Home Modifications, Health Outcomes, and Aging in Place: Evidence from Rebuilding Together Beneficiaries

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Abstract

This study examines the relationship among home modifications, self-reported health outcomes, and aging in place intentions of low-income homeowners served by Rebuilding Together (RT), a national nonprofit home repair organization. Using a newly created dataset linking primary survey data with RT administrative modification records, we estimate the effect of a composite Modification Breadth Index (MBI) on self-reported health score and a logistic regression model of the effect of health score on aging in place intention. Results indicate that the cumulative breadth of modifications predicts health outcomes beyond any single intervention. A one standard deviation increase in the MBI is associated with a 3.3-point increase in health score, and health score is a significant positive predictor of aging in place intention (0.12-percentage points increase). Bootstrap mediation confirms that the pathway from modifications to aging in place intentions operates through health. Additionally, homeowners who intend to age in place are 26.7 percentage points more likely to plan intergenerational wealth transfer, suggesting that modification assistance programs carry downstream implications for wealth preservation. Lastly, Black homeowners are 19.4 percentage points more likely to intend wealth transfer than non-Black homeowners, underscoring the importance of home repair programs for a population historically marginalized from wealth building.

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1 Introduction

1.1 Aging in Place and Housing Needs

The United States is approaching an unprecedented demographic shift. The population of 65 and older people is projected to grow from approximately 58 million in 2022 to roughly 82 million by 2050, representing nearly one in five Americans (Mather & Scommegna, 2024).

Over 70% of adults aged 50 and over would prefer to remain in their current home but believe they will not be able to (AARP, 2024), and roughly 60% of adults aged 65 and older would prefer to age in place with a caregiver (Pew Research Center, 2026). Yet, only 10% of American homes are adequately designed for aging populations (Cha, 2025; Vespa et al., 2020). Roughly half of adults report they are not confident their community will continue to meet their needs as they age and 44% of those aged 50-plus expect to relocate at some point (Binette & Farago, 2025). Preference for alternatives such as assisted living rises with income: 28% of upper-income older adults express this preference compared to 13% of lower-income older adults (Pew Research Center, 2026). This suggests that for lower-income households, aging in place is often shaped by financial necessity rather than preference alone.

The implication of this financially constrained choice for lower income households, therefore, is that many older adults will need to modify their homes to accommodate future physical limitations. Nearly 43% anticipate needing accessibility modifications, with bathroom upgrades, grab bars, slip-resistant flooring, ramps, and wider doorways among the most planned changes (AARP, 2024). Forty-four percent of households aged 65 and older have some need for home accessibility features, yet fewer than a third of US homes have basic accessibility features such as a no-step entry or a bedroom and full bathroom on the entry level Will (2015). The scale of unmet need is substantial, and market supply alone will not meet it.

Two theoretical frameworks help explain why the fit between housing conditions and

resident capacity is consequential. Environmental press theory posits that when environmental demands exceed a person's physical capacity, functional decline accelerates and independence becomes difficult to maintain (Cha, 2025). The person-environment-occupation model similarly emphasizes the alignment between an individual's capabilities, their physical environment, and the activities they need to perform, suggesting that home modifications can restore this fit and support continued occupancy (Law et al., 1996).

While structural housing deficiencies are well-documented barriers to aging in place, older adults identify personal health status as an equally important constraint. This suggests that interventions improving health may reinforce aging in place intentions independent of physical home conditions. Brim et al. (2021) find that functional mobility and balance difficulties were the most frequently reported personal health barrier, reported by 9 of 36 older adults. Moreover, personal health concerns including hearing changes, activity tolerance, and cognitive changes were consistently identified as barriers to aging in place.

1.2 Race, Wealth and Homeownership

The physical and financial demands of home maintenance in later life create substantial barriers, particularly for low-to-moderate income and minority households in general for whom modification costs are often prohibitive. For most Americans, the home is their largest asset and primary source of financial security (Baradaran, 2019). Black households face a compounding disadvantage: limited family wealth, higher rates of poverty among extended family members, and structural barriers to homeownership and equity accumulation (Hall & Crowder, 2011). The average wealth in White extended families is approximately five times larger than in Black extended families ($170,740 versus $33,570), and homes in majority-Black neighborhoods are appraised at an average of roughly $48,000 below comparable homes in predominantly White neighborhoods, suppressing the value of the primary asset of Black homeowners (Hamilton & Darity, 2017; Baradaran, 2019).

Health and financial forces produce a stark racial wealth gap: the median net worth of Black families is approximately $7,113 compared to more than $100,000 for White families (Hamilton & Darity, 2017). Minority homeowners face persistent barriers to converting home equity into repair financing, with 48% of older Black residents in Chicago denied mortgage loans compared to 23% of older White applicants, limiting their ability to fund modifications independently (Investigative Project on Race and Equity, 2024).

Venti & Wise (2004) find that families do not intend to drawdown on home equity to finance general non-housing consumption but rather their homes serve as a place to live as they age through retirement years. Moreover, Engelhardt & Eriksen (2021) estimate that the annual flow of housing bequests is roughly 4% of the aggregate housing value held by older Americans, and about half of all homeowners die with their housing wealth typically bequeathed to their children. The inference, therefore, is that aging in place is a wealth preserving means for those with wealth transfer intentions.

When the home is both a consumption good and the household's primary wealth asset, its physical condition carries dual stakes. A home that cannot accommodate the mobility and safety needs of aging residents imposes healthcare costs and may accelerate moves that liquidate accumulated equity. Conversely, targeted home modifications can extend functional independence, reduce fall-related hospitalizations, and help preserve the home as a bequeathable asset. Parental housing wealth has a significant causal impact on children's adult wealth, with increases in parental housing wealth during childhood transmitted to children as higher wealth, homeownership rates, educational attainment, and earnings in adulthood (Daysal et al., 2023). For low-income households of color, modifications may therefore determine not only quality of life but also the viability of intergenerational wealth transfer.

Aging in place preserves autonomy, promotes emotional well-being, and is more cost-effective than assisted living, yet financial capacity, health conditions, homeownership status,

and access to supportive services all shape the decision and ability to age in place (Horner & Boldy, 2008; Pinazo-Hernandis et al., 2022; Sixsmith & Sixsmith, 2008; JCHS, 2016). For low-income Black homeowners, who disproportionately hold their wealth in home equity, the ability to age in place is therefore not merely a housing preference but a determinant of whether wealth transfers to the next generation at all.

1.3 Modifications and Health Outcomes

The existing research on home modifications has focused predominantly on fall prevention and functional outcomes. Systematic reviews document that modifications are effective in reducing falls, improving functional independence, and enhancing quality of life, with occupational therapist-led interventions showing the strongest outcomes (Sheth & Cogle, 2023; Hutchinson et al., 2025; Cha, 2025). Cha (2025) finds that 65% of studies confirm effectiveness for fall prevention and functional independence, but only 35% examine housing accessibility and broader lifestyle factors.

