The Health Benefits of Marrying and Cohabiting in Later Life

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* This paper is released to inform interested parties of ongoing research and to encourage discussion of marriage and cohabitation. The views expressed on statistical and methodological issues are those of the authors and not necessarily those of the US Census Bureau.

Abstract

Do the health benefits of marriage extend to cohabitation in later life? Using longitudinal panel data from the 1998–2008 Health and Retirement Study, we look at changes in the health of single older adults across time and test whether marrying or cohabiting are associated with improved health, relative to staying single. We build on prior work by moving beyond mortality to consider eight indicators of physical health, and by using multinomial treatment models to model the selection of older adults into cohabitation or marriage. Once we account for selection into these relationships, we find that cohabiting is as protective of health as marrying among older adults. The implication is that relationship status is more important for health in later life than relationship type. In other words, having an intimate coresidential partner matters more for health among older adults than do the legal and institutional bonds of marriage.

Introduction

Numerous studies show that marriage benefits mental and physical health across the life course and that married people are healthier than those who are not married (Goldman et al. 1995; Hays 2002; Manzoli et al. 2007; Williams 2003; Williams & Umberson 2004). These

benefits extend into later life as well. Older adults who are married have fewer depressive symptoms (Brown 2000), benefit from exchanges of caregiving and support (Franks et al. 2004; Hays 2002), and have lower risks of institutionalization or mortality (Hays 2002; Moustgaard and Martikainen 2009; Scafato et al 2008), all of which contribute to better health among older married adults (Manzoli et al. 2007; Wu et al. 2003). To what extent do these "marital" benefits extend to another intimate relationship — cohabitation — in later life?

This research question is of great importance given the rise in cohabitation among older adults. Cohabitation among adults 55 and over has quadrupled since 1999. Today there are 2.2 million cohabiting couples that include at least one partner over the age of 55, up from 472,000 couples in 1999. Older adults also make up an increasing share of cohabiters, with over one quarter of all cohabiting couples including at least one partner over 55 (US Census Bureau 2013). Yet recent research evaluating the health and well-being consequences of cohabitation for older adults — who are more likely than younger peers to use cohabitation as a long-term alternative to marriage (see Brown, Bulanda, & Lee 2012, King & Scott 2005) — yields mixed findings about the benefits and drawbacks of this relationship relative to marriage or remaining single.

We are not the first study to ask this question. Prior research has looked at health differences by relationship type among older adults, focusing on cohabitation or marital status. (Brown et al., 2005, 2006; Goldman et al 1995; Manzoli et al. 2007; Moustgaard and Martikainen 2009). We move beyond these studies by focusing on how *newly formed* residential relationships — either cohabitation or marriage — shapes the health of older adults. Our premise is that, relative to remaining single, entering a newly formed cohabiting or marital relationship is more important for later-life health than the *type* of relationship (i.e., marital versus cohabiting).

We test the hypothesis that the health benefits of marriage in later life may actually be benefits associated with having a close, romantic relationship and thus extend to both cohabitation and marriage alike.

We use longitudinal panel data from the 1998–2008 Health and Retirement Study (HRS) and a sample of healthy, single adults who are at least 50 years old to compare change in health over time among people who transition into marriage or cohabitation, or who remain single over time. We examine a range of physical health outcomes, moving beyond the self-rated health and mortality measures used in prior research (Koskinen et al. 2007; Liu and Reczek 2012; Lund et al. 2002; Moustgaard and Martikainen 2009). Methodologically, we build on existing research by specifically testing whether the unequal selection of older adults into cohabitation or marriage drives the observed health benefits of forming an intimate relationship in later life. Understanding the health benefits of cohabitation and marriage is important as Baby Boomers swell the ranks of the older population and cohabitation becomes more common in later life (Chevan 1996; Conney and Dunne 2001).

Past research on health and relationships in later life

Past research documents considerable differences between cohabiters and marrieds, even in older adulthood. Older cohabitors suffer from poorer mental health, are less likely to experience direct caregiving from a partner, and are more likely to experience disability, bereavement or institutionalization than older marrieds (Brown, Bulanda & Lee 2005; Frank 2004; Hays 2002; Hughes and Waite 2002; Koskinen et al. 2007; Mousgaard and Martikainen 2009; Noel Miller 2011). For the most part, older cohabitors' elevated risk of mortality is the result of alcohol consumption, consistent with findings that they engage in riskier behaviors by drinking and smoking more at older ages (Brown et al. 2006; Brown et al. 2012). Caregiving is

also less likely to mitigate these behaviors, considering that older cohabitors are less likely to receive direct care than older married people (Horwtiz 2002; Horwitz and White 1998; Noel-Miller 2011).

And yet cohabitation may be protective of health in later life, especially relative to remaining single and living alone. Compared with those who live alone, older cohabitors have better mental health (Brown 2000), self-rated health (Wu, Penning, Pollard and Hart 2003) and lower risks of institutionalization or mortality (Breeze, Sloggett and Fletcher 1999; Freedman 1996; Koskinen et al 2007; Moustgaard and Martikainen 2009) because cohabiters benefit from the companionship that a partner provides (Nihtila and Martikainen 2008). Indeed, the feelings of isolation and loneliness that are related to living alone result in worse health and a greater risk of mortality for older adults who have no intimate partner (Cornwell & Waite 2009; Koskinen, Joutsenniemi, Martelin, & Martikainen 2007; Lund, Nilsson, & Avlund 2010). As in marriage, improved health in cohabiting relationships extends to some behaviors and even newly formed cohabitations have health benefits. For instance, cohabitors engage in less risky behavior (though heavy drinking is an exception) and are more likely to see a physician than the unpartnered (Blumberg et al. 2014; Kenney and McLanahan 2006). And for older cohabiters who do receive caregiving from a live-in partner, the level of support and the amount of caregiving that they receive is no different from that of spouses (Noel-Miller 2011).

