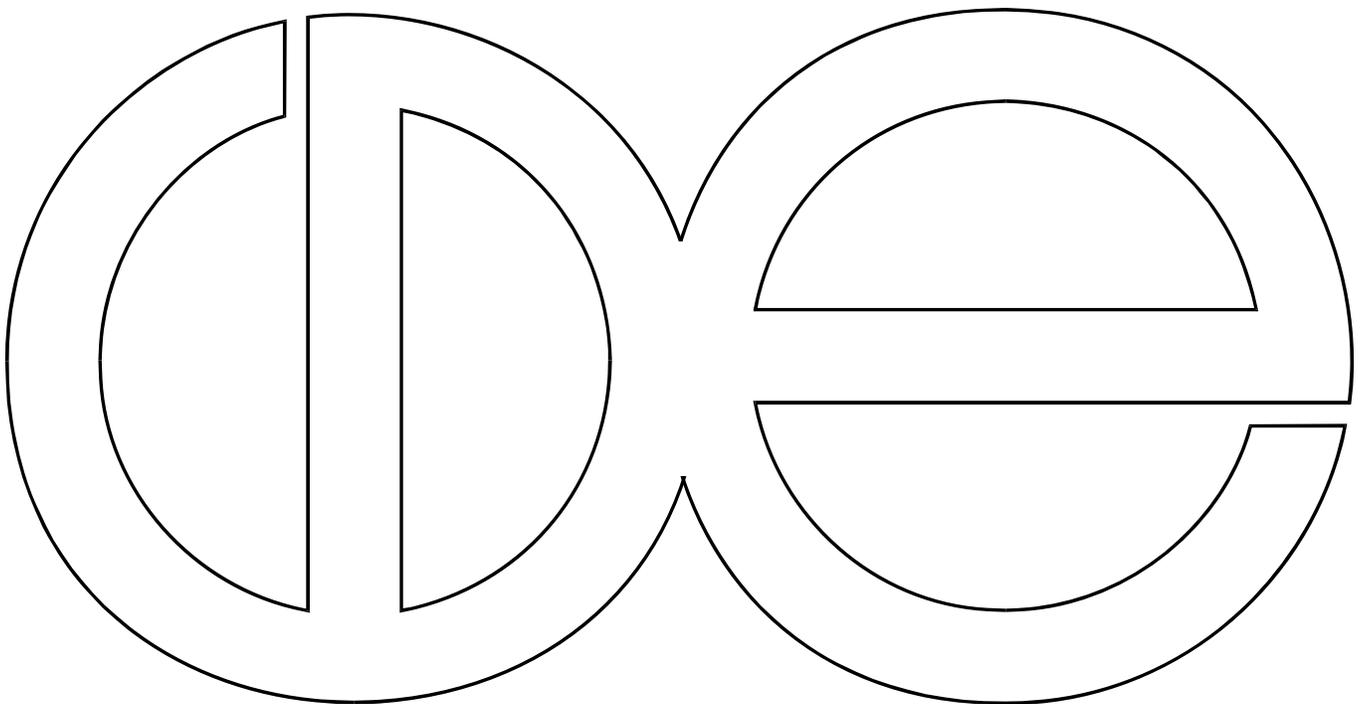


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**A New Look at the Living Arrangements of
Older Americans using Multistate Life Tables**

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A New Look at the Living Arrangements of Older Americans using Multistate Life Tables

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Abstract

OBJECTIVES: We extend existing research on the living arrangements of older Americans by focusing on geographic proximity to children, examining transitions in living arrangements across older ages, and describing differences by both race/ethnicity and educational attainment.

METHOD: We use data from the Health and Retirement Study (HRS) over a period of 14 years (1998-2012) to construct multistate life tables. These analyses allow us to describe the lives of older Americans between ages 65 and 90 in terms of the number of expected years of life in different living arrangements, reflecting both mortality and living arrangement transitions.

RESULTS: Americans spend a substantial proportion of later life living near, but not with, adult children. There is a good deal of change in living arrangements at older ages and living arrangement-specific life expectancy differs markedly by race/ethnicity and educational attainment. However, overall life expectancy is not strongly related to living arrangements at age 65.

DISCUSSION: Multistate lifetables, constructed separately by sex, race/ethnicity, and educational attainment, provide a comprehensive description of sociodemographic differences in living arrangements across older ages in the U.S. We discuss the potential implications of these differences for access to support and the exacerbation or mitigation of inequalities at older ages.

Key Words: Living arrangements, lifetable analysis, race/ethnicity

Introduction

Research on living arrangements at older ages has a long history in demography. This work has paid particular attention to levels and correlates of intergenerational coresidence, reflecting the importance of support provided by coresiding family members for economic, emotional, and physical well-being at older ages. Much of this research has examined living arrangements in countries where reliance on private support at older ages is relatively strong and scholars have interpreted the trend toward less intergenerational coresidence as a reflection of broader patterns of social and economic change. Research on the U.S. and other developed countries has tended to focus on relationships between health and living arrangements (Liang et al. 2005), family structure and living arrangements (Wilmoth 2000), and racial and ethnic differences in coresidence (Kamo and Zhou 1994). Continued efforts to document and understand patterns of living arrangements at older ages are important in the context of globalization, economic change, and population aging as trends in marriage, fertility, and women's employment have altered the family structures and norms surrounding intergenerational expectations and obligations. Indeed, the United Nations has identified living arrangements of older persons and possible government responses as one of the most pressing issues of population aging (United Nations 2001).

While the body of research on living arrangements at older ages is large, it is limited in two fundamental ways. First, the conventional conceptualization of living arrangements has emphasized the distinction between intergenerational coresidence with children and other arrangements, typically ignoring residential proximity to adult children. This is problematic in that proximate residence is a key feature of contemporary family living arrangements that may provide many of the posited benefits of coresidence without some of its posited disadvantages (e.g., lack of privacy) (Zhang, Engelman, and Agree 2013). Studies that do consider proximity to

adult children are limited by a tendency to focus on distance from children (with coresidence being zero distance), an approach that precludes an understanding of close proximity as a discrete living arrangement with distinct correlates (Compton and Pollak 2015).

