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Complex Families and Late-Life Outcomes Among Elderly Persons: Disability, Institutionalization, and Longevity

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Abstract

The authors examined the effects of marital status and family structure on disability, institutionalization, and longevity for a nationally representative sample of elderly persons using Gompertz duration models applied to longitudinal data from 3 cohorts of the Health and Retirement Study ($N = 11,481$). They found that parents with only stepchildren have worse outcomes than parents with only biological children. Elderly mothers with only stepchildren become disabled and institutionalized sooner, and elderly men with only stepchildren have shorter longevity relative to their counterparts with only biological children. The effect of membership in a blended family differs by gender. Relative to those with only biological children, women in blended families have greater longevity and become disabled later, whereas men in blended families have reduced longevity. The findings indicate that changing marital patterns and increased complexity in family life have adverse effects on late-life health outcomes.

Keywords

aging; disability; divorce; families in middle and later life; intergenerational relations; stepfamilies

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Social factors, in addition to biological and economic factors, are well documented influences on health and health behaviors (Thomas, 2011; Umberson, Crosnoe, & Reczek, 2010; Umberson & Montez, 2010). For all persons, but especially for the very young and the very old, the family is an important component of the social support network. Any changes in the structure of the family that affect social support and intergenerational exchange, therefore, may ultimately affect health.

As a result of gradual deterioration with age or sudden health shocks, elderly persons face a considerable probability of becoming disabled and unable to care for themselves. About 20% of persons age 65 or older in the United States have chronic disabilities (Martin, Freedman, Schoeni, & Andreski, 2009); roughly one third have mobility limitations, and 7% to 8% have severe cognitive impairments (Freedman, Martin, & Schoeni, 2000). For older persons facing functional decline, families have long been a mainstay of assistance, by providing care directly or by providing the economic resources to allow such family members to remain independent. Dramatic changes in American families over the last half century, however, have transformed intergenerational relations and social support that is potentially available to older adults. Beginning with the Baby Boom cohorts and continuing thereafter, there has been a trend toward increased incidence of divorce and subsequent (re)marriage as well as nonmarital cohabitation. As a consequence, more complex family structures have displaced the traditional nuclear family for large segments of the U.S. population (Wachter, 1997). Given the far-reaching repercussions for the distribution of economic and social well-being through its impact on late-life health outcomes (e.g., disability, longevity) and health care use (e.g., institutionalization) of elderly persons, the potential erosion of the family as a support network is a matter of policy as well as research concern.

The spouse is typically the primary source of social support for older adults. In the absence of a spouse, children often become the mainstay of support. The degree to which children serve as effective sources of support, however, is likely to vary as family structures become more complex. Cherlin (2004), for example, argued that as marriage has become increasingly deinstitutionalized, the social norms that accompany it have become less well defined, resulting in greater ambiguity regarding expectations of intergenerational support. Given the lack of a well-defined legal status for stepparent–stepchild relationships and the lack of clear cultural norms, perceptions of obligations between stepparents and stepchildren differ considerably within the population (Schmeeckle, Giarrusso, Feng, & Bengtson, 2006). On the other hand, the growth in diverse family structures may result in greater social acceptance of different types of families; perceptions of family and kin may, in fact, extend beyond the nuclear family (Bengtson, 2001). If definitions of kinship broaden in response to more complex family structures, then intergenerational support may not be adversely affected. The degree to which adult children play active roles in the lives of their elderly parents may be affected by the strength of family ties, the nature of parent–child relationships earlier in life, and how individuals define their kin networks (Curran, McLanahan, & Knab, 2003; Ganong & Coleman, 2006a, 2006b; Mahoney, 2006; Marsiglio, 2004; Schmeeckle et al., 2006; Silverstein, Conroy, Wang, Giarrusso, & Bengtson, 2002).

A small but growing literature has examined the effects of marital disruption and complex family structures among elderly persons on *process* measures, most notably, intergenerational transfers (Pezzin, Pollak, & Schone, 2008; Pezzin & Schone, 1999, 2002; Shapiro & Remle, 2011) and quality of intergenerational relations (Amato, 2010). Little is known, however, about the effects of such variables on late-life *outcomes*. This was the focus of our study. In particular, we sought to bridge the literature examining the effects of family structure and marital disruption on intergenerational transfers with the literature investigating the effects of social support on health. More specifically, we examined whether marital status and complex family structures, our proxies for availability and quality of social support, have a direct effect on late-life measures of parental health, with a special focus on incidence of disability, institutionalization, and longevity. These outcomes, already of considerable scientific interest in view of the rapid aging of the population and dramatic changes in American families over the last half-century, have recently taken the forefront of the policy debate concerning the need to restructure existing public programs, most notably Medicare and Medicaid, in response to the anticipated rise in the demand for long-term care services.

BACKGROUND

The beneficial effects of social support on health have been well established (House, Landis, & Umberson, 1988; House, Umberson, & Landis, 1988; Temkin-Greener et al., 2004). Social support has been hypothesized to improve health, or to provide a buffer from poor health, through a variety of channels, ranging from biological processes that affect the neuroendocrine and immunological systems (Uchino, 2006) to social processes that provide psychological and emotional support that modulate stress (Thoits, 2011; Umberson, 1987, 1992; Umberson, Crosnoe, & Reczak, 2010; Umberson, Pudrovska, & Reczak, 2010). Recent work has begun to focus on the dynamics of social relationships and their effects on health over time. Thomas (2011), for example, found that high levels of social engagement lead to both lower initial levels and lower growth rates in cognitive limitations. Similarly, social engagement appears to lower growth rates in physical limitations.

A vast body of research has established the protective effects of marriage in reducing mortality and morbidity, especially among men (Pienta, Hayward, & Jenkins, 2000; Ribar, 2004; Waite, 1995). Recent research, however, suggests that it may be the *transitions* in marital status that affect health, with detrimental effects being more pronounced for transitions due to widowhood than those due to divorce (Wade & Pevalin, 2004), differing for men and women (Carr & Springer, 2010; Kalmijn & Monden, 2006; Meadows, 2009; Williams & Umberson, 2004) and widening over time (Liu & Umberson, 2008).