Home modifications have been shown to improve self-rated health and reduce functional decline among older adults. Chandola & Rouxel (2022) analyze a survey sample of about 10,500 adults aged 60 and over and find that external home modifications decreased the probability of poor health by 4%. Similarly, Wu & Grundy (2025), using the same English Longitudinal Study of Ageing, find that home adaptations may slow down disability developments in older adults. However, Cha (2025) identifies the interaction between home modifications and health-related changes as under-explored and calls for research that goes beyond physical safety to encompass functional independence and quality of life.

The economic dimensions of home modifications have received even less attention. Whether specific categories of modifications relate to older adults' health outcomes and aging in place intentions remains largely unexplored. In a study of beneficiaries of two Rebuilding Together programs in Philadelphia, Grasso et al. (2023) report that the average total cost of

modifications made in the homes of nine program participants was $10,396.65, in contrast to annual paid caregiving expenses that ranged from $22,763 to $154,478. This comparison indicates that home modifications, including client-centered assessments conducted by an occupational therapist, constitute a cost-effective and meaningful strategy for facilitating aging in place.Levchenko (2023) finds that having a grab bar/shower seat in one's home is consistently associated with a decreased risk of nursing home admission, concluding that modifications may play a vital role in promoting independent living and reducing reliance on institutional care.

Racial disparities add further complexity. Marginalized groups, particularly Black and Hispanic older adults, are more likely to age in place because financial constraints limit their alternatives (Hamilton & Darity, 2017; Heflin & Pattillo, 2002). Black individuals report lower rates of homeownership, home equity, and business equity compared to White counterparts (Herring & Henderson, 2016), and racial and ethnic minorities show higher odds of multimorbidity even after controlling for socioeconomic characteristics (Johnson-Lawrence et al., 2017). Yet studies of home modifications rarely center the perspectives of low-income minority homeowners or examine the intersection of modifications, health, and aging in place. Will (2015) projects significant unmet retrofit demand concentrated among low-income households. Moreover, Zinn (2024) finds that Black homeowners live in inadequate homes at nearly double the rate of white homeowners (5.7 versus 3.4 percent as of 2021), and face compounding barriers to self-financing repairs given lower rates of refinancing approval and significantly less liquid wealth than white households. This gap between need and evidence is particularly consequential given that low-income Black homeowners represent both the population most likely to age in place and the least likely to have the financial resources to fund modifications independently. This study attempts to addresses this gap by providing empirical evidence on how home modifications relate to health outcomes and aging in place intentions for this population.

This study addresses these gaps using a novel dataset that combines primary survey data from Rebuilding Together recipients with administrative records on specific home modifications received. We aim to answer the following questions: first, are home modifications associated with improved self-reported health outcomes among low-income homeowners; second, are better health outcomes associated with stronger intentions to age in place; and third, does aging in place intention predict wealth transfer planning among low-income homeowners. This study makes three contributions to the existing literature. First, it examines home modifications as potential determinants of health outcomes and aging in place intentions among low-income homeowners. Second, it introduces a Modification Breadth Index derived from principal component analysis to capture the cumulative breadth of modifications rather than individual intervention effects. Third, it documents a significant racial difference in planned wealth transfer.

We find a significantly positive link between home modifications and aging in place intentions operating through health outcomes, and document that aging in place intentions are in turn positively associated with planned wealth transfer. Black homeowners are substantially more likely to intend both aging in place and wealth transfer than non-Black homeowners. The remainder of the paper proceeds as follows. Section 2 provides a brief description of Rebuilding Together while the data and sample are discussed in Section 3. Section 4 presents the methodology. Section 5 presents regression results. Sections 6 and 7 provide a discussion of results and limitations, respectively. Section 8 concludes and discusses policy implications.

2 Rebuilding Together

Rebuilding Together (RT) is a national nonprofit organization that provides home modification and repair services to low-to-moderate income homeowners across the United States. RT coordinates a network of 126 local affiliates that deliver housing preservation, home

modification, and community development services to help homeowners remain in their homes. Its programming is guided by 25 Safe and Healthy Housing Priorities, which encompass structural, safety, accessibility, environmental, and quality of life improvements designed to enable residents, particularly older adults, to remain safely in their homes. Its mission is directly aligned with aging in place outcomes: by providing modifications that low-income homeowners could not otherwise afford, RT enables continued occupancy and asset preservation among a population for whom the home is often the primary or sole wealth-generating asset. This study links RT administrative modification records with survey-based measures of health outcomes and aging in place intentions, offering empirical evidence on whether nonprofit-delivered home modification programs generate measurable benefits for low-income homeowners beyond the physical improvements themselves. Such potential outcomes demonstrate the crucial role of close partnerships between academic researchers and community-based organizations in creating unique datasets for investigating policy-relevant challenges facing key demographic groups.

3 Data

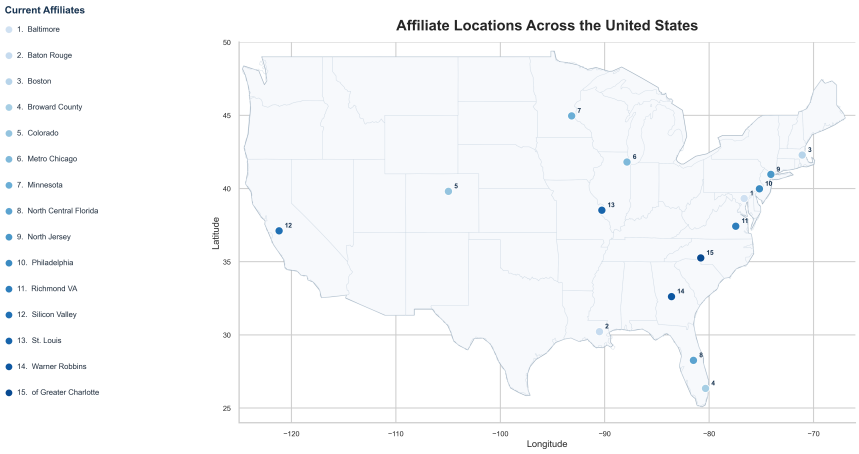
3.1 Data Source and Study Design

Primary data were collected through the Aging in Place, Intergenerational Wealth, and Quality of Life Survey (see Appendix), which was developed and administered by Howard University researchers in partnership with RT. This self-report instrument captures demographic characteristics, aging in place intentions, financial and asset information, wealth transfer plans and estate planning actions, and self-assessed health outcomes, including functional health dimensions such as social isolation, mental health, and physical health. Health and overall quality of life are also assessed using the EQ-5D-5L survey (see Appendix), a standardized self-report instrument developed by EuroQol Group that measures respondent severity across five dimensions: mobility, self-care, usual activities, pain/discomfort and

anxiety/depression. Respondents also rate their overall health on the day of completion using a 0–100 vertical visual analogue scale (Herdman et al., 2011).