Second, few studies have examined transitions in living arrangements over an extended period of time or summarized these transitions in the form of living arrangement-specific life expectancies. Past work has typically focused on correlates of living arrangements in the cross-section or has examined change over short periods of time. The only other analysis of life expectancy in different living arrangements of which we are aware (Wilmoth 1998) was based on older data, used a relatively small sample of older individuals, covered a short period of time, did not focus on proximate residence, and did not consider differences across racial groups, or socioeconomic status. We thus know little about how the duration of different types of living arrangements across older ages is related to key sociodemographic characteristics (e.g., race/ethnicity, socioeconomic status) or important dimensions of well-being (e.g., economic need, physical health, emotional health).

We begin to address these limitations by using data from the Health and Retirement Study (HRS) over a period of 14 years (1998-2012) to construct multistate life tables of living arrangements between ages 65 and 90. These analyses allow us to describe the lives of older Americans in terms of the number of expected years of life in different living arrangements – reflecting both mortality and transitions in living arrangements across 25 years of later life (i.e., ages 65 to 90). Conducting analyses separately by sex, race/ethnicity, and educational attainment allows us to provide one of the first descriptive portraits of sociodemographic differences in living arrangement transitions and living arrangement-specific life expectancy at older ages in the U.S.

Background

Living arrangements and the provision of care

Where adult children live in relation to their elderly parents is often viewed as an indicator of the amount of potential support available to older parents (Litwak and Kulis 1987, Rossi and Rossi 1990, Wolf 1994). This is particularly true for support which requires physical interaction, such as care-giving and companionship, and is less true for monetary support. Coresidential, proximate, and distant living can thus be seen as gradations of accessibility from the “face-to-face access” inherent in coresidence to “less intense sustained access” of proximate living (Wolf 1994) and the irregular access of distant residence. Proximate living is sometimes portrayed as an ideal arrangement – adult children and their older parents can interact frequently while both are able to retain a degree of autonomy and privacy. Rosenmayr and Köckeis (1963) famously described this living arrangement as “intimacy at a distance.”

There is a good deal of research on geographic proximity of children and parent-child contact and interaction (e.g., DeWitt and Frankel 1988; Greenwell and Bengtson 1997; Lawton, Silverstein, and Bengtson 1994; Roan and Raley 1996). In contrast, however, empirical evidence of the prevalence of proximate living arrangements and especially of the duration and correlates of intergenerational proximity is quite limited. In part, this reflects the tendency for living arrangements to be constructed from survey household rosters, which typically indicate whether adult children live with parents, but not their distance from parents.

We do know, however, that proximate residence is a common living arrangement. Cross-national data from 10 European countries showed that 42 percent of people aged 50 years and older live less than 25 km away from their nearest living child, ranging from 31 percent in Italy to 63 percent in the Netherlands (Hank 2007). In the U.S., 45 percent of men and women age 65

and over live within 10 miles of an adult child (authors' tabulation of data from the Health and Retirement Survey) and a recent media report presented data showing that the average American adult lives only 18 miles from his or her mother (Bui and Miller 2015). It is clear that proximate living and preferences for living near, but not with, children have increased over time in many developed countries (Glaser and Tomassini 2000) while the prevalence of intergenerational coresidence has declined. Some researchers attribute these changes to the increased affluence of elderly parents (Michael, Fuchs and Scott 1980, McGarry and Schoeni 2000), while others emphasize increased opportunities and less parental control among the younger generation (Ruggles 2007).

Much of the research on older adults' living arrangements focuses on support from adult children, but it is clear that support provision often goes in the other direction, or in both directions. Though some elderly parents need support from their adult children, parents are also important resources to their adult children, providing instrumental support (e.g. childcare and shopping) as well as financial and emotional support (Knipscheer et al. 1995). These reciprocal exchanges of support make living arrangements an important correlate of well-being across the life course, especially in settings characterized by limited public income support and health care for the elderly and limited public child-care (e.g., Quashie and Zimmer 2013). To the extent that intergenerational support exchange is concentrated among less advantaged groups, patterns of living arrangements may mitigate inequality in multiple dimensions of well-being.

In addition to living arrangements defined by the proximity of adult children (i.e., coresident, proximate, and distant), older adults may live in institutional settings (i.e., nursing homes). This is far less common than other arrangements and thus not often a central focus in analyses of population data. Nevertheless, the proportion of older Americans who experience

nursing home admission is not trivial – in 2013, there were 15,700 nursing homes with 1.4 million residents in the U.S. (Harris-Kojetin et al. 2013). Nursing home residents comprise 2.8% of the 65+ population and 10.2% of the 85+ population.¹ These figures highlight the value of better understanding the duration of nursing home residence, the likelihood of returning to the community relative to dying, and how these relationships vary across sociodemographic groups. Our focus on nursing home residence as a distinct living arrangement is thus an important extension of previous research.

Socio-demographic correlates of living arrangements

Studies of the demographic correlates of living arrangements have found a curvilinear relationship between age and distance, with distance from adult children increasing among the ‘young old’ and then decreasing among the ‘old old’ as the need for care grows (Clark and Wolf 1992). Living arrangements are clearly associated with correlates of need for care. For example, Compton and Pollak (2015) showed that coresidence is most likely when mothers are older, in poor health, and unmarried, but found that proximity does not depend on these care-related characteristics of mothers. Other studies have documented a rural-urban differential, with older rural residents more likely to live farther from their children than those living in urban areas (Lee et al. 1990, Lin and Rogerson 1995). Increased availability means that parents with a larger number of children are more likely to live close to a child and higher life expectancy means that older women (especially widows) are more likely than older men to live with or near their children (Lee et al. 1990; Clark and Wolf 1992).

¹ https://www.cms.gov/medicare/provider-enrollment-and-certification/certificationandcompliance/downloads/nursinghomedatacompendium_508.pdf

Other research has focused on the socioeconomic correlates of living arrangements. Socioeconomic status is positively associated with distance between parents and adult children – for example, adult children and parents with higher levels of education are more likely to live far from each other relative to those with lower levels of education (Clark and Wolf 1992, Compton and Pollak 2015). There are several theoretical explanations for these socioeconomic differences in living arrangements. For example, middle-class children are able to pursue specialized education and jobs that are not available near their parents while working-class children more often enter less-specialized jobs closer to home. Similarly, the fact that deterioration of health and economic well-being begins at earlier ages for working-class parents makes them more likely to need the support of proximate children relative to their middle-class counterparts (Greenwell and Bengston 1997).