Evidence also suggests that parenting (and the lack of parenting) has an impact on the well-being of adults throughout the life course (Umberson, Crosnoe, & Reczak, 2010; Umberson, Pudrovska, & Reczak, 2010). The quality of relationships with children and experiences with parenting affects parents' physical and mental health, even at older ages. Children may improve the health of their parents through emotional support and intimacy, regulating behavior, and serving as a network that ultimately helps individuals make better decisions (Zunzunegui et al., 2005). The presence of adult children has been shown to delay nursing home entry (Freedman, 1996), for example, and the strength of intergenerational affectional solidarity has been linked to lower mortality risk later in life (Silverstein & Bengsten, 1991). Children may also have a direct effect on their parents' health by providing financial and in-kind assistance. Informal care receipt has been shown to lower nursing home entry (Charles & Sevak, 2005; Van Houtven & Norton, 2004) and to decrease the length of hospital stays and the number of outpatient hospital visits (Van Houtven & Norton, 2004).

Finally, the steady decline in fertility over the past several decades implies that a greater number of individuals will reach old age childless. Theoretically, even apart from possible selection issues, the effect of being childless on health is ambiguous. Childless adults may have greater resources to invest in their own health but may lack social support that encourages healthy behaviors. The effects of childlessness on health appear to be mixed and seem to differ on the basis of gender and marital status. Plotnick (2011) found that childless adults have worse health status and health behaviors along several dimensions, even when controlling for marital status. However, some of the adverse effects of childlessness for men appear to be driven primarily by the absence of a partner rather than the lack of children (Keizer, Dykstra, & Poortman, 2010; Umberson, Crosnoe, & Reczek, 2010).

With increasingly diverse and complex family relationships, social support available to elderly individuals may be further influenced by the kin relationship of children in their family networks (stepchildren, biological children, or a combination). Relationships between a stepchild and a stepparent may be more nuanced and conditional than relationships between parents and their biological children. Societal expectations about the role that stepchildren should play in providing assistance for their parents are less clearly defined (Cherlin, 2004). In particular, there appears to be substantial variation in whether adult children view a stepparent as kin, especially when the step-relationship was acquired later in life (Ganong & Coleman, 2006a, 2006b; Schmeeckle et al., 2006).

Evidence also suggests that intrafamily relationships and exchange are affected by the entire composition of the family network, rather than simply by the relationship between parent(s) and a specific child. However, with the exception of Kalmijn (2007), who used a life course perspective and theories of parental investments in children to investigate the dynamics of stepfamily formation and diverse family structures on intergenerational support from children to parents in later life, virtually all research on outcomes associated with complex families has focused on its consequences for children. Hofferth and Anderson (2003), for example, found that stepchildren in blended families receive more time and warmth than stepchildren who are in families that are not blended. They argued that this effect may come from positive selection (e.g., the fathers in families with both stepchildren and biological children are better fathers than those who are only stepfathers). Although there is some evidence that educational outcomes are lower for stepchildren than for biological children raised in blended stepmother families, there is no evidence that this is the case for stepfather families (Case et al., 2001; Gennetian, 2005; Ginther & Pollak, 2004). Because stepfather families are much more common than stepmother families, differences in the educational attainment of stepchildren and biological children raised by the same parents are unlikely to explain the lower levels of transfers from stepchildren to parents in blended families observed by Kalmijn.

Method

Conceptual Framework

The work of Kamlijn (2007) and Hofferth and Anderson (2003) served as the guiding framework for our empirical analysis. Taking a life course perspective, these authors argued that the well-being of elderly persons is a function of past investments made in children and the ties between children and parents. A potential payoff for parents to investing in children is support later in life that may translate into better health. In the absence of children, however, there are no investments to be made, and it is unlikely that nonrelatives will fully compensate for social support later in life. This logic underlies our first hypothesis: Childless elderly persons will experience faster decline in functioning, shorter time to institutionalization, and shorter life spans than individuals with biological children. We further hypothesized that the effect will be greater among women than men, given that mothers tend to invest more in children than fathers.

At the same time, mothers play the role of kinkeeper and tend to enhance the relationship between a father and his children. To the extent that mothers sufficiently enhance investments in children by their husbands, any differential effect of social support by children on health for married mothers and fathers will be minimized. When parents divorce, however, investments in children become more difficult. In addition, the kinkeeping role played by the mother will no longer be operative, further harming the relationship between fathers and their children. These patterns led to our second hypothesis: Divorce will negatively affect the health and functioning of both men and women, but the effect will be larger for fathers compared to mothers.

Marital disruption resulting from widowhood is also likely to affect parent–child relationships and parent health. On average, however, widowhood occurs later in life than divorce, making it less likely that it would substantially affect investments in children. For fathers, however, becoming widowed means that the father loses the role of his spouse as the kinkeeper, which may result in weaker relations with his children, leading to lower support and greater vulnerability. We therefore hypothesized that widowhood will adversely affect health relative to being married, especially for men. We further hypothesized that the adverse effects of widowhood on disability, institutionalization, and longevity will be stronger than the effects of divorce on these outcomes.

Perhaps the most important consequence of marital disruption is the possibility that a new, more complex family is formed. Net of current marital status, it is likely that family type (only biological children, only stepchildren, blended family) will have an independent effect on parent–child relations and late-life parental health. We hypothesized that, relative to having only biological children, a parent with only stepchildren will experience a faster decline in health and functioning, shorter time to nursing home entry, and lower longevity. To the extent that fathers with only stepchildren invest more in their stepchildren than stepmothers would, due to the kinkeeping role of the new wife, we expected that mothers with only stepchildren will experience worse outcomes than fathers in this family type relative to their counterparts with only biological children.

Expectations on how blended families will influence parent–child relationships and ultimately affect health are less clear. Investments in stepchildren may be lower than in biological children. Such differences may lead to conflict in blended families, negatively affecting the quality of relationships and late-life parental health. Thus, our final hypothesis was that parents in blended families will experience worse outcomes than parents with only biological children.