Survey instruments and consent forms, approved by the Insitutitonal Review Board (IRB-2023-1058), were mailed to 2,119 homeowners across 15 of 18 participating RT affiliates located across the United States (see Figure 1). The final sample consists of 471 respondents, yielding an effective response rate of approximately 22%. Data on the types of modifications and repairs homeowners received were obtained directly from RT's administrative records and were available for 319 of the 471 survey respondents. This subset constitutes the primary sample for this paper.

Figure 1: Affiliate locations that participated in survey dissemination and survey collection



Source: Constructed by Authors based on RT Data

3.2 Summary Statistics

Table 1 presents the demographic distribution of all respondents. The sample is predominantly Black (69%), female (80%), and retired (67%). Roughly 60% of the respondents report household income at or below $25,000. Approximately 17% of respondents reported being married, and roughly 9% were veterans. On average, respondents report a health score of 56.3, indicating moderate limitations in health and functioning, and the average age is 73.4.

Nearly 9 out of 10 respondents (88.1%) reported intent to age in place, while about 55% plan to transfer their wealth.

Table 1: Summary Statistics (Full Sample $n = 471$)

Variable	**%**
Race Groups	
Black	69.0
Non-Black	29.9
Gender	
Male	19.3
Female	80.0
Marital Status	
Married/Civil union	16.5
Separated/divorced/single/widowed	83.5
Income Groups	
$25,000 and below	59.0
$25,001–$50,000	31.4
Above $50,000	7.0
Veteran	8.8
Retired	66.5
Plan to age in place	88.1
Plan to transfer wealth	54.5

Table 2 reports the demographic composition of the subsample of respondents with available administrative modification and repairs records. Respondents are predominantly female (79.6%) and Black (63.6%), and most are retired (67.2%). Income is concentrated at the lower end with 59.9% of respondents reporting household incomes at or below $25,000. Roughly 8% are veterans and 17.2% are married. The mean health score is 57.4, and 87.1% of respondents report intent to age in place and 52.7% have wealth transfer intentions. The mean age is 73.5.

Table 2: Summary Statistics (Subsample $n = 319$)

Variable	%
Race	
Black	63.6
Non-Black	36.4
Gender	
Male	20.4
Female	79.6
Marital Status	
Married/Civil union	17.2
Separated/divorced/single/widowed	82.8
Age	
65 and below	18.1
66–75	44.2
76 and above	37.7
Income Groups	
$25,000 and below	59.9
$25,001–$50,000	33.7
Above $50,000	6.4
Veteran	8.4
Retired	67.2
Plan to age in place	87.1
Plan to transfer wealth	52.7

3.3 Home Modification and Repair Patterns

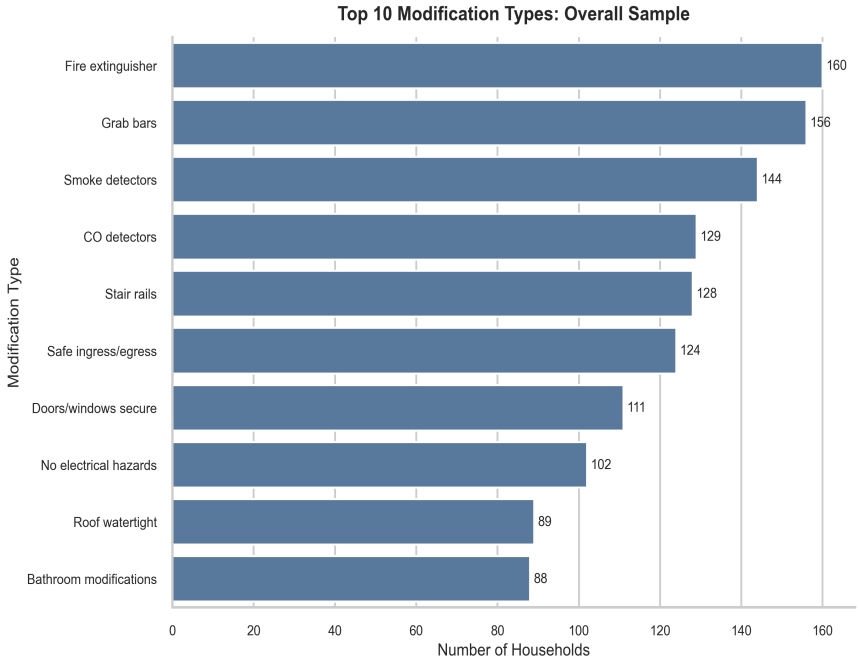
The following subsections describe the patterns of modifications received by respondents in the subsample, including the most frequently received modifications and variation by geography and race.

3.3.1 Most Frequently Received Home Modifications

Figures 1 through 3 present the ten most frequently received modifications across the full subsample and by race. For both the full sub-sample and the Black homeowner component of it, the most common modifications were related to fire and safety, and mobility, with fire

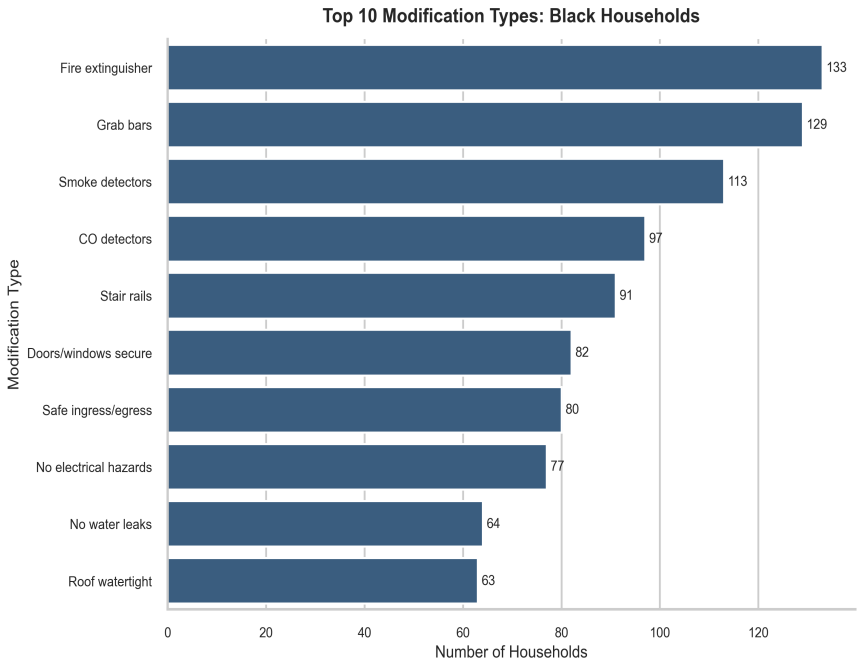
extinguishers, grab bars and smoke detectors ranking among the top modifications received (Figures 1 and 2). For non-Black homeowners, the most common modifications spanned access, mobility and fire and safety groups, with safe ingress, stair rails and smoke detectors ranking highest (Figure 3).