In terms of race and ethnicity, Hispanics are much more likely to live with (but not near) their mothers than Whites, and Blacks are both more likely to live with and live near their mothers than Whites (Compton and Pollak 2015). The correlates of living arrangements differ greatly by the gender and marital status of children – for example, daughters, both married and unmarried, are more likely to live with older mothers (75+) while married sons are less likely to live near older mothers (Compton and Pollak 2015). The ways in which parents' and children's characteristics are related to living arrangements also varies by social context. For example, in comparing living arrangements of elderly women in the U.K. and Italy, Glaser and Tomassini (2000) found that parents' health conditions were particularly important in the U.K. whereas children's economic conditions were more important in Italy.

Compton and Pollak's (2015) examination of the prevalence and correlates of proximate residence as a distinct living arrangement category provides a valuable theoretical and empirical

basis for our study. We move beyond their analyses in several important ways. While they used data from the National Survey of Family and Households data (NSFH) on mothers and their adult children, we use more recent data from the much larger sample of older Americans in the Health and Retirement Study (HRS). Further, while Compton and Pollak (2015) focus exclusively on the living arrangements of mothers and their adult children, we examine the living arrangements of both older men and women in relation to their adult children. Importantly, we move beyond their cross-sectional analysis (of Wave 2 of the NSFH) by using multiple observations across 14 years of the HRS to characterize life expectancy beyond age 65 in terms of living arrangements, including nursing home residence (an arrangement that they did not consider). This allows us to examine how theoretically important characteristics (e.g., sex, race/ethnicity, educational attainment) are related not only to the relative likelihood of being in a given living arrangement at one point in time, but also the number of years that various groups live, on average, in different arrangements.

Data

We use data from the waves 4-11 of the HRS (1998-2012) provided by RAND. Wave 4 (1998) is the first wave of the HRS to include a representative sample of Americans age 65 and over.²

Living arrangements can be categorized in several ways including household headship, relationship to the head of the household, and whether the elderly live with children or others, cross-classified by marital status. In this paper, we define respondents' living arrangement at the time of each interview using the following categories: (a) coresidence with children (regardless

² Weighted HRS data are nationally representative. We use sampling weights (RWTRESP) in all analyses.

of whether other coresident adults were present), (b) proximate residence (living independently, including both living alone and with spouse only, but within close proximity (10 miles) to at least one living child), (c) distant residence (living independently, including both living alone and with spouse only, and more than 10 miles from any living child), and (d) institutional living (i.e., nursing home). Transitions to death prior to the subsequent wave are treated as an additional, absorbing state.

Figure 1 provides a diagrammatic representation of the transitions summarized in the multi-state life tables. In this figure, the black bi-directional arrows represent transition probabilities both from state x to state y and from state y to state x whereas the gray uni-directional arrows represent transition probabilities from state x to death. For the sake of simplicity, this diagram does not include panel attrition, a censoring event.

Recognizing that the different categories of living arrangements are not mutually exclusive, we apply the hierarchy of categories listed above when defining a person's living arrangement category. For example, an HRS respondent will be coded as coresiding if s/he was living with a child, regardless of whether s/he lived within 10 miles of another living child. We recognize that some respondents may have both co-resident and proximate children or may have multiple proximate children (indeed, 57% of HRS respondents coresiding with a child had another child living within 10 miles).³ However, given the analytical strategy summarized in Figure 1, we prefer this hierarchical classification to a more complex classification scheme that involves additional categories and smaller cell sizes. Sex, race/ethnicity, and educational attainment are

³ All respondents living in a nursing home are included in that category, even if an adult child lives within 10 miles of the nursing home.

measured using conventional categories (although there are not enough Asian-Americans in the HRS to conduct analyses for that group). We limit the analysis to the age range 65-90 in light of small cell sizes and the associated difficulty of estimating transition probabilities beyond age 90. According to the 2004 U.S. life tables, the proportion of life after age 65 that is lived beyond age 90 is .08 for women and only .05 for men.⁴

Construction of multi-state life tables

We use multistate life tables to summarize information on the transitions between different living arrangements between ages 65 and 90 depicted in Figure 1. Multistate life tables allow us to characterize old age in terms of the number of years that a hypothetical cohort of 65-year-olds (or x-year-olds, more generally) would expect to live in different living arrangement states (coresiding with children, living proximate to children, living far from children, in institutional care) over the next 25 years if they were to experience the age-specific living arrangement and mortality transition probabilities observed in the data (see Palloni 2001 for an introduction to these models). They also allow for comparison of time spent in different living arrangements across groups of interest, e.g., men vs. women, racial and ethnic groups, different levels of educational attainment. The results presented below are based on data pooled across waves and cohorts in the HRS. This hybrid period-cohort life table allows us to more precisely estimate transitions across multiple living arrangements (and death) for men and women age 65-90. We construct twelve separate life tables – for three racial/ethnic groups (white, black, Hispanic) separately by sex and for three educational groups (less than high school, high school, and some college or more) separately by sex.

⁴ https://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_09.pdf

To construct these life tables, we first estimate multinomial logistic regression models to generate state-specific transition probabilities based on person-year data constructed from the HRS. Because the HRS is conducted at two-year intervals, we use generate random numbers to assign inter-wave transitions to one of the two years (i.e., we assign the event to age x if the random number is 0 and to age $x+1$ if the random number is 1). To capture the age pattern of mortality beyond age 65, the shape of the mortality hazard is assumed to follow a quadratic distribution. We then use the estimated probabilities to construct state-specific multistate life tables using a SAS macro available at the Centers for Disease Control and Prevention website.⁵ Finally, we combine these state-specific life tables into a single life table for each combination of sex and race/ethnicity or sex and educational attainment by using the observed living arrangement distribution at age 65 as weights.

Results

Sex- and age-specific distributions of living arrangements (from data pooled across waves) summarized in Figures 2 and 3 show that the prevalence of different living arrangements is relatively stable across older ages, with roughly 20% coresiding with children, 50% living near children, and 30% living far from children. The cross-sectional prevalence of nursing home residence is very low.

However, cross-wave living arrangement transitions presented in Table 1 clearly show that a sizeable proportion of HRS respondents 65 years and older change living arrangements. Between 20-30% of those in coresidential, proximate, or distant living arrangements are in a different state (including death) two years later. Transitions out of institutional living are much more common

⁵ http://www.cdc.gov/nchs/data_access/space.htm

and most are either to proximate residence or death. Patterns of transitions are very similar for men and for women, with men somewhat more likely to transition to death. The contrast between aggregate stability in living arrangement distributions across older ages and the large proportion of individuals experiencing change in living arrangements is consistent with Hermalin et al.'s (2005) earlier findings from Taiwan.