Data

We used data from three cohorts from Health and Retirement Study collected by University of Michigan: (a) the Assets and Health Dynamics of the Oldest Old (AHEAD), (b) the Health and Retirement Survey (HRS), and (c) the Children of Depression (CODA) cohort. (For more details on the Health and Retirement Study, see http://hrsonline.isr.umich.edu/.) The AHEAD survey is a stratified panel of a nationally representative sample of community-dwelling elderly persons born before 1924 that began in 1993. The HRS and CODA cohorts are representative samples of persons born between 1924 and 1930 and 1931 and 194, that began in 1992 and 1998, respectively. For all three cohorts, respondents were followed longitudinally roughly every 2 years. Given our concern with late-life outcomes, we focused on the 10-year trajectory of persons age 65 or older who were not institutionalized at the time of study entry. Specifically, we used AHEAD data collected in 1993, 1995, 1998, 2000, and 2002 and HRS and CODA data collected in 1998, 2000, 2002, 2004, 2006, and 2008.

Along with basic demographic data, all three surveys provide longitudinal information on each respondent's health status, family characteristics, and economic resources. In addition, because the surveys follow respondents regardless of place of residence and collect detailed residence history, we were able to examine the implications of marital status and membership in complex families on the incidence of and timing to permanent nursing home entry and death.

A total of 12,891 respondents met our inclusion criteria. From this initial sample, we excluded 1,410 (10.9%) respondents who either (a) were never married (n = 379, 2.9%), (b) withdrew from the surveys or were lost to follow-up in any of the subsequent five waves following study entry (n = 626, 4.9%), (c) had missing values on key demographic characteristics that would have precluded us from assigning family structure (n = 83, 0.6%) or (d) had missing information on vital status or disability at any point during the 10-year study period (n = 322, 2.5%). Our final sample, therefore, consisted of 11,481 elderly persons, of whom 6,526 (56.8%) were women and 4,955 (43.2%) were men.

Dependent Variables

The three outcome variables were (a) time to development of chronic disability, (b) time to permanent nursing home entry, and (c) longevity. All outcomes are measured over a 10-year period. At each wave of the survey, a respondent was defined as having a disability if he or she reported difficulty with at least one basic activity of daily living (ADL)—transferring, dressing, bathing, toileting, eating, or walking across a room—or at least one instrumental activity of daily living (IADL)—grocery shopping, preparing meals, taking medications, using a telephone, or managing household finances. We then identified the first wave in which a respondent was coded as having a disability that did not result in recovery in subsequent waves (i.e., a *chronic* disability) and calculated the months from study entry interview to month of the wave in which such chronic disability was first reported.

Nursing home stays for elderly persons are of two types: (a) short stays after hospital discharge for purposes of rehabilitation and continued recovery and (b) permanent stays due to the need for 24-hour care on a continuing basis. We focused on transition to a *permanent* stay. When coding nursing home entry, information on timing of living arrangement transitions, collected retrospectively at each interview, was used to distinguish short-stay transitions from permanent-stay transitions. Respondents were coded as having made a permanent nursing home entry if their nursing home stay (a) lasted continuously across subsequent waves or (b) ended in death with no return to the community between waves. Time to nursing home entry was then calculated as the number of months between the initial interview and the respondent's reported date of nursing home admission corresponding to his or her permanent stay. Longevity was calculated on the basis of the date of death that was provided during next-of-kin exit surveys and matched to the National Death Index.

Independent Variables

Our key independent variables captured marital status and family structure at the time of study entry (by age 65 for the1998 HRS and CODA cohorts and by age 70 for the1993 AHEAD cohort). Parental marital status was defined through a set of three dichotomous variables: (a) currently divorced, (b) currently widowed, or (c) currently married (reference category). Family structure was captured by four binary variables identifying respondents in (a) stepfamilies (elderly persons with only stepchildren), (b) blended families (elderly persons whose family includes both biological and stepchildren) and (c) respondents in families with biological children but no stepchildren (reference category). Respondents with (d) no children comprised an additional comparison group.

Following the literature (Carr & Springer, 2010; Sweeney, 2010), we included a number of additional independent variables to capture differences across elderly respondents along sociodemographic, health, and economic dimensions that might otherwise confound the relationship among parental marital status, family structure, and late-life health outcomes. In particular, we included the number of daughters and the number of sons to characterize the size and gender composition of the family. Baseline health was captured by a count of major self-reported comorbidities as ascertained by the surveys (i.e., cancer, diabetes, lung disease, heart disease, history of stroke, arthritis). Baseline functioning was captured by indicators of limitations in ADLs (ranging from zero to six) and IADLs (ranging from zero to five) defined as: no disability (i.e., no difficulty with ADLs or IADLs), IADLs only, and limitations in at least one ADL (reference group). Baseline cognitive functioning, a survey-constructed variable capturing executive memory and ranging from 0 (*poor*) to 4 (*excellent*), was coded as 1 if cognitive functioning was rated as "fair" or "poor" and as zero otherwise. Sociodemographic characteristics of the elderly respondent included age (in years), gender, race/ethnicity (African American/Black; Hispanic; non-African American, non-Hispanic [reference group]), and years of formal education. Finally, respondents' economic status was incorporated by two constructs: (a) income, based on wages, Social Security, and pension income, and (b) wealth, as measured by the respondent's total net worth, both measured at study entry. Table 1 contains a complete list of variable definitions and summary information for our sample, overall and by gender.

Empirical Strategy

We applied a competing risk, Gompertz hazard model to estimate the independent effect of family structure, marital status, and other factors on longevity, disability, and nursing home entry over the 10-year study period, accounting for censoring due to the person's death or the end of the follow-up period (approximately 126 months). The Gompertz function, which allows for duration dependence (Lancaster, 1990), was found to be most consistent with the non-exit events considered here. Given the marked differences in study entry characteristics shown in Table 1 and evidence suggesting differential impacts of marital status and family structure for mothers and fathers, all models were stratified by respondent's gender.