Figure 2: Top 10 Modifications and Repairs, Full Subsample ($n = 319$)



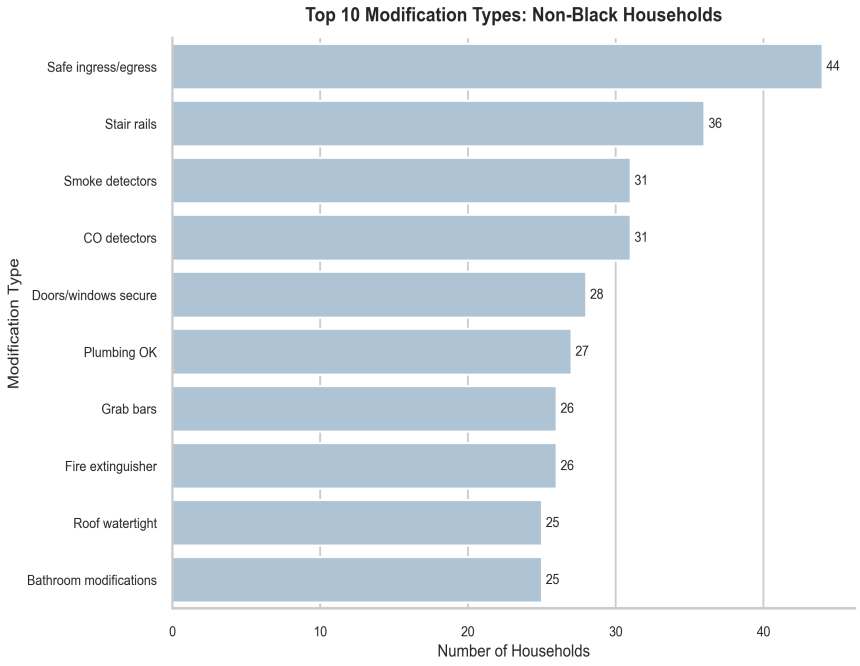
Source: Constructed by Authors based on RT Data

Figure 3: Top 10 Modifications and Repairs, Black Households ($n = 201$)



Source: Constructed by Authors based on RT Data

Figure 4: Top 10 Modifications and Repairs, Non-Black Households ($n = 115$)



Source: Constructed by Authors based on RT Data

2c2. Home Modifications Pattern by Geography and Race

We categorize the 25 modifications into five groups: fire and safety, mobility, structural integrity and asset preservation, environmental health and indoor systems, and access and housing quality (see Appendix).

Table 3 reports mean modifications received by race across the five modification categories, along with mean health scores for each group. Black homeowners received a higher average number of total modifications (7.6) than non-Black homeowners (4.6), a gap that is consistent across all five modification categories. The largest absolute difference is in fire and safety modifications, where Black homeowners received an average of 2.2 compared to 1.1 for non-Black homeowners. A similar gap appears in mobility modifications. Differences in environmental health and housing quality are smaller in magnitude. Black homeowners also report a higher mean health score (60.0) compared to non-Black homeowners (53.7).

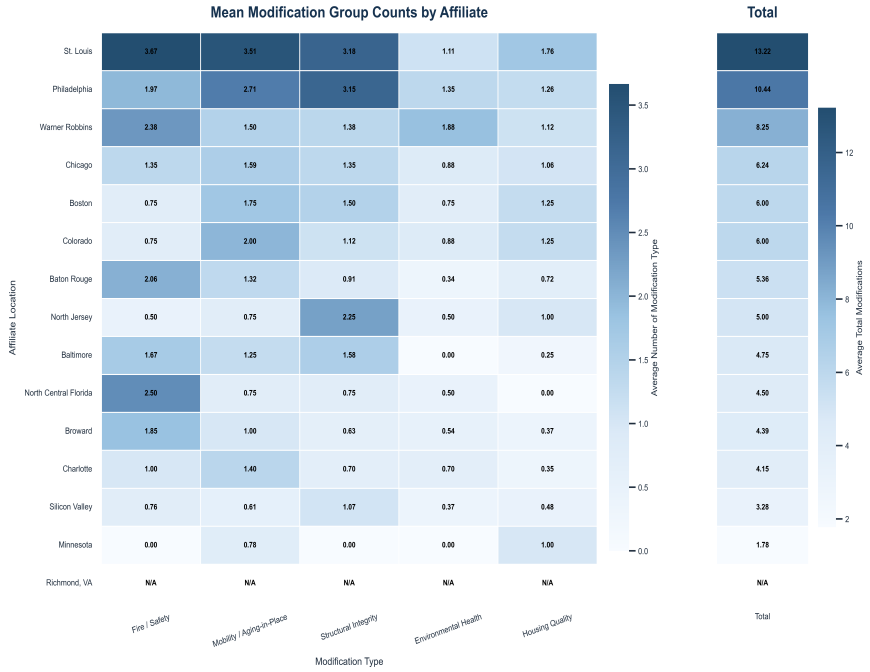
Table 3: Summary Statistics, Overall and by Race

	Overall Mean (SD)	**Black Mean (SD)**	**Non-Black Mean (SD)**
Total modifications received	6.5 (5.3)	7.6 (5.4)	4.6 (4.6)
Health score	57.4 (31.5)	60.0 (31.3)	53.7 (30.9)
Modification Groups			
Fire and safety	1.8 (1.6)	2.2 (1.6)	1.1 (1.4)
Mobility and aging in place	1.7 (1.6)	2.0 (1.6)	1.1 (1.2)
Structural integrity and asset preservation	1.5 (1.6)	1.7 (1.7)	1.2 (1.5)
Environmental health and indoor systems	0.7 (1.0)	0.77 (1.05)	0.6 (1.0)
Access and housing quality	0.9 (1.0)	1.0 (1.0)	0.7 (0.9)

Figure 4 illustrates the mean number of modifications received within each of the five categories (columns) for each affiliate (rows), sorted from highest to lowest average total modifications. Substantial geographic variation exists in both the total volume of modifications and their categorical composition. The St. Louis affiliate delivers the highest mean modifications per homeowner (13.2), with high counts in the fire and safety (3.7), mobility (3.5), and

structural (3.2) categories. The Philadelphia affiliate ranks second overall (10.4), and Warner Robbins third (8.3). Minnesota and Silicon Valley, provide fewer than 4 modifications on average.