Table 2a presents the average number of years that 65-year-old men and women are expected to live in each of the four living arrangement states, by race/ethnicity. The proportion of remaining life in each state is presented in parentheses. These results (and all other results presented below) are based on older adults with at least one living child in consecutive survey waves and should be interpreted with this sample restriction in mind.⁶ The “total” row shows that, for all race/ethnicity groups, women are expected to live 2 to 3 years more than men between ages 65 and 90. White men and women spend slightly less than half of their life between ages 65 and 90 living within 10 miles of an adult child. Roughly one-third of this period of life is spent living distant from adult children and 12-16% is spent coresiding with an adult child. On average, white men and women spend less than one year of life (between ages 65-90) in a nursing home.

This table also shows the well-documented mortality advantage of Whites and Hispanics relative to Blacks. Overall, Black women live roughly one year less and black men live about two years less than their white and Hispanic counterparts. Appendix Figure 1 shows that the HRS data produce overall life expectancies that are very similar to those in the CDC life tables

⁶ A total of 4,728 observations (6.6% of the total sample) are excluded by virtue of having no living children at wave t and/or wave t+1.

based on vital statistics for whites and blacks and slightly understate life expectancy for Hispanics.⁷

We also see that Blacks and Hispanics spend more years than Whites coresiding with adult children. Black and Hispanic women live 43% and 46%, respectively, of their life between ages 65 and 90 living with an adult child compared to only 18% for White women. The facts that duration of coresidence is shorter and “intimacy at a distance” is more common for Whites suggests attention to geographic proximity may be particularly important for understanding racial/ethnic differences in access to support from children at older ages (and the associated implications for variation in health and well-being). Racial/ethnic differences in expected years of life in institutional living are small.

Table 2b presents corresponding figures for men and women of different educational backgrounds. The strong educational gradient in mortality is immediately evident, with men and women who completed high school or attended college living 2.5 to 3.5 years longer, on average, between ages 65-90 than those who did not complete high school. The most striking differences in living arrangements are the relatively long duration of coresidence among the least educated (especially women) and the strong positive educational gradient in distant residence. Women who did not complete high school spend 35% of their life between ages 65 and 90 living with an adult child compared to 17% for college-educated women. Educational attainment is not strongly associated with time spent in proximate residential arrangements or in institutional living.

⁷ https://www.cdc.gov/nchs/products/life_tables.htm

Life expectancy by living arrangements at age 65

Because the life expectancies in Tables 2a and 2b reflect trajectories of experience averaged across initial living arrangement states at age 65, it is also informative to examine living-arrangement-specific life expectancy conditional on initial living arrangements. These estimates are presented in Tables 3a and 3b. One unsurprising pattern in all of these tables is that, for all groups, life expectancy is longest in the initial living arrangement state at age 65. However, in many cases, time spent in the origin state is only approximately half of remaining life expectancy, highlighting the fluid nature of living arrangements at older ages demonstrated in Table 1.

Looking first at racial and ethnic differences in Table 3a, we see that, apart from the lower life expectancy of those in institutional living arrangements at age 65, differences in overall life expectancy by initial living arrangements are not larger than one year. This is true for both men and women and reflects a combination of relatively fluid living arrangements between ages 65 and 90 and the fact that age-specific, cross-state transition probabilities do not differ by living arrangements at age 65 (by definition). Interestingly, we also see that coresidential living arrangements appear to be more stable for Blacks and Hispanics whereas proximate and distant residence are more stable for whites. The former reflects relatively high rates of transition out of coresidence for whites and the latter reflects relatively high rates of transition into coresidence for Blacks and Hispanics. Among those who were living more than 10 miles from their nearest adult child at age 65 (i.e., coresiding or proximate), there is little difference across racial/ethnic groups in the proportion of life that older men and women spend living near an adult child. However, the proportion of life spent coresiding with an adult child is longer for blacks and Hispanics relative to whites. Not surprisingly, those who were in nursing homes at age 65 spend

most of their remaining (much shorter) lives in nursing homes. However, as shown earlier in Table 1, the proportion of respondents experiencing a transition out of nursing homes to any state other than death is roughly 30%, and those in nursing homes at age 65 do spend two or more years of life in other living arrangement states. One striking pattern that deserves more attention is the relatively high life expectancy of Hispanic women who were living in nursing homes at age 65.

Turning to differences by educational attainment in Table 3b, we see that the stability of initial living arrangements for men and women with less than a high school education resembles blacks and Hispanics in Table 3a. Those who were coresiding with adult children at age 65 spend a greater proportion of their remaining years in that same state relative to their counterparts with a high school education or more. Conversely, distant residence is more stable for those with high school or college educations. For example, the proportion of remaining life spent in this initial state is .68 for men with a high school education and .74 for those with a college education, but only .60 for those with less than a high school education. The pattern for women is similar. The proportion of life that men and women living near an adult child at age 65 spend in this initial state does not differ by educational attainment. Given the scarcity of empirical evidence on proximate residence, these similarities are notable. Among those who were living in a nursing home at age 65, the proportion of their (much shorter) remaining life spent in this initial state is between .60 -.70 for all groups except men with at least a high school education. These men spend 2.5 - 3.5 years living with or near an adult child and a bit less than 2 years far from an adult child. Institutional living appears to be more transitory for these groups of men, with coresidence being a more common destination for high school graduates relative to college graduates.

Discussion

Our goal in this paper was to describe the living arrangements in which Americans spend their later years and how they differ by gender across two key dimensions of social stratification – race/ethnicity and educational attainment. To the extent that proximity to adult children reflects potential access to financial, instrumental, and emotional support at older ages, living arrangements may be an increasingly important correlate of multiple dimensions of inequality in rapidly aging populations. Not only are the absolute and relative numbers of older Americans projected to increase, but rising inequality and shifting policy emphasis toward greater individual responsibility for economic security at older ages (e.g., Hacker 2008) also highlight the potential for growing variation in the resources available to individuals in later life. For these reasons, there is significant value in building a more comprehensive understanding of living arrangements at older ages that explicitly recognizes proximity to adult children as a distinct arrangement, that moves beyond cross-sectional analysis of the correlates of different arrangements, and that effectively summarizes sub-population differences in living arrangement transitions across older ages.