Results

Hazard ratios (HRs) and associated significance levels for the duration models are presented in Table 2. The HRs can be interpreted as estimates of the effects of an explanatory variable on the risk of each event. We found a detrimental effect of membership in a stepfamily for mothers, with relative risks of 1.21 ($p = .09$) for time to developing disability and 1.67 ($p = .01$) for time to nursing home entry compared to women with biological children only. In fact, elderly mothers with only stepchildren experienced a higher relative risk of institutionalization than their childless counterparts ($p = .04$) when compared to mothers with only biological children, after controlling for baseline health, functioning, and marital status. Despite becoming disabled and institutionalized at a faster pace, mothers in stepfamilies did not experience abbreviated longevity relative to those with only biological children.

Contrary to expectations, membership in a blended family conferred a protective health effect for mothers compared to women with only biological children, with HRs ranging from 0.88 ($p = .08$) for incidence of disability to 0.83 ($p = .06$) for longevity. There were no statistically significant effects of membership in blended families on the time to nursing home entry, however. In contrast, women with no children experienced a higher hazard of institutionalization (HR = 1.24, $p = .02$) but were at no greater risk of developing a disability or dying within the 10-year study period than mothers with only biological children.

The results also indicated that the late-life effects of marital status and family structure differed for mothers and fathers. For men, membership in either a stepfamily only or a blended family was not associated with increased hazard of developing disability or nursing home entry; it did, however, increase the risk of death for men in our sample relative to fathers with only biological children (HR = 1.18, $p = .09$, and HR = 1.12, $p = .09$, respectively).

We also found adverse effects of being divorced among elderly men on both nursing home entry (HR = 1.37, $p = .09$) and longevity (HR = 1.27, $p < .001$) relative to being married at study entry. Similar results were not observed among elderly women. Widowhood had similar effects for men and women, increasing the hazard of institutionalization (HR = 1.45, $p < .001$, for men and HR = 1.24, $p = .01$, for women), but widowhood did not affect the hazard ofdisability or death, relative to married persons.

In addition to these main findings, our full regression models contained in Table 2 indicated that other factors are significantly associated with elderly persons' time to disability, institutionalization, and death. Not surprisingly, advanced age significantly increased the hazard of developing a disability, becoming institutionalized, or dying within the 10-year period for both men and women. Race/ethnicity was also a contributor to differential time to disability, nursing home entry, and death, but the effects differed significantly for men and women. Whereas elderly African American/Black persons experienced shorter spells in the disability-free state than non-African American, non-Hispanic respondents, regardless of gender (HR = 1.19, p<.001, for women and HR = 1.12, p = .05, for men), the lower relative risk of nursing home entry among African American/Black persons extended only to women (HR = 0.77, p = .01). Similarly, elderly Hispanic persons did not differ significantly from non-African American, non-Hispanic respondents in their time to disability, although they experienced a lower hazard of nursing home entry, an effect that held for both women and men (HR = 0.53, p < .001, for women and HR = 0.68, p = .08, for men). Hispanic women, but not Hispanic men, experienced greater longevity than non-African American/non-Hispanic respondents (HR = 0.82, p = .04).

There was also a strong educational gradient on late-life health outcomes: Elderly persons with more years of education had a lower hazard of developing ADL/IADL disability (HRs = 0.89 and 0.88, p < .001, for women and men, respectively) or dying (HR = 0.95, p < .001, for women and HR = 0.93, p = .01, for men) than those with fewer years of formal education. Poor physical and poor cognitive functioning at baseline were both associated with reduced longevity. These patterns held for men and women. Worse health, as measured by the number of comorbidities at study entry, increased the hazard that elderly men and women developed a disability or died, despite having the opposite effect on nursing home entry. Poor physical and cognitive functioning at study entry, on the other hand, were both associated with reduced longevity, a pattern that held for both men and women. Finally, our results suggest that wealthier respondents, as reflected by higher net worth at baseline, had a lower hazard of experiencing the onset of disabilities, of becoming permanent nursing home residents, and of dying within 10 years than those with smaller net worth, regardless of gender. Higher income, on the other hand, was associated with delayed disability and greater longevity outcomes only among elderly men.

Across all outcomes, the estimates of gamma, the parameter that indicates whether the hazard rate changes over time, indicated the existence of positive duration dependence in the initial state. In other words, the longer the respondent's spell in a given state (in our case, disability free, community living, and alive), the more likely he or she was to leave it.

Given the inherent difficulty in interpreting the underlying coefficients from the duration models, we calculated predicted time to event of all outcomes for alternative marital status and family structure combinations. These predicted duration spells, shown in Table 3, were computed at the individual level by setting the relevant family structure and marital status variables to new values while holding all other factors constant at their original (individual) levels. Predicted outcomes were calculated for each respondent in the sample and then averaged across the relevant sample. Differences in the predicted duration spells across alternative marital status and family structure groups can be interpreted as (averaged) marginal effects of the variables of interest on the outcomes, thereby enabling us to place our results more directly in the context of the hypotheses described above.

Perhaps the most striking results were those associated with family structure. After controlling for baseline health and functioning, marital status and a variety of other potential confounders, we found that elderly mothers with only stepchildren became disabled 14% (about 13 months) sooner than elderly persons with only biological children. Calculations based on predicted values indicated that mothers with only stepchildren became disabled roughly at the same time as women with no children and 21 months sooner than those in blended families. Similarly, mothers with only stepchildren entered nursing homes 27.4% (about 6 years) earlier than women with only biological children. Membership in stepfamilies also decreased longevity by 18 months (or 14%) among men (relative to fathers with only biological children), although a similar percentage-point estimate decline in longevity among women with stepchildren and those with only biological children did not achieve statistical significance at conventional levels.

It is interesting that membership in blended families affected men and women differentially. Elderly mothers in blended families generally exhibited a pattern of positive outcomes, delaying disability and mortality by 9.8% (about 9 months) and 16.1% (about 24 months), respectively, relative to mothers with only biological children. The effects were even larger when women in blended families were compared to women with only stepchildren and those with no children. In contrast, fathers in blended families (i.e., families with both joint biological children and stepchildren) were almost as vulnerable in terms of mortality as fathers with only stepchildren, dying about 1 year sooner than fathers of only biological children

Childlessness led to earlier institutionalization for both men and women, although the effects were more than twice as large for men (18.8%, or −75.5 months sooner than fathers with only biological children) compared to women (−12%, or 33 months earlier than mothers with only biological children).