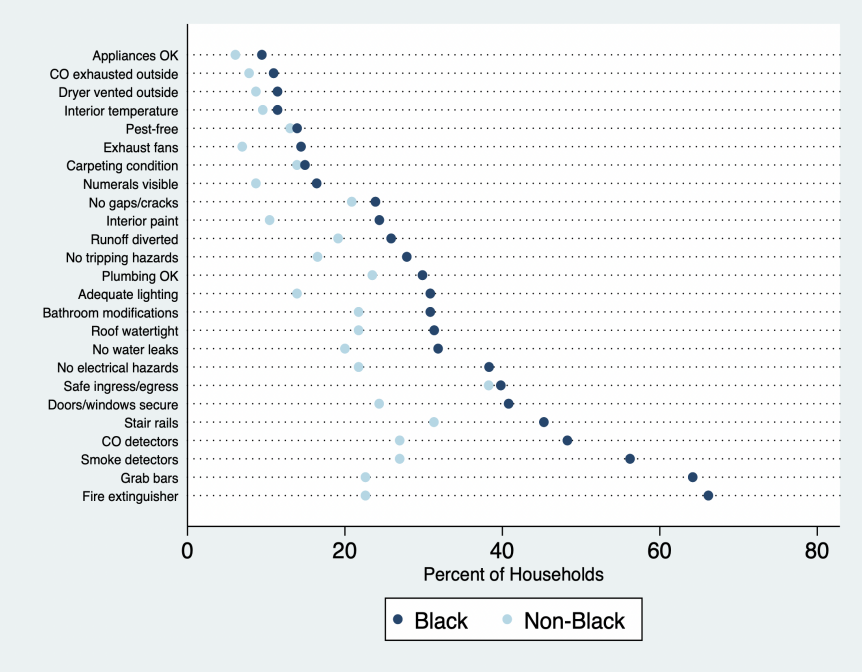
Figure 5: Mean Modification Group Counts by Affiliate, Sorted by Average Total Modifications



Source: Constructed by Authors based on RT Data

Figure 5 presents the receipt rate of each home modification by race. Black homeowners report higher receipt rates than non-Black homeowners across almost all 25 modifications. The largest gaps appear in fire and mobility modifications, with fire extinguishers, grab bars, and smoke detectors showing the highest overall receipt rates and the widest racial disparities. Carbon monoxide detectors and stair rails also show notably higher receipt rates among Black homeowners. For environmental and health modifications, receipt rates are low for both groups and the racial gap is relatively narrow.

Figure 6: Receipt Rate of Individual Modifications by Race



Source: Constructed by Authors based on RT Data

4 Methodology

To estimate the impact of home modifications, we construct a Modification Breadth Index (MBI) using principal component analysis (PCA) of the 25 binary modification variables. PCA reduces the dimensionality of the modification data by identifying linear combinations of the original variables that account for the greatest share of variance. The first principal component (PC1) is retained as the MBI. PC1 has an eigenvalue of 6.62 and explains 26.5% of total variance, substantially more than the second component (eigenvalue 1.99, 8.0%). The large gap between PC1 and PC2 supports focusing on the first component as the primary summary measure. The loadings on PC1 are positive and broadly distributed across all 25 modifications, ranging from 0.13 to 0.26, indicating that PC1 captures general modification breadth rather than any specific modification type. The modifications with the highest loadings on PC1 are adequate lighting, no tripping hazards, runoff management, no

electrical hazards, and interior temperature compliance. Individual modification coefficients are difficult to interpret in isolation because modifications are not randomly assigned and are often received in bundles, creating multicollinearity across the 25 binary indicators. The MBI addresses this by capturing overall modification exposure as a single composite measure.

We employ a three-stage empirical strategy to examine the sequential pathway from home modification breadth, to aging in place intention, through health. In the first stage, we estimate the association between the MBI and self-reported health score using OLS. In the second stage, we estimate the effect of health score on aging in place intention using a logit model. In the third stage, we test whether the association between modification breadth and aging in place intention operates through health as an intermediate mechanism, estimating indirect effects via the product-of-coefficients method with cluster bootstrap inference (Preacher & Hayes, 2008). We additionally estimate whether aging in place intention predicts planned wealth transfer as a secondary analysis, reported separately.

The first-stage OLS model takes the following functional form:

$$\text{Health Score}_i = \alpha + a \cdot \text{MBI}_i + \beta_2 \mathbf{X}_i + \gamma_j + \varepsilon_i \tag{1}$$

where $\mathbf{X}_i$ is a vector of controls including race, gender, marital status, veteran status, retiree status, age, and income group; and γ_j is the affiliate location fixed effect.

For the second-stage, we estimate a logit model with the following functional form:

$$P(\text{AIP}_i = 1 \mid \mathbf{Z}_i) = \Lambda(\alpha + b \cdot \text{Health Score}_i + \beta_1 \mathbf{X}_i + \gamma_j) \tag{2}$$

where AIP_i is a binary indicator equal to 1 if homeowner i intends to age in place and 0 otherwise; $\mathbf{X}_i$ is the full vector of covariates (race, gender, marital status, veteran status, retiree status, age, and income group); and $\Lambda(\cdot)$ denotes the logistic cumulative distribution

function. Average marginal effects are computed and reported for all covariates. Logit coefficients represent log-odds and are not directly interpretable in terms of probability changes; thus, the average marginal effect for a continuous variable represents the sample-average change in predicted probability associated with a one-unit increase in that variable. For binary indicators, it represents the sample-average difference in predicted probability relative to the specified reference group.

To test whether MBI affects aging in place intention through health, we perform a mediation analysis estimating indirect effects as products of the component path coefficients (Preacher & Hayes, 2008).

Indirect effects[2]:

$$\hat{\delta}_{ab} = a \times b \quad (\text{MBI} \rightarrow \text{Health Score} \rightarrow \text{AIP}) \tag{3}$$

where a and b are the coefficients on MBI and health score, respectively.

Lastly, we estimate whether aging in place intention predicts planned wealth transfer. This is motivated by the observation that for low-income homeowners, the home is often the primary transferable asset, thus the intention to remain in one's home carries implications for intergenerational wealth transfer. We treat this as a secondary analysis and present it as a downstream implication of the main findings. The model takes the following functional form:

$$P(\text{WT}_i = 1 \mid \mathbf{Z}_i) = \Lambda(\alpha + \beta_1 \text{AIP}_i + \beta_2 \mathbf{X}_i + \gamma_j) \tag{4}$$

where WT_i is a binary indicator equal to 1 if homeowner i intends to transfer wealth and 0 otherwise; AIP_i is a binary indicator equal to 1 if homeowner i intends to age in place and 0 otherwise; $\mathbf{X}_i$ is the full vector of covariates (race, gender, marital status, veteran status,

[2]The sampling distribution of $\hat{\delta}_{ab}$ is estimated via cluster bootstrap (1,000 draws, affiliates resampled with replacement). The 90% confidence interval is the 5th and 95th percentiles of the bootstrap distribution (Preacher & Hayes, 2008; Cameron & Miller, 2015).

retiree status, age, and income group).