Our application of multi-state life table analyses to 14 years of HRS data represents an important step toward this more comprehensive understanding. In addition to replicating the well-established racial/ethnic and educational differences in overall life expectancy, we have demonstrated pronounced differences across these groups in terms of living arrangement-specific life expectancies. Most notably, we have shown that Blacks and Hispanics and those who did not complete high school spend a larger proportion of their remaining life coresiding with an adult child(ren). These findings provide an empirical basis for subsequent examination of reasons for these differences (e.g., economic need, poor health, absence of a spouse) and the implications of

these differences for multiple dimensions of inequality (e.g., financial circumstances, physical health, mental health). We have also shown that geographic proximity to adult children is a very common arrangement among older Americans, underscoring previous researchers' call for a better understanding of the correlates of proximate residence. Finally, and perhaps most importantly, we have shown that there is a good deal of change in living arrangements at older ages. In most of the groups we examined, roughly half of the years lived between ages 65 and 90 is spent in a different living arrangement than the initial state at age 65. An important focus for subsequent research will be examination of the correlates of later-life living arrangement transitions and the implications of those transitions for well-being.

The analyses presented above are limited in several ways that should be addressed in subsequent extensions. The first is that we have not incorporated information on marital status. Because marital status is a strong predictor of living arrangements and spouses are primary sources of physical and emotional support, our omission of this characteristic limits our ability to evaluate the potential implications of our findings for variation in access to private support. Cross-classifying living arrangements by marital status would result in problems of small cell size, but extensions of our analyses might effectively incorporate marital status as a covariate in the transition models upon which the multi-state life tables are built. A second limitation is that we have ignored the living arrangements of childless older men and women. This is an important shortcoming in view of the implications of childlessness for old age support and the fact that 15% of Americans currently aged 65 and over are childless and 30% of those aged 70 to 85 are projected to be childless in 2030 (OECD 2011). Producing separate life tables for childless men and women in the HRS is another important task for subsequent research. A third limitation is that we have focused only on adult children and paid no attention to coresidence with, or

proximity to, other adults who may be important sources of support at older ages (e.g., siblings, friends). While we recognize the potential importance of kin other than spouse and children or of “fictive kin,” the HRS does not include sufficient information to incorporate such individuals into our analyses.

We have also not examined correlates of living arrangement transitions (other than age, sex, race/ethnicity, and educational attainment) and have not considered the association between different living arrangement (trajectories) and indicators of well-being. These are important questions, but are beyond the scope of our objectives for this paper. The use of multi-state life table techniques to summarize large amounts of information on age-specific transitions (between living arrangement states and to death) provides intuitive and informative descriptive summaries of how different groups of Americans spend their later years. While widely used in research on healthy life expectancy and on employment at older ages, application of multi-state models to living arrangements has been limited. Our documentation of living arrangement-specific life expectancy, its variation across two key dimensions of social stratification, and the substantial movement across living arrangement states provides an empirical basis for subsequent examination of explanations for these differences and evaluation of their implications for well-being.

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Table 1: Living arrangement transitions, by initial state

Women	Coresident	Proximate	Distant	Institutional	Dead	Total
Coresident	76.0	8.2	3.7	2.4	9.7	100.0
Proximate	4.4	81.5	4.9	2.6	6.6	100.0
Distant	3.3	8.0	79.9	2.6	6.2	100.0
Institutional	0.0	18.5	9.8	56.2	15.5	100.0
Total	19.5	43.4	27.4	2.6	7.2	100.0

Men	Coresident	Proximate	Distant	Institutional	Dead	Total
Coresident	72.4	9.7	5.6	1.3	11.0	100.0
Proximate	3.4	80.1	5.5	1.3	9.7	100.0
Distant	2.5	7.0	79.9	1.4	9.2	100.0
Institutional	0.0	27.4	0.0	56.1	16.5	100.0
Total	16.0	41.3	31.6	1.4	9.8	100.0

Note: rows represent initial state (at HRS wave t) and columns represent follow-up state (at HRS wave t+2)

Table 2a: Living arrangement-specific life expectancy between ages 65 and 90, by sex and race/ethnicity

	Coresident	Proximate	Distant	Institutional	Total
Women					
White	3.14 (0.18)	8.31 (0.47)	5.70 (0.32)	0.66 (0.04)	17.81
Black	7.22 (0.43)	5.90 (0.35)	2.93 (0.18)	0.60 (0.04)	16.65
Hispanic	8.43 (0.46)	5.66 (0.31)	3.59 (0.20)	0.59 (0.03)	18.27
Men					
White	2.41 (0.15)	7.17 (0.45)	6.06 (0.38)	0.31 (0.02)	15.96
Black	4.27 (0.31)	5.51 (0.40)	3.51 (0.26)	0.32 (0.02)	13.61
Hispanic	6.38 (0.41)	5.09 (0.33)	3.71 (0.24)	0.27 (0.02)	15.44

Table 2b: Living arrangement-specific life expectancy between ages 65 and 90, by sex and educational attainment

	Coresident	Proximate	Distant	Institutional	Total
Women					
Less than HS	5.49 (0.35)	6.55 (0.42)	2.98 (0.19)	0.65 (0.04)	15.66
High school	3.63 (0.20)	8.57 (0.48)	5.03 (0.28)	0.71 (0.04)	17.94
College	3.24 (0.17)	8.21 (0.43)	7.02 (0.37)	0.61 (0.03)	19.07
Men					
Less than HS	3.83 (0.27)	6.88 (0.49)	3.09 (0.22)	0.31 (0.02)	14.11
High school	2.78 (0.18)	7.59 (0.48)	5.06 (0.32)	0.32 (0.02)	15.74
College	2.46 (0.15)	6.55 (0.39)	7.49 (0.45)	0.29 (0.02)	16.79

Note: proportion of remaining life is presented in parentheses

Table 3a: Living arrangement-specific life expectancy between ages 65 and 90, by living arrangements at age 65, sex, and race/ethnicity