There is good reason to expect that cohabiting among older adults offers similar benefits as marrying and that the distinctions between cohabitation and marriage, which are predominant during young adulthood (King & Scott 2005; Brown 2000), are diminished among older adults. For example, Scafato et al. (2008) and Lund et al. (2002) looked at mortality using longitudinal studies of older Italians and Dutch, respectively. The researchers found that being in a

relationship was more important for health than marital status: being unmarried increased mortality by 25% for older men, but living alone increased it by 42% (Scafato et al. 2008). Other research has found that mortality differences between married and cohabiting adults diminished with age, so that marital status became a less important predictor of health in later life (Koskinen et al. 2007; Liu and Rezcek 2012). The implication is that having a residential partner is what matters most for health in later life, and not necessarily having a spouse.

Variation by Gender

The relationship between health and later-life unions is not clear-cut when it comes to comparing older men and women's health. Some studies found that the protective effects of coresiding extended only to older men (Scafato et al. 2008), while others found that they extended only to older women (Koskinen et al. 2007). In general, however, men's health benefits more from marriage than women's (Gardner and Oswald 2004; Goldman et al. 1995; Williams and Umberson 2004) because men benefit more from gendered caregiving roles established in marriage (Adams and Jones 1997; Duncan et al. 2006; [Noel-Miller]). Men report greater improvements in health after they marry, including for self-rated health, mental health and the likelihood of seeing a physician (Blumberg et al. 2014; Brown et al. 2005; Williams & Umberson 2004). Men also report smaller social networks than women and greater health risks associated with living alone, especially as they age (Lund, Nilsson, & Avlund 2010), making a close contact like a spouse especially important for monitoring health, potentially widening the health gap between single and married men. Other studies have found that unpartnered women have health that is as good as, or in some cases better than, married women (Goldman et al. 1995; Murphy et al. 1997; Grundy and Sloggett 2003; Gardner and Oswald 2004; Murphy et al. 2007), while a meta-analysis of 53 studies on mortality differences by relationship status found

no gender differences among older adults (Manzoli et al. 2007). We test for gender differences in the health consequences of newly formed cohabitations versus marriages, and compare both statuses to being single. Do men and women benefit similarly from any personal relationship, or are the health benefits of marriage and cohabitation different for men and women?

Union formation and health: selection or causation?

At a basic level poor health and low socioeconomic status limit opportunities for people to form new relationships because these traits are unattractive in a potential partner, particularly in older men (Bulcroft and Bulcroft 1991; Karlsson and Borell 2005). The consequence is that selection into a new relationship is a major concern in this study because married, cohabiting, and single older adults differ compositionally on numerous measures that are directly linked with health. These include socioeconomic resources, age, gender, prior health and health behaviors, and social networks (Brown et al. 2012, 2006, 2005; Noel-Miller 2011; Vespa 2013).

There is little question that single older adults are less healthy than partnered peers, not only because of differences in age and socioeconomic resources, but because of differences in emotional and instrumental support (Brown, Bulanda, & Lee 2012, 2006). However, less healthy but wealthier older men may actively seek marriage with a poorer but healthier older woman, one who can provide direct care in later life (Vespa 2013). The role of economic resources is further complicated when considering that education is associated with remaining single among older women, but unemployment is associated with partnering (Brown et al. 2006).

In their research on mortality differences between older cohabiting and married people, Moustgaard and Martikainen (2009) found that about 30% of the excess risk of mortality among older cohabitors was due to their lower socioeconomic status (see also Liu and Reczek 2012). The gap in mortality risk between older cohabitors and married people also dissolved with age

(Liu and Reczek 2012), a finding the researchers attributed to selection: less healthy cohabitors were selected out of cohabitation over time, leaving a population of older cohabitors whose health was similar to that of older married people. Goldman et al. (1995) reached the same conclusion for why unpartnered older women had health that was as good as older married women.

Theoretically, there is good reason to expect that forming a relationship improves health and that doing so matters more than the type of relationship during older adulthood. One of the reasons marriage is thought to improve health more than cohabitation is because married people are more committed to one another, invest more in the relationship, and benefit from established roles and norms about caregiving (Brown et al. 2006; Eggebeen 2005; Karlsson and Borell 2005). This distinction may hold true for young adults, but cohabitation *in later life* is a horse of a different color. Older cohabitors show consistently high levels of relationship satisfaction and stable unions over time (Brown et al. 2012 and Brown & Kawamura 2010; Vespa 2012, 2013), supporting the notion that cohabitation is a long-term relationship alternative for older adults (Brown, Bulanda, & Lee 2012, King & Scott 2005) unlike during young adulthood when it is fragile and characterized by low commitment (Lichter, Qian, & Mellot 2006). Older cohabitors report relationship quality that is similar to married couples on a number of measures, such as relationship satisfaction, pleasure, openness, and criticism or demands that partners make (Brown & Kawamura 2010). To the degree that the health benefits of relationships are related to emotional support (Cohen and Willis 1985; Umberson 1992; Lund et al. 2002), we would expect cohabitors and marrieds to report similar improvements in health.