Results

The OLS regression results for the effect of the MBI on health score are presented in Table 4. MBI is positively and significantly associated with health score (1.3-point increase) suggesting that homeowners who received a broader and more intensive set of modifications report higher health scores on average.[3] Black homeowners' self-reported health score is 5.8 points higher than their non-Black counterparts, and a one-unit increase in age reduces health scores by 0.4 points. Compared to homeowners reporting income below $25,000, those with income above $50,000 report health scores roughly 20 points higher. Being a veteran is significantly and negatively associated with health scores (17.4-point reduction) compared to non-veterans. Lastly, retirees are healthier (9.3 points) than non-retirees ($p = 0.1$).

[3]The MBI has a mean of approximately zero, a standard deviation of 2.6, and ranges from -3 to 9.1. Thus, a one standard deviation increase in the MBI is associated with a 3.3-point increase in health score.

Table 4: OLS Regression Results: Effect of MBI on Health Score

	Health Score
MBI	1.268*
	(0.642)
Black	5.763*
	(3.025)
Female	−4.291
	(4.972)
Married	−4.630
	(4.792)
Veteran	−17.356*
	(8.801)
Retired	9.300^{+}
	(5.250)
Age	−0.436*
	(0.228)
Income Group	
(ref: below $25,000)	
$25,001–$50,000	7.525
	(6.043)
Above $50,000	19.986**
	(7.556)
Location Fixed Effects	Yes
N	295
Within R^2	0.0735

Notes: * $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$. Standard errors in parentheses. MBI is the first principal component derived from PCA of the 25 modification variables. Standard errors clustered at the affiliate location level (14 clusters).

Table 5 presents average marginal effects from a logit regression of health score on intention to age in place. Health score is a positive and significant predictor of aging in place intentions. A one unit increase in health score is associated with a 0.12 percentage-point increase in the probability of intending to age in place. Across the full range of health scores, this implies

a roughly 15 percentage-point difference in aging in place probability between homeowners at the lowest and highest ends of the health score distribution. Black homeowners are 7.2 percentage points more likely to age in place than non-Black homeowners. Retiree status, age, gender, marital status, veteran status, and income are not significant predictors in this model.

Table 5: Average Marginal Effects: Effect of Health Score on Probability of Intending to Age in Place

	Pr(Age in Place) dy/dx
Health score	0.0012**
	(0.0006)
Black	0.072*
	(0.040)
Female	0.028
	(0.051)
Married	0.073
	(0.061)
Veteran	0.164
	(0.112)
Retired	0.070*
	(0.037)
Income Group	
(ref: below $25,000)	
$25,001–$50,000	−0.006
	(0.040)
Above $50,000	−0.071
	(0.099)
Location Fixed Effects	Yes
N	417
Pseudo R^2	0.074

Note: * $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$. Standard errors in parentheses. Sample restricted to respondents with administrative modification records. Boston and North Jersey affiliates are excluded from the model due to perfect prediction of AIP within those locations. The model is estimated on 13 affiliate clusters.

Table 6 presents the results of the mediation analysis, which tests whether the association between modification breadth and aging in place intention operates through health as an intermediate variable. The indirect pathway from home modification breadth to aging in

place intentions, operating through self-reported health scores, is positive and statistically distinguishable from zero at the 90% level. The b path (health score $\rightarrow$ AIP) is significant at the 1% level, while the a path (MBI $\rightarrow$ health score) is significant at the 10% level, consistent with the reduced-form OLS estimate in Table 4. The direct effect of MBI on AIP intention, net of health, is indistinguishable from zero, suggesting health is the operative channel through which modifications influence aging in place intentions.

Table 6: Mediation Results

	Estimate	**90% CI**	***p***
a path: MBI $\rightarrow$ VAS (OLS)	1.200	—	0.087
b path: VAS $\rightarrow$ AIP (logit, log-odds)	0.0175	—	0.008
Indirect effect (log-odds)	0.0210	[0.0016, 0.0482]	0.074
Direct effect: MBI $\rightarrow$ AIP (log-odds)	-0.0473	—	0.703

Notes: Bootstrap confidence intervals are preferred for indirect effects given known limitations of the delta method (Preacher & Hayes, 2008); cluster bootstrap is used throughout given the small number of affiliate clusters (Cameron & Miller, 2015). Bootstrap draws = 1,000. 90% CI reported as the 5th and 95th percentiles of the bootstrap distribution.

4.1 Downstream Effects of Aging in Place

Table 7 presents average marginal effects from a logit regression of intention to age in place and wealth transfer intentions. Aging in place intention is a positive and significant predictor of wealth transfer intentions. Homeowners who intend to age in place are 26.7 percentage points more likely to intend wealth transfer than those who do not. On average, Black homeowners are 19.4 percentage points more likely to transfer wealth than non-Black homeowners, and a veteran is 15.7 percentage points more likely to intend wealth transfer than non-veterans. Lastly higher-income homeowners (incomes above $50,000) have 15.1 percentage-point higher probability of transferring wealth compared to homeowners with incomes of $25,000 or below. Retiree status, age, gender, and marital status are not significant predictors in this model.

Table 7: Average Marginal Effects: Effect of Aging in Place Intention on Probability of Intending to Transfer Wealth

	Pr(Wealth Transfer) dy/dx
Age in place intention	0.267***
	(0.056)
Black	0.194***
	(0.057)
Female	−0.029
	(0.050)
Married	0.009
	(0.074)
Veteran	0.157*
	(0.082)
Retired	0.033
	(0.049)
Income Group	
(ref: below $25,000)	
$25,001–$50,000	0.043
	(0.047)
Above $50,000	0.151***
	(0.056)
Age	−0.003
	(0.004)
Location Fixed Effects	Yes
N	426
Pseudo R^2	—

Note: * $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$. Standard errors in parentheses. Sample restricted to respondents with administrative modification records. The model is estimated on 15 affiliate clusters.

Discussion

Taken together, the results support an inferential chain linking home modifications to self-reported health and health to aging in place intentions, with variation across demographic groups. Environmental press theory and the person-environment-occupation model suggest that when environmental demands exceed a person's physical capacity, functional decline accelerates (Cha, 2025). Homeowners who received a broader bundle of modifications report higher health scores on average, suggesting a cumulative dose effect that individual modification analyses alone cannot capture. Cha (2025) notes that prior studies have largely examined modifications in isolation, and the MBI approach addresses this limitation by examining whether the overall breadth of the intervention predicts health outcomes.