The marginal effects of marital status on disability, institutionalization, and longevity, although substantial, were primarily limited to nursing home entry. Consistent with the notion of reduced family support among this group, divorced fathers tend to become institutionalized 17% (nearly 6 years) sooner than their married counterparts with similar baseline levels of economic resources and physical and cognitive functioning. Divorced men were also estimated to die about 2 years sooner than married men. Estimates for widowed persons followed a similar pattern, with both widowed men and women becoming institutionalized sooner than married (and divorced) persons.

Discussion

In general, our results support the notion that marital status and family type have significant impacts on late-life health outcomes of elderly persons. We found support for our first hypothesis for both men and women, indicating that elderly persons without children will enter nursing homes sooner than elderly persons with only biological children. Our finding of a large detrimental effect of membership in families with only stepchildren, most notably in terms of time to disability and time to nursing home entry among elderly women, is consistent with our expectations (our fourth hypothesis) and suggests that mothers with only stepchildren are particularly vulnerable in later life relative to women with only biological children. In fact, disability and institutionalization outcomes for mothers with only stepchildren were significantly worse than those of childless women. This finding, coupled with the evidence of reduced longevity among fathers with only stepchildren, raises concerns about the late-life health effects of the growing number of American elderly persons in only-stepchild(ren) families (Teachman & Tedrow, 2008).

Contrary to our fifth hypothesis, membership in blended families did not result in adverse late-life long-term care outcomes, at least not for elderly women. In fact, elderly mothers in blended families generally exhibited a pattern of positive outcomes, experiencing substantial delays in disability ($p = .08$) and mortality ($p = .06$) even when compared to mothers with only biological children. These effects, which persisted despite the inclusion of a wide array of variables capturing differences at study entry in marital status, health, functioning, and economic status, were even more marked when compared to women with only stepchildren and those with no children (see Table 3). One possible explanation for this finding is that mothers in blended families strive for equality, thereby investing equally in all children in the household, resulting in enhanced relationships. The only support for our hypothesis related to blended families related to longevity of elderly men: Fathers in blended families were almost as vulnerable in terms of mortality as fathers with only stepchildren, dying about 1 year sooner than fathers of only biological children.

Although childlessness led to earlier institutionalization for both men and women, there were no significant differences in incidence of chronic disability or longevity between parents with only biological children and elderly persons with no children, diminishing concerns about potential adverse selection into childlessness by parental health status. Finally, the substantial adverse effects of divorce and widowhood on institutionalization and longevity among elderly men are consistent with evidence documenting the protective effects of marriage on other aspects of men's health and suggests that discontinuities in family relationships directly affect late-life health trajectories of older men.

Our research suggests several avenues for further exploration. In this research, we focused on a specific set of late-life outcomes: incidence of disability, institutionalization, and death. Although our choice reflects our interest in outcomes with the most immediate long-term care policy relevance, they clearly do not capture all measures of health and health care utilization of scientific or social interest. To the extent that different late-life health outcomes are interrelated (e.g., depression, self-reported health, use of noninstitutional long-term care services), additional analyses that focus on the overall effect of marital status and complex families on the health and health care use of elderly persons would be illuminating.

Another consideration is the potential cohort effects on the relationships we examined. Stratified analyses by the two main groups—younger-old adults (HRS and CODA respondents) and oldest-old (AHEAD) respondents—revealed similar overall patterns for marital status across cohorts. Membership in complex families, however, generally led to worse outcomes among AHEAD respondents than HRS and CODA respondents, both in terms of magnitude and statistical significance of effects. AHEAD respondents with only stepchildren experienced a significantly higher risk of disability and nursing home entry (both in absolute terms and relative to AHEAD respondents with only biological children) than their HRS and CODA counterparts. The effects of membership in blended families was generally negative among AHEAD respondents, whereas the opposite held true for the younger HRS and CODA cohorts. Future research focusing specifically on cohort effects would be helpful.

Perhaps the most important direction for future research is to explore empirically the life course dynamic processes underlying intergenerational relations. We lacked information about the timing of family transitions and acquisition of step-relationships that precluded us from capturing the process by which step- and blended families might affect the late-life outcomes considered here. Information about the timing of family transitions would also provide further insights for interpreting observed differences, especially the marked differential gender effects.

An important limitation of our study is its inability to examine potential selection effects reflected in both marital status and membership in alternative family types. If childless elderly persons and elderly parents in step- and blended families differ in unobserved or unmeasured ways from those with only biological children with respect to factors affecting late-life health, then our findings of a relationship between family type and late-life disability, institutionalization, and longevity may be spurious. Although retrospective information on early life measures, including childhood health and living arrangements, would have been useful controls to minimize selection concerns, such data are not consistently available across the three HRS cohorts from which our sample was drawn. In addition, the lack of valid exclusion restrictions (i.e., variables predictive of marital status and family type but unrelated to health outcomes) precluded us from applying traditional approaches to remedying potential selection bias. Instead, we examined whether selection biased our findings by reestimating all our models including only the subset of elderly persons who were disability free at the time of the study entry (i.e., those who reported no difficulty with ADLs or IADLs by age 65 among HRS and CODA respondents, and age 70 for AHEAD respondents). Given that the results were remarkably similar across both samples, we are confident that the relationships described herein reflect the true association among family structure, marital status, and late-life health outcomes, rather than correlated, unmeasured health status.

In summary, our results provide strong evidence that parental marital status and family complexity have an important impact on late-life functioning, institutionalization, and longevity. Our study of elderly individuals also demonstrates that the health effects of marital status and family structure are different for men and women and carry through the end of the life course.

Conclusion

Social and instrumental support from family members, most notably spouses and adult children, has historically been a crucial underpinning of assistance to elderly persons. As cohorts of individuals who have experienced high rates of marital disruption continue to age, however, a growing number of men and women will reach old age in complex nontraditional families.