Thus on the one hand differences between cohabitation and marriage in later life, at least in terms of satisfaction and quality, may not be that large after all. But more intriguing is the idea

that the differences between the relationships, in terms of established roles and legal bonds, are actually *appealing* to older adults, and thus are not detractions from cohabitation's score card of benefits relative to marriage's. Some research has suggested that older adults, especially women, may prefer and seek cohabiting relationships over marriage to avoid conflict with adult children, or jeopardizing entitlement income or inheritances (Dickson et al. 2005; Karlsson and Borell 2005; Vespa 2013). In other words, cohabitation's lack of institutionalization is not a drawback; instead, it fulfills older adults' expectations and preferences for an intimate relationship *because of*, and not *in spite of*, its role- and norm ambiguity. Following this logic, cohabiting may provide health benefits to single older adults that are similar to marrying.

Nonetheless because the process of selection into new relationships intersects with gender, economic resources, age and health, it complicates our ability to look at older adults' relationship formation and the subsequent consequences for their health. For this reason, we look at changes in health over time within individuals as they form new relationships in later life. The first step in understanding the link between relationship formation and health is therefore to look at the selection of single older adults into different unions and, net of this selection, how forming new unions are associated with changes in health.

Method

Data for this study come from six waves of the 1998–2008 Health and Retirement Study, a biennial panel survey of Americans who are at least 50 years old. Information is collected at regular intervals on relationships, health indicators and demographics. We began with a sample of people who were interviewed at least twice between 1998 and 2008, and who were single at the baseline interview (n = 9,287) and thus eligible to begin a new relationship. We then excluded people who reported difficulty with at least one activity of daily living (ADL) at the

baseline (n = 1,985). We did this to start with a sample of healthy, older adults (N = 7,302) and to minimize selection out of cohabitation due to initial poor health. The final sample had 6,576 older adults who remained single the entire period of observation, 427 who transitioned into marriage, and 299 who transitioned into cohabitation (Table 1). The majority of the sample is white (82%), widowed (51%) and female (68%) (Table 1).

[Table 1]

Analytic strategy. Our goal is to assess how beginning a new relationship in later life is linked with changes in health. To this end we constructed dichotomous indicators for each of our health outcomes using the baseline interview as the first time point (when everyone is single and disability free). The second time point is the wave when adults began a new relationship (or the last period of observation for adults who remained single). The dichotomous indicator is coded such that 0 indicates that older adults' health remained stably good (including those whose health improved), and 1 indicates that their health declined across waves or the condition remained stably bad. Logistic regressions model whether a relationship transition was associated with a change in the odds of older adults' health declining between time points, relative to remaining in stable good health.

Selection. Who is most or least likely to start a new relationship in later life between waves? We know from prior research that initial health, gender, wealth and other socioeconomic indicators such as education play complicated roles in structuring individuals' likelihood to form new unions, and whether this union is cohabitation versus marriage. We use multinomial treatment models (Deb & Trivedi 2006) to model the selection of singles into cohabitation or marriage based on baseline characteristics that have previously established associations with union formation. Our two-stage selection models predict entry into cohabitation or marriage

relative to remaining single in the first stage, and in the second stage regress change in health on union status (cohabitation or marriage), adjusting for selection into unions. These models are similar to a Heckman correction, but vary in that they allow for the 'treatment' to be categorical (single, cohabiting, married) or dichotomous (single vs. cohabiting, single vs. married).

Health indicators. We looked at eight health indicators as our dependent variables, all of which were measured dichotomously (1 = the condition develops between observations or is present at both observations; 0 = the condition does not develop or improves). The eight health indicators are: arthritis; incontinence; two measures of cardiovascular health, high blood pressure and heart disease; cancer; lung disease; diabetes; and stroke. We included three other health variables as controls for general well-being, each measured at the baseline: whether respondents were smokers, whether they drank alcohol more than one day per week, and their body mass index (BMI).

Relationship transition. Using event history data on when relationships began, we measured three kinds of relationship transitions: (1) remaining single for the entire period of observation; (2) marrying; and (3) cohabiting, a self-reported measure defined as "living with a partner as if married." These categories are mutually exclusive and exhaustive and we use two observations for each individual: the baseline interview when all respondents are single, and either the earliest observation upon entering a union, or the most recent observation among those remaining single.

Demographics. Control variables are adjusted for at the baseline and include gender, marital status (e.g., never married, widowed, divorced), age (measured in years), college education, race (white or black, plus all other groups), retired, net worth (which is the sum of financial and nonfinancial wealth such as pensions and real estate, divided into quartiles and

coded as a dummy variable), religiousness (in which religion is very important to daily life) and close social networks (having both close friends and family members living nearby).

Results

About 89 out of every 100 single, healthy older adults remained single while they were in the sample (Figure 1). Just 6 in 100 married and 5 in 100 cohabited, which aligns with research showing that it is rare to start a new relationship in later life (Connidis 2006; Vespa 2012, 2013), but that cohabitations and marriages form at roughly equal rates (Brown, Bulanda, & Lee 2012). Partnering is a more common experience for older men, nonetheless. Over twice as many older men married and three times as many cohabited than older women (Figure 1).

[Figure 1]

Despite the small number of relationship transitions, there are still observed significant changes in health depending on whether older adults married or cohabited between waves. Table 2 ranks the health indicators in order of frequency and summarizes changes in health by relationship transition. For example, high blood pressure and arthritis are the most common health conditions, with over a quarter of the sample reporting that their health worsened over time for these two indicators. The least common are stroke and lung disease.

[Table 2]

Based on the descriptive patterns, it is not clear whether starting a relationship is more important than relationship type, or whether cohabitation occupies a middle ground in terms of health — not as good as marriage but better than staying single. For example, for every health indicator older adults who marry remained in better health over time (i.e., significantly fewer marrieds reported a condition that worsened). For 6 of the 8 indicators older adults who cohabited remained in good health (diabetes and lung disease were the two exceptions). These

two patterns suggest that partnering is more important than partnership type. Yet for half of the health indicators (e.g., heart disease, blood pressure, diabetes and lung disease) older adults who married reported fewer instances of worsening health than older adults who cohabited. So partnership type also seems to be important for health in later life, with marrying somewhat more protective of health than cohabiting for older adults.