The finding that health score is a significant positive predictor of aging in place intention connects the physical condition of the home to a stated behavioral outcome. This is consistent with the findings of Chandola & Rouxel (2022) and Wu & Grundy (2025) highlighting the importance of health in homeowners' decision to age in place, which is not simply a preference but a feasible plan that depends on functional capacity (Will, 2015). For low-income homeowners who cannot self-finance retrofits, nonprofit-delivered modifications represent a critical bridge between the preference to age in place and the practical ability to do so. The significance of income above $50,000 in the health score model, despite the sample being broadly low-income, suggests that even modest income differences within a constrained range have implications for health outcomes.

Aging in place intention is consequential as homeowners who plan to age in place are substantially more likely to plan wealth transfer. Engelhardt & Eriksen's (2021) findings that the annual flow of housing bequests is roughly 4% of the aggregate housing value held by older Americans suggest that the relationship between aging in place and wealth transfer intentions has broad wealth gap implications. Black homeowners in this sample are substantially and significantly more likely to intend wealth transfer than non-Black homeowners. Given the

well-documented racial homeownership and wealth gap (Hamilton & Darity, 2017; Hall & Crowder, 2011), these results suggest that modification assistance programs may function as a wealth preservation intervention for Black homeowners, supporting both the feasibility of aging in place and the downstream likelihood of intergenerational transfer.

Limitations

Several limitations of this study merit acknowledgment. First, the cross-sectional design precludes causal inference. Homeowners who receive modifications from RT are a self-selected sample, and those who received particular modification types may differ systematically from those who did not in ways that also affect their aging in place intentions. Second, the study relies on self-reported survey data. Intentions to age in place reflect plans at a single point in time and may not accurately predict subsequent behavior. Third, administrative modification records were available for only 319 of the 471 survey respondents. This incomplete linkage introduces the potential for selection bias in the modification subsample, as respondents with available records may differ from those without in ways that affect both modification receipt and outcome intentions. Comparisons between the linked subsample and the full sample suggest the two groups are broadly similar across gender, marital status, income, and outcome variables, with differences within two percentage points. The most notable difference is racial composition (Black respondents comprise 69.0% vs of the full sample compared to 63.6% of the linked subsample) suggesting modest underrepresentation of Black homeowners in the analytic sample. Fourth, the 22% survey response rate raises the possibility of non-response bias. If the characteristics of non-respondents differ systematically from those of respondents, the sample may not be representative of the full population of RT service recipients.

Conclusion

This study examines the relationship between home modifications, self-reported health outcomes, and aging in place intentions and its downstream effects on intergenerational wealth transfer among low-income homeowners served by Rebuilding Together. Using a novel dataset that links primary survey data with administrative modification records, we find evidence of a positive chain: home modifications are associated with improved self-reported health, and better health is associated with stronger intentions to age in place. Moreover, aging in place intentions are positively associated with plans to transfer wealth. The MBI results suggest that the cumulative breadth of modifications received, not any single intervention, is associated with higher health scores.

The racial patterns documented in this study are consistent with the broader literature. Black homeowners in the sample receive substantially more modifications than non-Black homeowners across all five modification categories, reflecting documented barriers that minority homeowners face in self-financing repairs (Zinn, 2024; Will, 2015). Additionally, Black homeowners are more likely to age in place and transfer wealth highlighting the importance of home modification programs to a group that has been historically and systematically marginalized when it comes to wealth building. Whether the wealth transfer intentions documented here translate into realized bequests, and whether the mechanisms differ by race or income, remains an open question for future research.

These findings, drawn from a collaborative research process between an academic research center and a community-based nonprofit, provide rigorous empirical input for policy and program initiatives under consideration by local and federal agencies. Preserving homeownership through targeted repairs has been a priority across federal, state, and local governments. The USDA and HUD, along with state and local agencies, offer financial assistance programs for home repairs and rehabilitation, and many jurisdictions, such as Maryland's critical home repair grant (Maryland DHCD, 2026), provide tailored programs addressing energy efficiency,

accessibility, and safety improvements.

The DC Black Homeownership Strike Force report (DMPED, 2022) recommends expanding home repair programs beyond roofs and accessibility modifications, creating comprehensive platforms for rehabilitation counseling, and providing legal support to combat housing displacement. However, implementation of small home repair programs has faced persistent challenges, with program rules and eligibility requirements creating barriers for the households most in need. Partnering with nonprofit organizations that have the experience and community relationships to identify needed repairs and complete them efficiently is critical. Rebuilding Together's model, which delivers comprehensive, multi-modification interventions to low-income homeowners at no cost, offers a promising and scalable framework for addressing the unmet need that Will (2015) projects will only grow as the population ages. Housing stability is an essential but often underrecognized component of aging in place. Pairing clinical aging in place interventions with community-based housing solutions can better address health disparities, lower the risk of institutionalization, and support long-term livability (Rhodes & McNichols, 2025).

Appendix

Group Classifications

Group 1: Immediate Safety & Hazard Prevention (Fire/Safety)

- X08 Smoke detectors
- X09 CO detectors
- X10 Fire extinguisher
- X11 CO exhausted outside
- X12 No electrical hazards

Group 2: Mobility & Aging in Place

- X16 Bathroom modifications
- X17 Grab bars
- X18 Stair rails
- X19 No tripping hazards
- X23 Adequate lighting

Group 3: Structural Integrity & Asset Preservation

- X02 Roof watertight
- X03 Runoff diverted
- X04 No gaps/cracks/holes
- X05 Doors/windows secure
- X06 Pest-free
- X25 No water leaks

Group 4: Environmental Health & Indoor Systems

- X14 Exhaust fans
- X13 Appliances OK
- X15 Plumbing (sink/toilet/bath)
- X21 Dryer vented outside
- X22 Interior temperature

Group 5: Access, Visibility & Housing Quality

- X01 Safe ingress/egress
- X07 Numerals visible
- X20 Carpeting condition
- X24 Interior paint

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IRB APPROVAL DATE: 01/17/2025
IRB EXPIRATION DATE: 01/16/2026

Aging in Place, Intergenerational Wealth, and Quality of Life Survey

Introduction/Preamble

DEMOGRAPHICS:

1. Which of the following best describes your race?

1 White
2 Black/African American
3 Asian
4 Hispanic
5 Native American
6 Alaska Native
7 Native Hawaiian/Pacific Islander
8 Mixed race/Multiracial
9 Other (please specify)

2. What is your gender?

1 Male
2 Female
3 Other

3. What is your age? _____

4. What is your marital status?

1 Married
2 Civil union
3 Separated/Divorced
4 Single
5 Widowed/widower

5. Are you on active duty or a veteran in the military?

1 Yes
2 No

6. Which of the following best describes your living arrangements?

1 I am the only adult in the household.

2 I live with my spouse/partner/significant other.
3 I live with my extended family (includes spouse/partner/significant other and/or children and/or grandchildren)

7. What is your employment status?

1 Self-employed
2 Full-time employments.
3 Part-time employments.
4 Permanently unable to work due to illness or disability.
5 Unemployed including temporary layoff.
6 Retired

8. What is your household's approximate annual income before taxes, including wages, tips, investment income, public assistance, income from retirement plans, etc.?