Evidence suggests that the effects of looser ties between elderly parents and their children have had a significant impact on the quality of intergenerational relations and the extent of intergenerational transfers. We investigated whether these changes led to differences in late-life outcomes. Our findings paint a hopeful picture for women in blended, but not step-, families. The picture for elderly men is less hopeful. The worse institutionalization and longevity outcomes among fathers in step- and blended families suggest that changing marital patterns and increased complexity in family life are altering the traditional role of family as a support network, raising concerns about the well-being of the growing number of men reaching old age in complex, nontraditional families. One important policy implication of our findings is the potential for increased demands on public programs, such as Medicare home health and Medicaid long-term care, to fill in the gap resulting from such changing family patterns. These increased demands will be especially strong for future cohorts of elderly men who, compared with the cohorts considered in this study, will have experienced significantly higher rates of nonmarriage, divorce, remarriage, and membership in complex families.

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References

Amato PR. Research on divorce: Continuing trends and new developments. Journal of Marriage and Family. 2010; 72:650–666.

Bengtson VL. Beyond the nuclear family: The increasing importance of multigenerational bonds. Journal of Marriage and Family. 2001; 63:1–16.

Carr D, Springer KW. Advances in families and health research in the 21st century. Journal of Marriage and Family. 2010; 72:743–761.

Case A, Lin I, McLanahan S. Educational attainment of siblings in stepfamilies. Evolution & Human Behavior. 2001; 22:269–289.

Charles KK, Sevak P. Can family caregiving substitute for nursing home care? Journal of Health Economics. 2005; 24:1174–1190. [PubMed: 15979742]

Cherlin AJ. The deinstitutionalization of American marriage. Journal of Marriage and Family. 2004; 66:848–861.

Curran SR, McLanahan S, Knab J. Does remarriage expand perceptions of kinship support among the elderly? Social Science Research. 2003; 32:171–190.

Freedman VA. Family structure and the risk of nursing home admission. Journals of Gerontology: Series B: Psychological Sciences and Social Sciences. 1996; 51:61–69.

Freedman VA, Martin LG, Schoeni RF. Recent trends in disability and functioning among older adults in the United States. Journal of the American Medical Association. 2002; 288:3137–3146. [PubMed: 12495394]

Ganong L, Coleman M. Obligations to stepparents acquired in later life: Relationship quality and acuity of needs. Journals of Gerontology: Series B: Psychological Sciences and Social Sciences. 2006a; 61:80–88.

Ganong L, Coleman M. Patterns of exchange and intergenerational responsibilities after divorce and remarriage. Journal of Aging Studies. 2006b; 20:265–278.

Gennetian L. One or two parents? Half or step siblings? The effect of family structure on young children's achievement. Journal of Population Economics. 2005; 18:415–436.

Ginther DK, Pollak RA. Family structure and children's educational outcomes: Blended families, stylized facts, and descriptive regressions. Demography. 2004; 41:671–696. [PubMed: 15622949]

Hofferth SL, Anderson KG. Are all dads equal? Biology versus marriage as a basis for paternal investment. Journal of Marriage and Family. 2003; 65:213–232.

House JS, Landis KR, Umberson D. Social relationships and health. Science. 1988 Jul 29.241:540–545. [PubMed: 3399889]

House JS, Umberson D, Landis KR. Structures and processes of social support. Annual Review of Sociology. 1988; 14:293–318.

Kalmijn M. Gender differences in the effects of divorce, widowhood and remarriage on intergenerational support: Does marriage protect fathers? Social Forces. 2007; 85:1079–1104.

Kalmijn M, Monden CW. Are the negative effects of divorce on well-being dependent on marital quality? Journal of Marriage and Family. 2006; 68:1197–1213.

Keizer R, Dykstra PA, Poortman A. Life outcomes of childless men and fathers. European Sociological Review. 2010; 26:1–15.

Lancaster, T. The econometric analysis of transition data. Cambridge, UK: Cambridge University Press; 1990.

Liu H, Umberson DJ. The times they are a changin': Marital status and health differentials from 1972 to 2003. Journal of Health and Social Behavior. 2008; 49:239–253. [PubMed: 18771061]

Mahoney MM. Stepparents as third parties in relation to their stepchildren. Family Law Quarterly. 2006; 40:81–108.

Marsiglio W. When stepfathers claim stepchildren: A conceptual analysis. Journal of Marriage and Family. 2004; 66:22–39.

Martin LG, Freedman VA, Schoeni RF, Andreski PM. Health and functioning among Baby Boomers approaching 60. Journals of Gerontology: Series B: Psychological Sciences and Social Sciences. 2009; 64:369–377.

Meadows SO. Family structure and fathers' well-being: Trajectories of mental health and self-rated health. Journal of Health and Social Behavior. 2009; 50:115–131. [PubMed: 19537455]

Pezzin LE, Pollak RA, Schone BS. Parental marital disruption, family type, and transfers to disabled elderly parents. Journals of Gerontology: Series B: Psychological Sciences and Social Sciences. 2008; 63:349–358.

Pezzin LE, Schone BS. Parental marital disruption and intergenerational transfers: An analysis of lone elderly parents and their children. Demography. 1999; 36:287–297. [PubMed: 10472494]

Pezzin, L.; Schone, B. Exploring the theoretical foundations of altruism: An analysis of the effects of divorce and remarriage on intergenerational living and care arrangements. In: Chopra, PK.; Ghosh, BN., editors. Gender and development. Addison, TX: Wisdom House Books; 2002. p. 93-118.

Pienta AM, Hayward MD, Jenkins KR. Health consequences of marriage for the retirement years. Journal of Family Issues. 2000; 21:559–586.

Plotnick, RD. Working paper. University of Washington; 2011. How does childlessness affect older Americans' health status and behavior?.

Ribar, DC. What do social scientists know about the benefits of marriage? A review of quantitative methodologies. IZA Discussion Paper No 998. 2004. Retrieved from http://ftp.iza.org/dp998.pdf/

Schmeeckle M, Giarrusso R, Feng D, Bengtson VL. What makes someone family? Adult children's perceptions of current and former stepparents. Journal of Marriage and Family. 2006; 68:595–610.