Logistic regressions support this conclusion as well. Prior to adjusting for selection into a union, partnering is good for later-life health but marrying is better (Table 3). Older adults who married were significantly less likely to report a decline in cardiovascular health (e.g., heart disease, high blood pressure), lung disease, incontinence, arthritis or diabetes. Older adults who cohabited were significantly less likely to report worse health conditions for three of the indicators, and the less serious ones at that (e.g., blood pressure, incontinence and arthritis). What is more, there are clear cases where cohabiting is not as protective of health as marrying. Older cohabitors had significantly *higher* odds of developing cardiovascular problems or diabetes than older adults who married (denoted by the underlined odds ratios in Table 3). For none of the indicators were adults who cohabited better off than those who married.

[Table 3]

Although the preliminary results controlled for demographics and baseline health, they did not account for selection into marriage and cohabitation. Table 4 summarizes results from a series of selection models that tested whether the preliminary results were robust to adjustments for selection. All of the models controlled for the same variables shown in Table 3. The table also summarizes results from two sensitivity tests, interacting relationship transitions by gender and by age to determine whether the health advantages of partnering were gender specific or benefited a particular age group.

[Table 4]

Accounting for selection changes the results considerably. Previously, cohabiting provided no health protection against diabetes, cancer, lung disease or heart disease. Cohabitors' odds of declining health for these four indicators were no different than the odds for older adults who stayed single. After accounting for selection into cohabitation, however, older adults who cohabited were less likely to report health problems for these four indicators — the same as older adults who married.

Prior results also showed that older adults who cohabited had higher odds of reporting cardiovascular health problems. Accounting for selection, these elevated risks disappeared so that older adults who cohabited had odds that were no different from that of people who married. Age played a significant role only in the model for heart disease, suggesting that partnering in later life is especially protective against heart disease for adults who 65 or older. For the three less serious health indicators — incontinence, arthritis and high blood pressure — accounting for selection did not change the results. Older adults who remained single still were more likely to report a decline in health over time than those who married or cohabited.

To better understand results from the selection models, we calculated predicted probabilities that the health of older adults would decline between the two time periods, conditioned on the relationship transition that they experience (Figure 2). For every health indicator except stroke, older adults who remained single were significantly more likely to report a decline in health than those who either cohabited or married. Those who remained single had a 29% chance of reporting that their arthritis worsened, compared with a 12.5% chance for those who married or cohabited, once selection into these relationships was taken into account. Even for more serious health conditions, the differences are striking. Older adults who remained single

had a 13% chance of reporting heart disease during the period of observation, three times the probability of those who cohabited or married. Importantly, for none of the health indicators are the differences between married and cohabiting significant.

[Figure 2]

Discussion

This study looked at changes in the health of single, healthy adults who were at least 50 years old. Was cohabiting as protective of health in later life as marrying? In other words, does partnering matter more than partnership type in an environment where both cohabitation and marriage are stable and offer unique benefits that any older adults may find appealing? We built on prior studies by moving beyond mortality to consider eight different health indicators. Methodologically we also accounted for selection into cohabiting and marital relationships to better understand how union transitions affected health.

The overarching finding, once we accounted for selection effects, is that cohabitation and marriage are virtually equally protective of health in later life. Marrying is protective of health for 7 of the 8 indicators; cohabitation is protective for the same 7 indicators, albeit for heart disease only among adults who were at least 65. What is clear from these findings is that staying single in later life poses the greatest risks for health: older adults who remained single over time had the highest odds of reporting a decline in health for every indicator except stroke (which was so rare in the sample that we may not have been able to detect any significant changes). The implication is that starting a new relationship in later life is more protective of health than the type of relationship that older adults enter.

What older adults are most likely to form and benefit from these unions? Older adults who were male, [fill], [fill] were more likely to enter into marriage or cohabitation and to benefit

from these partnerships. This does not imply that the mechanisms are the same for cohabitation and marriage. Although marrieds and cohabitors are more likely to see a physician regularly, it is marrieds who are still more likely to receive direct care from a spouse. Marrieds and cohabiters also differ in why they select their unions: cohabitations benefit those who seek partnership but not legal or tax benefits of unions, while marrieds benefit from the symbolic status of their union as well as the legal status. The ways that these benefits work to enhance health, however, is not a focus of our analysis. However, what is suggested from our findings is that partnership itself has broad reach, benefiting our respondents across nearly all indicators under examination, including both those that are chronic and occur more among women (arthritis, incontinence) and those that are life-threatening and more common among men (heart disease, high blood pressure).

Loneliness, isolation, and living alone are demonstrably bad for older adults' health. This does not imply though that all partnerships are good and benefit health. Our study provides further evidence that close partnerships matter for older adults' well-being, and that occupying these relationships generally matters over and above the legal status or type of relationship. That our findings differed neither by gender nor (for the most part) by age bolsters our claim that unions matter for older adults regardless of gender, age, or type of relationship.

References

Adams, J. M., & Jones, W. H. (1997). The conceptualization of marital commitment: An integrative analysis. *Journal of Personality and Social Psychology, 72*, 1177–1196.

Breeze, E., A. Sloggett, and A. Fletcher. 1999. "Socioeconomic and Demographic Predictors of Mortality and Institutional Residence Among Middle Aged and Older People: Results From the Longitudinal Study." *Journal of Epidemiology and Community Health* 53:765–774.