	Coresident	Proximate	Distant	Institutional	Total
Women					
Whites					
Coresident	8.62 (0.51)	4.86 (0.29)	2.74 (0.16)	0.64 (0.04)	16.87
Proximate	1.79 (0.10)	12.75 (0.71)	2.67 (0.15)	0.67 (0.04)	17.88
Distant	1.55 (0.08)	4.17 (0.23)	11.94 (0.65)	0.66 (0.04)	18.32
Institutional	0.46 (0.06)	1.57 (0.20)	0.63 (0.08)	5.01 (0.65)	7.67
Blacks					
Coresident	11.10 (0.68)	3.30 (0.20)	1.43 (0.09)	0.59 (0.04)	16.42
Proximate	3.79 (0.22)	10.38 (0.61)	2.08 (0.12)	0.64 (0.04)	16.89
Distant	3.35 (0.20)	4.04 (0.24)	8.85 (0.53)	0.55 (0.03)	16.80
Institutional	1.19 (0.16)	0.60 (0.08)	0.41 (0.05)	5.32 (0.71)	7.52
Hispanics					
Coresident	12.33 (0.68)	3.41 (0.19)	1.76 (0.10)	0.59 (0.03)	18.09
Proximate	4.77 (0.25)	10.21 (0.54)	3.16 (0.17)	0.60 (0.03)	18.75
Distant	3.83 (0.21)	4.49 (0.25)	9.12 (0.51)	0.56 (0.03)	18.00
Institutional	2.16 (0.19)	2.65 (0.23)	0.79 (0.07)	5.88 (0.51)	11.48
Men					
Whites					
Coresident	7.76 (0.50)	4.33 (0.28)	3.03 (0.20)	0.31 (0.02)	15.44
Proximate	1.17 (0.07)	11.80 (0.74)	2.73 (0.17)	0.29 (0.02)	15.99
Distant	0.99 (0.06)	3.28 (0.20)	11.61 (0.72)	0.33 (0.02)	16.21
Institutional	0.59 (0.07)	1.65 (0.20)	1.13 (0.14)	4.73 (0.58)	8.10
Blacks					
Coresident	8.54 (0.64)	2.83 (0.21)	1.72 (0.13)	0.32 (0.02)	13.41
Proximate	2.21 (0.16)	8.89 (0.65)	2.27 (0.17)	0.33 (0.02)	13.70
Distant	1.93 (0.14)	2.90 (0.21)	8.56 (0.63)	0.30 (0.02)	13.70
Institutional	1.34 (0.18)	1.12 (0.15)	1.27 (0.17)	3.78 (0.50)	7.51
Hispanics					
Coresident	10.04 (0.65)	3.30 (0.21)	1.77 (0.11)	0.28 (0.02)	15.38
Proximate	3.02 (0.19)	9.56 (0.61)	2.97 (0.19)	0.26 (0.02)	15.81
Distant	2.34 (0.15)	3.74 (0.25)	8.79 (0.58)	0.26 (0.02)	15.13
Institutional	2.16 (0.31)	0.73 (0.10)	0.37 (0.05)	3.78 (0.54)	7.05

Notes: Rows represent living arrangement state age 65. The Proportion of remaining life is presented in parentheses.

Table 3b: Living arrangement-specific life expectancy between ages 65 and 90, by living arrangements at age 65, sex, and educational attainment

	Coresident	Proximate	Distant	Institutional	Total
Women					
Less than HS					
Coresident	9.66 (0.63)	3.60 (0.24)	1.36 (0.09)	0.64 (0.04)	15.26
Proximate	2.79 (0.18)	10.35 (0.66)	1.90 (0.12)	0.64 (0.04)	15.68
Distant	2.87 (0.17)	4.36 (0.27)	8.52 (0.52)	0.67 (0.04)	16.41
Institutional	1.01 (0.13)	1.38 (0.18)	0.55 (0.07)	4.62 (0.61)	7.56
High school					
Coresident	9.36 (0.54)	4.86 (0.28)	2.40 (0.14)	0.66 (0.04)	17.29
Proximate	1.84 (0.10)	12.92 (0.71)	2.62 (0.14)	0.75 (0.04)	18.13
Distant	1.61 (0.09)	4.45 (0.24)	11.45 (0.63)	0.69 (0.04)	18.20
Institutional	0.44 (0.05)	1.30 (0.15)	0.65 (0.08)	6.10 (0.72)	8.49
College					
Coresident	9.15 (0.50)	5.05 (0.27)	3.60 (0.20)	0.61 (0.03)	18.40
Proximate	1.95 (0.10)	13.50 (0.70)	3.26 (0.17)	0.62 (0.03)	19.33
Distant	1.53 (0.08)	3.97 (0.21)	13.06 (0.68)	0.59 (0.03)	19.14
Institutional	0.68 (0.09)	1.64 (0.22)	0.48 (0.06)	4.57 (0.62)	7.37
Men					
Less than HS					
Coresident	8.22 (0.59)	3.85 (0.28)	1.55 (0.11)	0.30 (0.02)	13.92
Proximate	1.76 (0.12)	10.49 (0.73)	1.88 (0.13)	0.31 (0.02)	14.44
Distant	1.62 (0.12)	3.54 (0.26)	8.18 (0.60)	0.34 (0.03)	13.69
Institutional	1.46 (0.21)	1.02 (0.15)	0.38 (0.06)	3.97 (0.58)	6.83
High school					
Coresident	7.81 (0.50)	4.68 (0.30)	2.68 (0.17)	0.32 (0.02)	15.49
Proximate	1.31 (0.08)	11.78 (0.75)	2.44 (0.15)	0.28 (0.02)	15.81
Distant	1.10 (0.07)	3.66 (0.23)	10.71 (0.68)	0.36 (0.02)	15.82
Institutional	1.50 (0.15)	2.02 (0.20)	1.62 (0.16)	5.00 (0.49)	10.13
College					
Coresident	8.34 (0.52)	3.69 (0.23)	3.73 (0.23)	0.32 (0.02)	16.08
Proximate	1.14 (0.07)	11.88 (0.71)	3.53 (0.21)	0.28 (0.02)	16.83
Distant	0.98 (0.06)	3.18 (0.19)	12.63 (0.74)	0.29 (0.02)	17.07
Institutional	0.51 (0.06)	2.07 (0.25)	1.82 (0.22)	3.99 (0.48)	8.39

Notes: Rows represent living arrangement state age 65. The Proportion of remaining life is presented in parentheses.