Shapiro A, Remle RC. Generational jeopardy? Parents' marital transitions and the provision of financial transfers to adult children. Journals of Gerontology: Series B: Psychological Sciences and Social Sciences. 2011; 66:99–108.

Silverstein M, Bengtson VL. Do close parent–child relations reduce the mortality risk of older parents? Journal of Health and Social Behavior. 1991; 32:382–395. [PubMed: 1765628]

Silverstein M, Conroy SJ, Wang H, Giarrusso R, Bengtson VL. Reciprocity in parent–child relations over the adult life course. Journals of Gerontology: Series B: Psychological Sciences and Social Sciences. 2002; 57:3–13.

Sweeney MM. Remarriage and stepfamilies: Strategic sites for family scholarship in the 21st century. Journal of Marriage and Family. 2010; 72:667–684.

Teachman, J.; Tedrow, L. The demography of stepfamilies in the United States. In: Pryor, J., editor. The international handbook of stepfamilies: Policy and practice in legal, research, and clinical environments. New York: Wiley; 2008. p. 3-29.

Temkin-Greener H, Bajorska A, Peterson DR, Kunitz SJ, Gross D, Williams TF, Mukamel DB. Social support and risk-adjusted mortality in a frail older population. Medical Care. 2004; 42:779–788. [PubMed: 15258480]

Thoits PA. Mechanisms linking social ties and support to physical and mental health. Journal of Health and Social Behavior. 2011; 52:145–161. [PubMed: 21673143]

Thomas PA. Trajectories of social engagement and limitations in late life. Journal of Health and Social Behavior. 2011; 52:430–443. [PubMed: 22144732]

Uchino BN. Social support and health: A review of physiological processes potentially underlying links to disease outcomes. Journal of Behavioral Medicine. 2006; 29:377–387. [PubMed: 16758315]

Umberson D. Family status and health behaviors: Social control as a dimension of social integration. Journal of Health and Social Behavior. 1987; 28:306–319. [PubMed: 3680922]

Umberson D. Gender, marital status and the social control of health behavior. Social Science & Medicine. 1992; 34:907–917. [PubMed: 1604380]

Umberson D, Crosnoe R, Reczek C. Social relationships and health behavior across life course. Annual Review of Sociology. 2010; 36:139–157.

Umberson D, Montez JK. Social relationships and health A flashpoint for health policy. Journal of Health and Social Behavior. 2010; 51(Suppl):S54–S66. [PubMed: 20943583]

Umberson D, Pudrovska T, Reczek C. Parenthood, childlessness, and well-being: A life course perspective. Journal of Marriage and Family. 2010; 72:612–629. [PubMed: 21869847]

Van Houtven CH, Norton EC. Informal care and health care use of older adults. Journal of Health Economics. 2004; 23:1159–1180. [PubMed: 15556241]

Wachter KW. Kinship resources for the elderly. Philosophical Transactions of the Royal Society of London: Series B: Biological Sciences. 1997; 352:1811–1817.

Wade TJ, Pevalin DJ. Marital transitions and mental health. Journal of Health and Social Behavior. 2004; 45:155–170. [PubMed: 15305757]

Waite LJ. Does marriage matter? Demography. 1995; 32:483–507. [PubMed: 8925942]

Williams K, Umberson D. Marital status, marital transitions, and health: A gendered life course perspective. Journal of Health and Social Behavior. 2004; 45:81–98. [PubMed: 15179909]

Zunzunegui M, Rodriguez-Laso A, Otero A, Pluijm S, Nikula S, Blumstein T, Jylhä M, Minicuci N, Deeg D. CLESA Working Group. Disability and social ties: Comparative findings of the CLESA study. European Journal of Ageing. 2005; 2:40–47.

Table 1

Variable Definitions and Summary Information, Overall and by Gender

		Distribution						
		Overall		Women		Men		p^a
Variable	**Definition**	***M* or %**	***SD***	***M* or %**	***SD***	***M* or %**	***SD***	
Incidence of disability, institutionalization, and mortality								
Developed physical disability[b]	= 1 if reported difficulty with ADLs or IADLs during the 10-year study period(conditional on not being disabled at study entry); 0 otherwise	45.3		47.8		42.1		<.001
Nursing home entry	= 1 if was admitted permanently to a nursing home over the study period; 0 otherwise	13.2		17.0		8.2		<.001
Mortality	= 1 if died over the study period; 0 otherwise	44.3		40.4		49.3		<.001
Marital status at study entry								
Divorced	= 1 if divorced at study entry; 0 otherwise	9.7		7.7		12.6		<.001
Widowed	=1 if widowed at study entry; 0 otherwise	30.6		43.8		13.2		
Married	= 1 if married at study entry; 0 otherwise (reference)	59.6		48.5		74.2		
Family structure at study entry								
Only stepchildren	= 1 if respondent has step children only; 0 otherwise	2.5		2.0		3.1		<.001
Blended family	= 1 if respondent has both biological and step children; 0 otherwise	8.3		7.7		9.7		
Only biological children	= 1 if respondent has biological children only; 0 otherwise (reference)	78.5		78.2		78.1		
No children	= 1 if respondent has no children; 0 otherwise.	10.7		12.2		9.1		
Family composition								
Number of daughters	Count of daughters	1.51	1.50	1.44	1.43	1.59	1.51	<.001
Number of sons	Count of sons	1.48	1.43	1.42	1.42	1.59	1.46	=.001
Demographic characteristics of elderly respondent								
Age	Respondent's age in years	73.9	6.6	74.5	7.0	73.6	6.2	<.001
Female	= 1 if female; 0 otherwise	56.8		100		100		
African American/Black	= 1 if race/ethnicity is African American/Black; 0 otherwise	12.8		13.8		11.6		=.010
Hispanic	= 1 if race/ethnicity is Hispanic; 0 otherwise	6.3		6.1		6.4		
Non-African American/Black, non- Hispanic	= 1 if respondent's race/ethnicity is non- African American/Black, non-Hispanic; 0 otherwise (reference)	80.9		80.1		82.0		
Education	Formal education in years	12.0	3.7	11.9	3.9	12.1	3.4	=.004