Brown, S. (2000). Union transitions among cohabitors: The role of relationship assessments and expectations. *Journal of Marriage and the Family, 62*, 833 – 846.

Brown, S., Bulanda, J., & Lee, G. (2005). The significance of nonmarital cohabitation: Marital status and mental health benefits among middle aged and older adults. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 60B,* S21 – S29.

Brown, S., Bulanda, J., & Lee, G. 2012. "Transitions Into and Out of Cohabitation in Later Life." *Journal of Marriage and Family* 74:774-793.

Brown, S., Lee, G.,& Bulanda, J. (2006).Cohabitation among older adults: A national portrait. *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 61B,* S71 – S79.

Brown, S., & Kawamura, S. (2010). Relationship quality among cohabiters and marrieds in older adulthood. *Social Science Research, 39*, 777 – 786.

Bulcroft, R., & Bulcroft, K. (1991). The nature and functions of dating in later life. *Research on Aging, 13,* 244 – 260.

Chevan, A. (1996). As cheaply as one: Cohabitation in the older population. *Journal of Marriage and the Family, 58,* 656 – 667.

Cohen, S. and T. Willis. 1985. "Stress, Social Support, and the Buffering Hypothesis." *Psychological Bulletin* 98:310-357.

Connidis, I. (2006). Intimate relationships: Learning from later life experience. In T. Calasanti & K. Slevin (Eds.), *Age matters* (pp. 123 – 153). New York: Routledge.

Conney, T. and K. Dunne. 2001. "Intimate Relationships in Later Life: Current Realities, Future Prospects." *Family Studies* 22:838-858.

Cornwell, E. & L. Waite. 2009. "Social Disconnectedness, Perceived Isolation, and Health Among Older Adults." *Journal of Health and Social Behavior* 50:31-48.

Deb, P. & P. Trivedi. 2006. "Maximum Simulated Likelihood Estimation of a Negative Binomial Regression Model with Multinomial Endogenous Treatment." *The Stata Journal* 6:246 – 255.

Dickson, F., Hughes, P., & Walker, K. (2005). An exploratory investigation into dating among later life women. *Western Journal of Communication, 69,* 67 – 82.

Duncan, G. J., Wilkerson, B., & England, P. (2006). Cleaning up their act: The effects of marriage and cohabitation on licit and illicit drug use. *Demography, 43,* 691–710.

Eggebeen, D. J. (2005). Cohabitation and exchanges of support. *Social Forces, 83,* 1097–1110.

Franks, M., Wendorf, C., Gonzalez, R., & Ketterer, M. (2004). Aid and influence: Health promoting exchange of older married partners. *Journal of Social and Personal Relationships, 21,* 431 – 445.

Gardner, J. & A. Oswald. 2004. "How is Mortality Affected by Money, Marriage, and Stress?" *Journal of Health and Economics* 23:1181–1207.
Freedman 1996

Goldman, N., Korenman, S., &Weinstein, R. (1995). Marital status and health among the elderly. *Social Science & Medicine, 40,* 1717 – 1730.

Grundy, E. and A. Sloggett. 2003. "Health Inequalities in the Older Population: The Role of Personal Capital, Social Resources, and Socioeconomic Circumstances." *Social Science & Medicine* 56:935-947.

Hays, J. (2002). Living arrangements and health status in later life: A review of recent literature. *Public Health Nursing, 19,* 136 – 151.

Horwitz, A., & White, H. (1998). The relationship of cohabitation and mental health: A study of a young adult cohort. *Journal of Marriage and the Family, 60,* 505–514.

Hughes, M., &Waite, L. (2002). Health in household context: Living arrangements and health in late middle age. *Journal of Health and Social Behavior, 43,* 1 – 21.

Lichter, D., Z. Qian, & L. Mellot. 2006. "Marriage or Dissolution? Union Transitions Among Poor Cohabiting Women." *Demography* 43:223-240.

Liu, H. and C. Reczek. 2012. "Cohabitation and US Adult Mortality: An Examination by Gender and Race." *Journal of Marriage and Family* 74:794–811.

Lund, R., Due, P., Modvig, J., Holstein, B., Damsgaard, M., & Andersen, P. (2002). Cohabitation and marital status as predictors of mortality: An eight year follow-up study. *Social Science & Medicine, 55,* 673 – 679.

Lund, R., C. Nilsson, & K. Avlund. 2010. "Can the Higher Risk of Disability Onset Among Older People Who Live Alone be Alleviated by Strong Social Relations? A Longitudinal Study of Nondisabled Men and Women." *Age and Ageing* 39:319-326.

Karlsson, S., & Borell, K. (2005). A home of their own: Women's boundary work in LAT relationships. *Journal of Aging Studies, 19,* 73 – 84.

Kenney, C. and S. McLanahan. 2006. "Why Are Cohabiting Relationships More Violent Than Marriages?" *Demography* 43:127–140.

King, V., & Scott, M. (2005). A comparison of cohabiting relationships among older and younger adults. *Journal of Marriage and Family, 67,* 271 – 285.

Koskinen, S., Joutsenniemi, K., Martelin, T., & Martikainen, P. (2007). Mortality differences according to living arrangements. *International Journal of Epidemiology, 36,* 1255 – 1264.

Manzoli, L., Villari, P., Pirone, G. M., & Boccia, A. (2007). Marital status and mortality in the elderly: a systematic review and meta-analysis. Social Science & Medicine, 64(1), 77–94.

Moustgaard, H., & Martikainen, P. (2009). Nonmarital cohabitation among older Finnish men and women: Socioeconomic characteristics and forms of union dissolution. *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 64B,* S507 – S516.

