and nursing homes over 2 years, using recent data from a nationally representative sample of older Medicare beneficiaries.

Consistent with recent national estimates that black older adults are underrepresented in assisted living and overrepresented in nursing homes (Freedman & Spillman, 2014; Harris-Kojetin et al., 2019), our results suggest that black older adults in the community are less likely to move to assisted living and more likely to move to a

**Table 4.** Multinomial Logistic Regression Models Predicting Moves to a Nursing Home Compared to Moves to Assisted Living After Two Years

	1NH	2NH	3NH
<i>Predisposing characteristics</i>			
Black	2.84*	1.29	1.28
Female	0.60	0.57	0.47*
Age (1–6 scale)	1.00	1.06	0.97
<i>Enabling factors</i>			
Lives with others		2.07*	1.67
Housing tenure (ref = homeowner)			
Renter		1.25	1.22
Other arrangement		0.63	0.61
Annual income (ref = <\$15,000)			
\$15,000–29,999		1.98	2.08
\$30,000–59,999		0.49	0.57
\$60,000+		0.57	0.74
Medicaid		4.05*	3.08†
<i>Need factors</i>			
ADL/IADL limitation (ref = no limitation)			
Only IADL limitation			2.03
ADL limitation			1.06
Physical capacity (0–12 scale)			0.90
Self-rated health (1–5 scale)			0.85
Probable dementia			1.10
Constant			2.56

Note. Coefficients are reported as relative risk ratios; regressions employ weights and adjust for standard errors to account for complex survey design. N = 5,212.

ADL = activities of daily living; IADL = instrumental activities of daily living.

†p < .10. \*p < .05. \*\*p < .01. \*\*\*p < .001.

nursing home over 2 years compared to white older adults. Drawing from the Andersen Healthcare Utilization Model (Andersen & Newman, 1973), we also extend prior research by demonstrating that enabling and need factors mediate the association between race and moves to a nursing home. Black overrepresentation in moves to nursing homes is explained by black older adults having fewer financial resources (enabling factors) and worse health (need factors) than white older adults. This finding is inconsistent with results from previous nationally representative studies using the HRS, which found that the association between race and nursing home use was not mediated by enabling and need factors since the magnitude of the association strengthened after adjusting for financial and/or health differences (Akamigbo & Wolinsky, 2007; Gonzalez, 2019; Thomeer et al., 2014). According to the HRS results, black older adults are less likely to use nursing homes than whites (Akamigbo & Wolinsky, 2007; Thomeer et al., 2014) or have similar nursing home use rates as whites (Gonzalez, 2019). However, it is possible that the HRS measure of nursing home use (“In the last 2 years, have you been an overnight patient in a nursing home, convalescent home, or other long-term health care facility?”) is confounded with assisted living use and/or includes short-term rehabilitation stays at nursing homes, which could bias results. The

present study extends the literature by including distinct measures of assisted living and long-term nursing home use with a recent nationally representative sample.

Building on previous cross-sectional work (Degenholtz et al., 2016; Fabius & Thomas, 2019; Freedman & Spillman, 2014), this is the first nationally representative prospective study we know of to examine the mediating role of financial resources and health on the association between race and moves to assisted living. In contrast to the nursing home results, the association between race and moves to assisted living was not fully mediated by enabling or need factors. In our final model specification, black underrepresentation in moves to assisted living remained unexplained.

It is possible that unmeasured factors related to systemic racism and/or black-white differences in care preferences, might help explain our finding of black underrepresentation in moves to assisted living, after controlling for enabling and need factors. Historical and current systemic racism have not only restricted access to socioeconomic resources, which limits the ability of black older adults to afford private-pay LTC options, but our LTC system was built and continues to evolve within the context of pervasive racial oppression (Feagin & Bennefield, 2014). Specifically, residential racial segregation and racial



discrimination are two systemic factors that may contribute to black-white disparities in assisted living use. For example, assisted living settings are more likely to be located in higher income areas with a lower proportion of black older adults (Stevenson & Grabowski, 2010). This limited geographic proximity might contribute to racial disparities in access to assisted living, regardless of income, since black older adults are more likely to live in lower income areas than economically similar whites (Ailshire & Garcia, 2018). Differences in care preferences also might help explain black-white disparities in assisted living use since recent research suggests that black older adults are less likely to prefer assisted living as an LTC option compared to whites (Kasper et al., 2018). It is also unclear how these trends are impacted by state variation in Medicaid coverage of assisted living and regulation differences between the tightly regulated nursing home industry, with strict criteria for admittance, and the loosely regulated assisted living industry. Future research should examine further the reasons for black-white disparities in moves to assisted living—particularly testing whether racial differences in care preference and/or factors related to systemic racism affect access, quality, and use.

Strengths of this study include the use of recent data from a nationally representative sample of older adults, with oversamples of black older adults, and prospective follow-up on moves. A significant and novel contribution was the separate investigation of moves to nursing homes and assisted living. Limitations of this study include attrition in the NHATS unrelated to mortality that may affect results, and the short 2-year follow-up period, which limited the number of moves we were able to study. We also examined only black-white disparities in moves; given the increasingly diverse older population, research with samples or oversamples of other racial/ethnic groups are necessary to understand disparities in the current LTC landscape.

Our results suggest the importance of both race and socioeconomic factors on the use of contemporary LTC options. Ideally the changing LTC landscape would provide more LTC choices for all Americans, with options for care at home, and a variety of supported housing alternatives across the continuum of care, including assisted living and nursing homes. However, the emergence of the loosely regulated assisted living industry that is limited primarily to higher income older adults may be contributing to an LTC landscape that perpetuates racial and economic inequities. Recent evidence suggests that black older adults new to assisted living are more likely to have Medicaid, higher levels of acuity, and limited access to high-quality care compared to white older adults (Fabius & Thomas, 2019). It is essential for future research to consider not only access to assisted living, but also the quality of services. Along with others (Fabius & Thomas, 2019; Smith et al., 2008), we encourage research on how the rapidly changing LTC landscape impacts equity in access to high-quality LTC options.

## Supplementary Material

Supplementary data are available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

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## Author Contributions

M. Jenkins Morales and S. A. Robert planned the study. M. Jenkins Morales performed the statistical analysis in consultation with S. A. Robert. M. Jenkins Morales, and S. A. Robert both contributed to writing the article.

## Conflict of Interest

None reported.

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