Figure 1: Diagrammatic representation of the transitions represented in the multi-state life tables

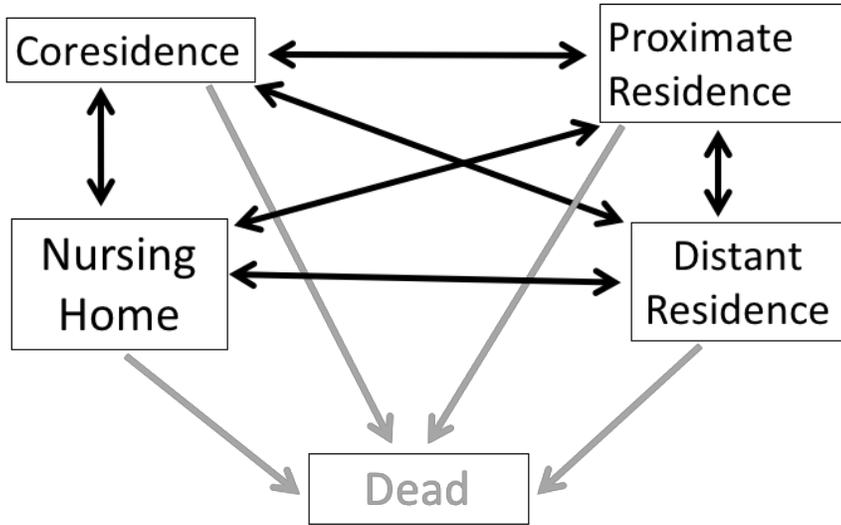
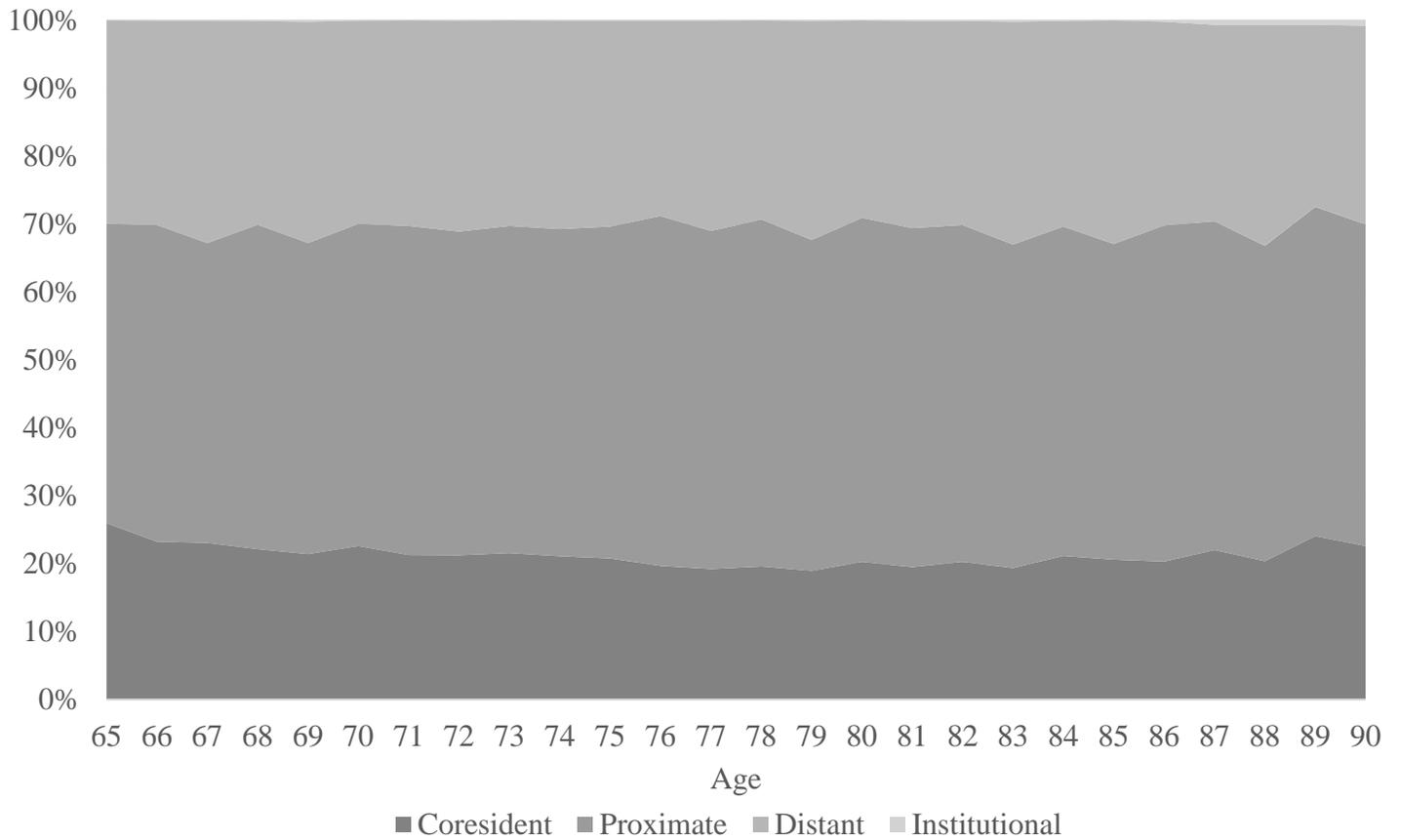
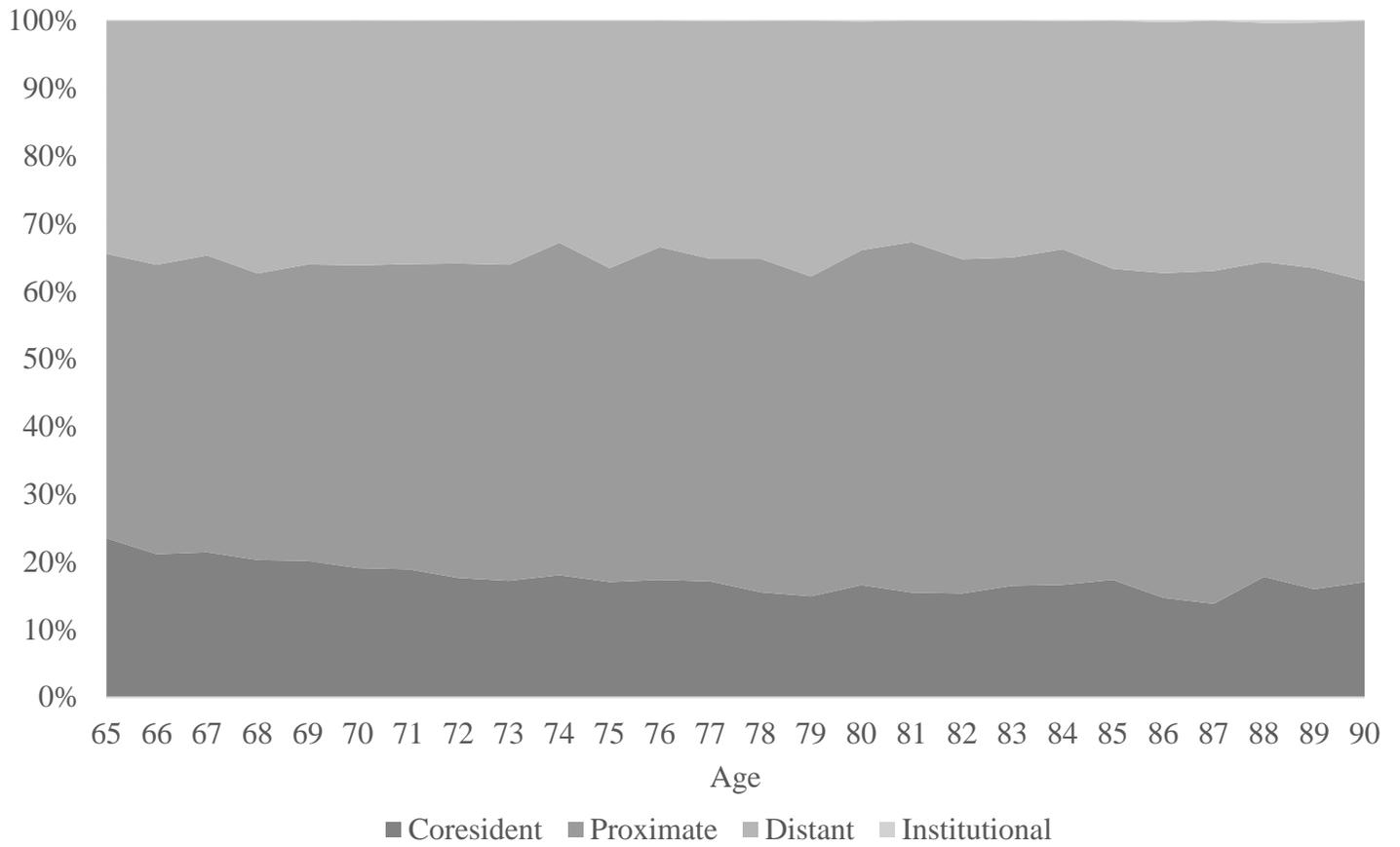