Nihtila, E. and P. Martikainen. 2008. "Why Older People Living With a Spouse Are Less Likely to be Institutionalized: The Role of Socioeconomic Factors and Health Characteristics." *Scandinavian Journal of Public Health* 36:35-43.

Noel-Miller, C. 2011. "Partner Caregiving in Older Cohabiting Couples." *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* 66:341–353.

Scafato, E., L. Galluzzo, C. Gandin, S. Ghirini, M. Baldereschi, A. Capurso, S. Maggi, G. Farchi. 2008. "Marital and Cohabitation Status as Predictors of Mortality: A 10-year follow-up of an Italian Elderly Cohort." *Social Science and Medicine*¸67:1456-1464.

Umberson, D. 1992. "Gender, Marital Status, and the Social Control of Health Behavior." *Social Science and Medicine* 34:907-917.

US Census Bureau. 2013. America's Families and Living Arrangements, Table UC-3. US Census Bureau, Washington DC. http://www.census.gov/hhes/families/files/cps2013/tabUC3-all.xls

Vespa, J. 2013. "Relationship Transitions Among Older Cohabitors: The Role of Health, Wealth, and Family Ties." *Journal of Marriage and Family* 75:933-949.

Vespa, J. 2012. "Union Formation in Later Life: Economic Determinants of Cohabitation and Remarriage Among Older Americans." *Demography* 49:1103-1125.

Williams, K. 2003. "Has the Future of Marriage Arrived? A Contemporary Examination of Gender, Marriage, and Psychological Well-Being." *Journal of Health and Social Behavior* 44:470–487.

Williams, K., & Umberson, D. (2004). Marital status, marital transitions, and health: a gendered life course perspective. Journal of Health and Social Behaviour, 45(1), 81–98.

Wu, Z., M. Penning, M. Pollard, and R. Hart. 2003. “In Sickness and in Health: Does Cohabitation Count?” *Journal of Family Issues* 24: 811-838.

Table 1. Descriptive statistics of healthy, single adults age 50 and older (HRS 1998 – 2008)

	Unweighted N	Weighted N	Weighted mean (s.d.)
Relationship transitions			
Marry	427	1,762,859	6.4%
Cohabit	299	1,412,137	5.1%
Stay single	6,576	24,597,187	88.6%
Demographics (baseline)			
Male	2,069	8,992,682	32.4%
Female	5,233	18,779,501	67.6%
Marital status			
Never married	612	2,805,175	10.1%
Divorced	2,416	10,742,761	38.7%
Widowed	4,274	14,224,247	51.2%
Age (years)	7,302	27,772,183	65.5 (11.3)
50 - 64 years old	3,134	14,058,189	50.6%
65 and older	4,168	13,713,994	49.4%
Race			
White	5,575	22,768,787	82.0%
Black	1,433	3,851,828	13.9%
Other	294	1,151,568	4.2%
College educated	1,117	4,936,367	17.8%
Net worth	7,302	27,772,183	$72,960 ($314,208)
Retired	3,344	11,455,828	41.3%
Religious	4,920	17,639,661	63.7%
Close social networks	1,583	5,751,932	20.7%
Health controls (baseline)			
Smoker	1,428	6,045,677	21.8%
Drinker	2,054	8,777,921	31.6%
Body mass index (BMI)	7,302	27,772,183	26.7 (5.3)
Total sample	7,302	27,772,183	

Table 2. Decline in older adults' health by their relationship transition (HRS 1998 – 2008)

	% of sample with condition (weighted mean)	% by relationship transition: Stay single	Marry	Cohabit
High blood pressure				
Stable good health	71.2	69.5	86.0[S]	79.8[M, S]
Condition worsens	28.8	30.5	14.0[S]	20.2[M, S]
Arthritis				
Stable good health	72.8	71.0	85.1[S]	85.1[S]
Condition worsens	27.2	29.0	15.0[S]	15.0[S]
Incontinence				
Stable good health	81.4	80.2	89.7[S]	92.5[S]
Condition worsens	18.6	19.9	10.3[S]	7.5[S]
Heart disease				
Stable good health	86.3	85.5	94.3[S]	90.1[M, S]
Condition worsens	13.7	14.5	5.7[S]	9.9[M, S]
Diabetes				
Stable good health	90.8	90.5	95.3[S]	90.8[M]
Condition worsens	9.1	9.5	4.7[S]	9.2[M]
Cancer				
Stable good health	92.1	91.7	94.4[S]	96.5[S]
Condition worsens	7.8	8.4	5.6[S]	3.5[S]
Lung disease				
Stable good health	93.5	93.1	97.4[S]	96.1[M]
Condition worsens	6.5	6.9	2.6[S]	3.9[M]
Stroke				
Stable good health	94.2	93.7	97.8[S]	97.7[S]
Condition worsens	5.8	6.3	2.2[S]	2.3[S]

[M] Significantly different from the percentage for the married, two-tailed t-test, $p < .05$.
[S] Significantly different from the percentage for single, two-tailed t-test, $p < .05$.