1 Below $10,000
2 $10,000 - $25,000
3 $25,001 - $50,000
4 $50,001 - $75,000
5 $75,001 - $100,000
6 $100,001 - $150,000
7 Above $150,000

Aging in Place, Home Repairs, Intergenerational Wealth Planning

9. Do you own your home?

1 Yes
2 No

10. What year did you move into your home? _____

11. Do you plan to age in place?

1 Yes
2 No
3 I'm not sure.

12. If yes, what are your reasons for doing so? (CIRCLE ALL THAT APPLY)

1 I am familiar with and feel comfortable in my home environment.
2 I desire to maintain independence and autonomy.
3 I have emotional attachment to my home and community.
4 I live close to my family and friends.
5 I have access to familiar resources and support systems.
6 It is more cost-effective than other living arrangements.
7 I have necessary healthcare services nearby.
8 I want to avoid the stress and disruption associated with relocation.
9 I want to preserve a sense of stability and continuity.
10 I want to pass on my home to my children.
11 Other reasons (please specify)

_____
_____
_____
_____
_____

13. What do you think are the benefits associated with aging in place where you live now? (CIRCLE ALL THAT APPLY)

1 Familiar surroundings
2 Independent living
3 Emotional well-being
4 Community connection
5 Cheaper than staying in an assisted living facility
6 Sense of continuity
7 Avoid the hassle of moving
8 Feel safer at home
9 None
10 Other (please specify)

14. What do you think are the limitations associated with aging in place where you live now? (CIRCLE ALL THAT APPLY)

1 Lack of personal/neighborhood safety
2 My ability to access local goods and services
3 Local availability of good and services

4 Too much stress on caregiver
5 Too far away from relatives
6 Cost of making repairs
7 Home in disrepair
8 None
9 Other (please specify)

_____
_____
_____
_____

15. What year was your home modified, renovated, and/or repaired by Rebuilding Together?

1 This Year
2 1 Year Ago
3 2 Years Ago
4 3 Years Ago
5 4 or More Years Ago

16. Do you anticipate passing on wealth to a younger generation?

1 Yes
2 No
3 I'm not sure.

17. If yes, what types of wealth? (CIRCLE ALL THAT APPLY)

1 Financial assets
2 Home
3 Business
4 Land
5 Personal property
6 I'm not sure what type yet
7 Other (please specify)

_____
_____
_____
_____

18. Approximately what is the overall average value of the assets you plan to transfer? $_____ (i.e. financial, home, business, land, personal property, etc.)

19. How important is it for you to leave wealth to younger generations?

1 Not important at all
2 Somewhat important
3 Very important
4 Not applicable/I don't know

20. Have you made any arrangements to transfer wealth to younger generations?

1 Yes (please check all that apply)
____Have a Will
____Created a Trust
____Added beneficiary to deed
____Added beneficiary to financial account
2 No
3 Not applicable

21. If you do not plan to pass on your home to a younger generation, please explain why

_____
_____
_____
_____

HEALTH AND QUALITY OF LIFE

22. Do you have any of the following physical/mental health conditions (CIRCLE ALL THAT APPLY)

Physical Health Conditions

1 Cardiovascular disease (e.g., heart disease, stroke)
2 Arthritis

3 Chronic Obstructive Pulmonary Disease
4 Mobility issues (use of aid cane, wheelchair, walker, etc.)
5 Diabetes
6 Cancer
7 Hypertension (high blood pressure)
8 Neurological disorders (e.g. Parkinson's disease, multiple sclerosis)
9 Chronic pain conditions
10 Osteoporosis
11 Other (please specify)_____

Mental Health Conditions

1 Anxiety
2 Stress
3 Depression
4 Post traumatic stress disorder
5 Cognitive impairment or dementia
6 Other (please specify)_____

23. Do you feel socially connected to your community or neighborhood?

1 Not Connected
2 A Little Connected
3 Somewhat Connect
4 Moderately Connected
5 Very Connected

24. Do you experience falls in the home or a fear of falling?

1 Yes
2 No

25. If yes, do you believe that home modifications, renovations and/or repairs in the home have helped you reduce the number of falls or the fear of falling in the home.

1 Yes
2 No
3 Sometimes

26. Have you experienced any changes in healthcare costs or expenses where you currently live?

1 Yes, my healthcare costs or expenses have increased a lot
2 Yes, my healthcare costs or expenses have increased slightly
3 No, my healthcare costs or expenses have remained the same
4 No, my healthcare costs or expenses have decreased

5 No opinion

27. Do you feel nervous or stressed about the cost of healthcare as a homeowner who is aging in place?

1 Never or Almost Never
2 Rarely
3 Sometimes
4 Often
5 Always or Almost Always

28. How would you rate your overall quality of life?

1 Poor
2 Fair
3 Good
4 Very good
5 Excellent

THANK YOU!

IRB NUMBER: IRB-2023-1058
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Health Questionnaire

English version for the UK

Under each heading, please tick the ONE box that best describes your health TODAY.

MOBILITY

I have no problems in walking about ❑
I have slight problems in walking about ❑
I have moderate problems in walking about ❑
I have severe problems in walking about ❑
I am unable to walk about ❑

SELF-CARE

I have no problems washing or dressing myself ❑
I have slight problems washing or dressing myself ❑
I have moderate problems washing or dressing myself ❑
I have severe problems washing or dressing myself ❑
I am unable to wash or dress myself ❑

USUAL ACTIVITIES *(e.g. work, study, housework, family or leisure activities)*

I have no problems doing my usual activities ❑
I have slight problems doing my usual activities ❑
I have moderate problems doing my usual activities ❑
I have severe problems doing my usual activities ❑
I am unable to do my usual activities ❑

PAIN / DISCOMFORT

I have no pain or discomfort ❑
I have slight pain or discomfort ❑
I have moderate pain or discomfort ❑
I have severe pain or discomfort ❑
I have extreme pain or discomfort ❑

ANXIETY / DEPRESSION

I am not anxious or depressed ❑
I am slightly anxious or depressed ❑
I am moderately anxious or depressed ❑
I am severely anxious or depressed ❑
I am extremely anxious or depressed ❑

- We would like to know how good or bad your health is TODAY.
- This scale is numbered from 0 to 100.
- 100 means the best health you can imagine.
  0 means the worst health you can imagine.
- Mark an X on the scale to indicate how your health is TODAY.
- Now, please write the number you marked on the scale in the box below.

YOUR HEALTH TODAY = ☐