Figure 2: Distribution of women's living arrangements, by age



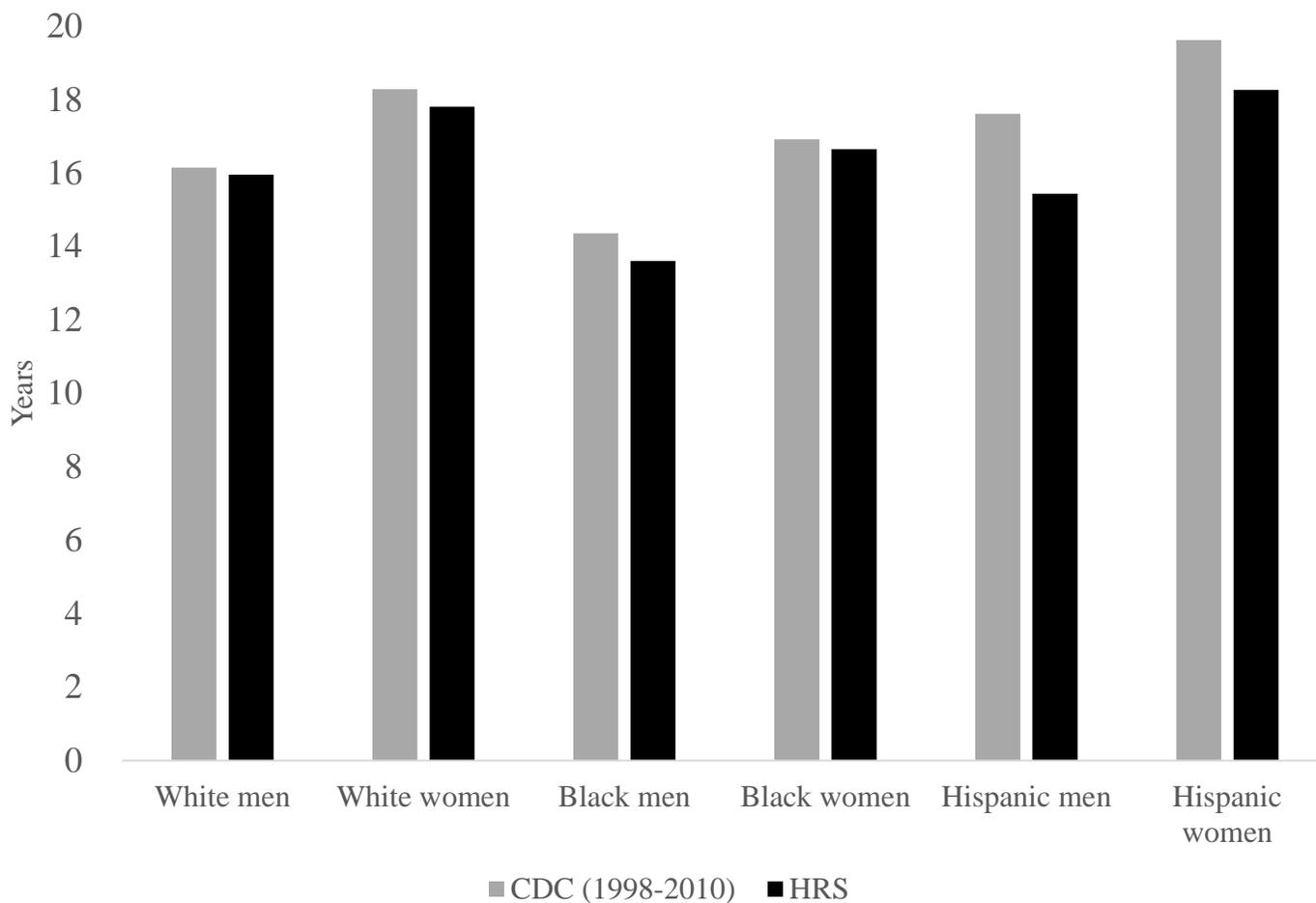
Note: Authors' tabulation of HRS data for female respondents with at least one living child, n=43,696

Figure 3: Distribution of men's living arrangements, by age



Note: Authors' tabulation of HRS data for male respondents with at least one living child, n=32,988

Appendix Figure 1: Comparison of life expectancy between ages 65 and 90 from life tables based on Vital Statistics (CDC) and multistate life tables constructed from HRS data



Note: The CDC figures are averages across annual life tables for the period 1998-2010.

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