Table 3. Logistic regression predicting a decline in health over time (HRS 1998 – 2008) (odds ratios shown)

	Heart disease	High blood pressure	Diabetes	Incontinence	Arthritis	Lung disease	Cancer	Stroke
Relationship transition								
Marry (ref = stay single)	0.42 ***	0.42 ***	0.45 **	0.63 *	0.55 *	0.43 **	0.66	0.50
Cohabit (ref = stay single)	0.95	0.71 *	0.90	0.57 *	0.56 *	0.66	0.68	0.60
Demographics								
Female	1.08	1.15	0.82	2.05 ***	1.89 ***	1.50 **	0.96	0.98
Marital status (ref = divorced)								
Never married	1.07	0.86	1.00	1.10	0.77 *	1.04	1.12	1.44 **
Widowed	0.87	0.66 **	0.90	0.95	0.68 *	0.75	0.92	1.29
Age (ref = 50-64 years old)								
65 and older	1.99 ***	1.32 **	0.81	1.91 ***	1.45 ***	1.21	1.25 *	2.47 ***
Race (ref = white)								
Black	0.78 *	1.16	1.32 *	0.90	0.86	0.55 *	0.77	1.42 *
Other	0.89	0.96	1.38	0.85	1.16	1.41	0.45 *	0.76
College educated	0.59 ***	0.75 *	0.53 ***	1.14	0.82	0.78	1.08	0.83
Net worth (ref = lowest)								
Middle quartile	0.94	0.99	1.00	1.12	1.21	0.86	0.94	0.79
Top quartile	0.86	1.06	1.00	0.91	1.07	0.75 *	1.25	0.72 **
Retired	1.00	1.00	1.23 *	1.00	1.04	1.28 *	1.29	1.10
Religious	0.97	1.00	0.98	0.96	0.96	1.06	0.83	0.89
Close social networks	1.12	0.98	1.02	1.04	1.3 *	1.10	1.10	1.19
Health controls								
Smoker	1.08	0.99	1.19	0.89	1.08	3.90 ***	1.30 *	1.15
Drinker	0.81 ***	0.88	0.80 *	0.90	1.04	0.92	0.98	0.74 *
Body mass index (BMI)	1.03 ***	1.05 ***	1.12 ***	1.03 *	1.05 ***	1.02	1.01	0.99
Wald Chi^2	137.33 ***	94.9 ***	193.5 ***	208.25 ***	101.6 ***	167.21 ***	49.7 ***	137.8 ***
Psuedo-R^2	0.04	0.03	0.07	0.06	0.04	0.07	0.02	0.05

* p < .05; ** p < 01; *** p < .001

Table 4. Summary grid of logistic regressions predicting the likelihood of health conditions **worsening**, after adjustments for selection (HRS 1998 – 2008)

	Marrying v. staying single	Cohabiting v. staying single	Cohabiting v. marrying
Diabetes	Lower odds	Lower odds	---
Age * Relationship	Sig. < 65 only	---	---
Female * Relationship	---	---	---
Cancer	Lower odds	Lower odds	---
Age * Relationship	---	---	---
Female * Relationship	---	---	---
Lung disease / problems	Lower odds	Lower odds	---
Age * Relationship	---	---	---
Female * Relationship	---	---	---
Heart disease	Lower odds	---	---
Age * Relationship	Effect stronger for 65+	Sig. < 65 only	---
Female * Relationship	---	---	---
Incontinence	Lower odds	Lower odds	---
Age * Relationship	---	---	---
Female * Relationship	---	---	---
Arthritis	Lower odds	Lower odds	---
Age * Relationship	---	---	---
Female * Relationship	---	---	---
High blood pressure	Lower odds	Lower odds	---
Age * Relationship	---	---	---
Female * Relationship	---	---	---
Stroke	---	---	---
Age * Relationship	---	---	---
Female * Relationship	---	---	---

Note: Dashed lines indicate non-significant differences. All of the models controlled for demographic characteristics and the baseline health measures shown in Table 3.

Figure 1. How many single older adults start a new relationship?

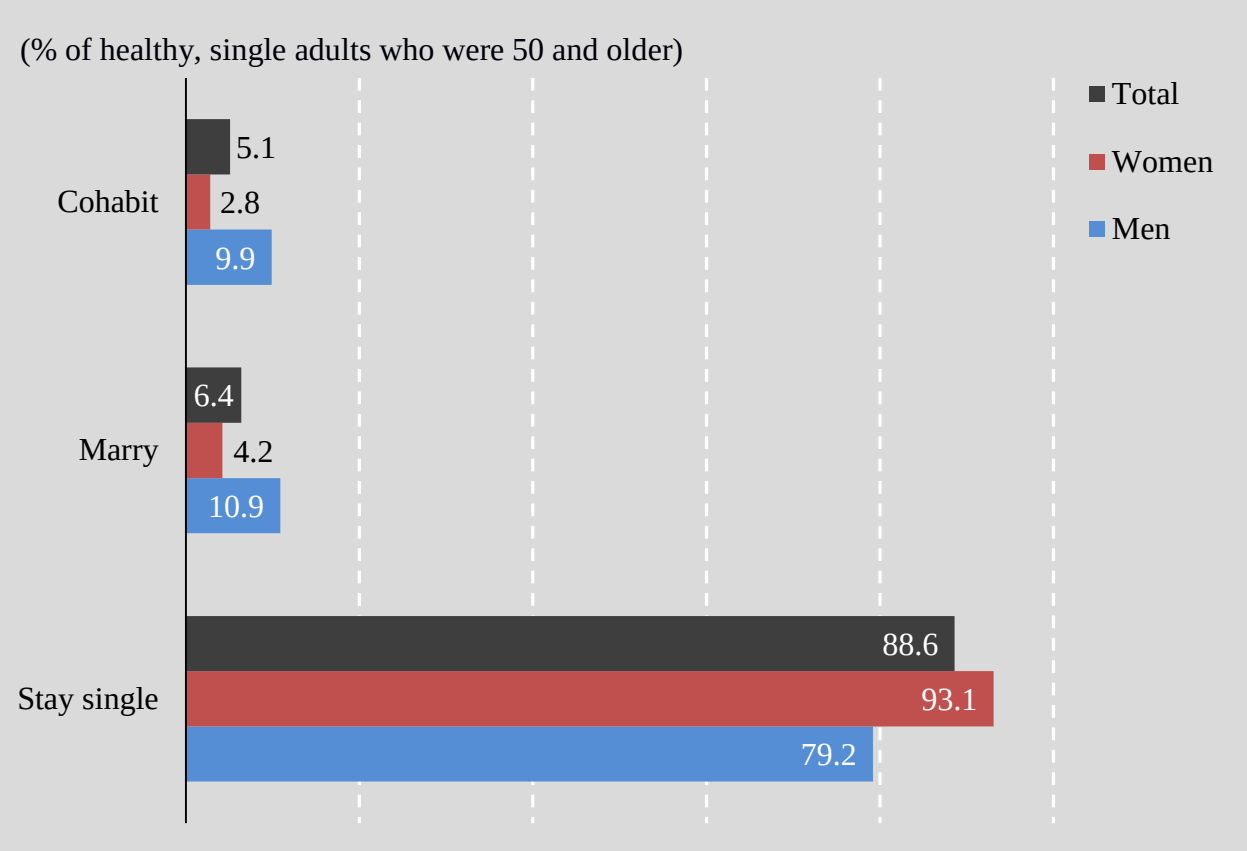
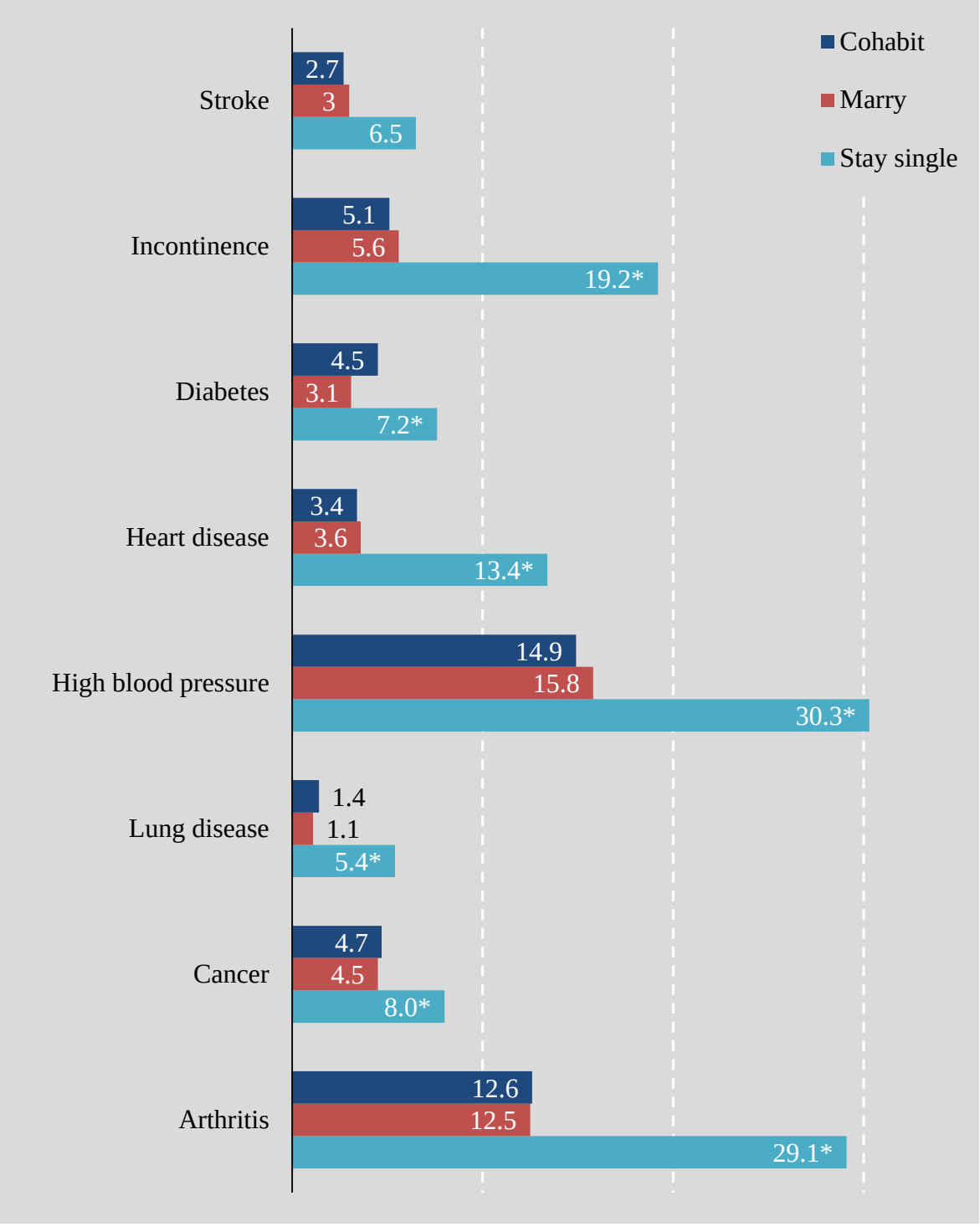


Figure 2. Predicted probability that selected health conditions will **worsen** across time, by the relationship transition that older adults experience (HRS 1998 – 2008)



Note: For every health indicator except for stroke, the predicted probabilities for adults who remain single are significantly larger than the probabilities for adults who either cohabit or marry (at the $p < .05$ level). Differences between probabilities for marrying and cohabiting are not different for any health indicator (at the $p < .05$ level).