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		Distribution						
		Overall		Women		Men		p^a
Variable	**Definition**	***M* or %**	***SD***	***M* or %**	***SD***	***M* or %**	***SD***	
Physical functioning at study entry								
No disability	No ADLs (range: 0–6) or IADLs (range: 0–5)	76.2		72.2		78.3		<.001
IADLs only	Limitations with only IADLs	7.7		8.7		7.1		
Any ADLs	Limitations with at least one basic ADL	16.1		18.6		14.6		
Health status at study entry								
Cognitive functioning	= 1 if general cognition was "fair" or "poor"	5.9		6.7		5.3		=.002
Number of comorbidities	Number of major comorbidities	1.3	1.1	1.3	1.1	1.3	1.1	=.970
Economic status								
Income	Wages, Social Security, and pension income, in thousands	11.1	11.1	8.6	8.5	14.4	13.3	<.001
Net worth	Estimated (assets - debts), including home mortgage and all other financial assets and liabilities, in thousands	224.3	449.0	183.6	355.8	273.5	540.8	<.001

Note: Unless otherwise specified, summary statistics are based on the full sample of 11,481 elderly respondents, of whom 6,526 were women and 4,955 were men. ADLs = activities of daily living; IADLs = instrumental activities of daily living.

[a] *p* values denote statistical significance forthcoming from two-sided (t and χ^2) tests of differences in means and proportions between women and men.

[b] Means are based on the subsample of respondents who were not disabled at study entry.

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Table 2

Disability, Institutionalization, and Mortality: Gompertz Duration Model Hazard Ratio (HR) Estimates

	Disability				Nursing home entry				Mortality			
	Women		Men		Women		Men		Women		Men	
Variable	**HR**	***p***	**HR**	***p***	**HR**	***p***	**HR**	***p***	**HR**	***p***	**HR**	***p***
Family structure												
Only stepchildren	1.21	0.09	1.12	0.28	1.67	0.01	1.27	0.32	1.16	0.31	1.18	0.09
Blended family	0.88	0.08	1.02	0.76	1.10	0.48	1.22	0.23	0.83	0.06	1.12	0.09
No children	1.01	0.86	1.07	0.38	1.24	0.02	1.42	0.02	1.11	0.14	1.09	0.22
Family composition												
Number of daughters	1.01	0.55	0.99	0.86	0.91	0.00	1.01	0.85	0.98	0.50	0.97	0.11
Number of sons	1.02	0.19	0.99	0.73	0.99	0.62	0.95	0.19	0.98	0.41	0.97	0.06
Marital status at study entry												
Divorced	1.01	0.71	1.12	0.14	1.08	0.55	1.37	0.09	0.97	0.76	1.27	0.00
Widowed	1.10	0.22	1.03	0.50	1.24	0.01	1.45	0.00	1.04	0.50	1.08	0.15
Sociodemographic characteristics												
Age	1.89	0.00	1.48	0.00	1.90	0.00	1.78	0.00	1.98	0.00	1.95	0.00
African American/Black	1.19	0.00	1.12	0.05	0.77	0.01	0.91	0.51	1.02	0.75	1.02	0.78
Hispanic	1.11	0.18	1.04	0.65	0.53	0.00	0.68	0.08	0.82	0.04	0.92	0.33
Years of formal education	0.89	0.00	0.88	0.00	0.98	0.77	0.99	0.94	0.95	0.00	0.93	0.01
Physical functioning and health												
No disability					0.89	0.15	0.76	0.03	0.47	0.00	0.50	0.00
IADLs only					0.92	0.42	1.15	0.41	0.86	0.03	0.76	0.00
Poor cognitive functioning					1.11	0.00	1.17	0.00	1.04	0.05	1.06	0.00
Comorbidities	1.25	0.00	1.16	0.00	0.95	0.07	0.93	0.08	1.24	0.00	1.28	0.00
Economic status												
Net worth	1.00	0.02	1.01	0.02	1.00	0.00	1.00	0.01	0.98	0.01	0.99	0.00
Current income	1.00	0.16	1.00	0.01	1.00	0.12	1.00	0.51	1.00	0.96	0.99	0.00
χ^2	4,99		373		503		165		1,244		1,186	
n	1		4,024		6,526		4,955		6,526		4,955	

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Note: The reference category for family structure is "only biological children." The reference category for marital status is "married at study entry." The reference category for race/ethnicity is "non African-American/Black, non-Hispanic." The reference category for disability is "any ADL," that is, person reported having difficulty with at least one of the six basic activities of daily living. All models were estimated using a competing risk, Gompertz hazard specification. IADLs = instrumental activities of daily living.

Table 3

Effects of Family Type and Marital Status on Disability, Institutionalization, and Longevity, by Gender

Months to event for reference groups [in brackets] and percentage increase/decrease relative to reference group			
Variable	**Development of disability**	**Nursing home entry**	**Death**
Family type			
Male, only stepchildren	−6.3	−13.1	−14.0†
Male, blended family	−1.2	−10.7	−9.5†
Male, no children	−3.6	−18.8*	−7.9
Male, only biological children	[100.0]	[402.2]	[126.2]
Female, only stepchildren	−14.0†	−27.4*	−12.0
Female, blended family	9.8†	−5.3	16.1†
Female, no children	0.7	−12.0*	−6.7
Female, only biological children	[90.0]	[274.4]	[149.4]
Marital status			
Male, divorced	−6.1	−17.0†	−19.0†
Male, widowed	−2.9	−19.6†	−7.7
Male, married	[100.0]	[406.7]	[126.4]
Female, divorced	−5.5	−4.5	−5.2
Female, widowed	1.3	−11.9†	−5.8
Female, married	[90.1]	[286.5]	[154.0]

Note: All adjusted time-to-event estimates are based on models stratified by gender and control for respondents' health and functioning and other demographic and economic characteristics. Adjusted time to event represents the change associated with having the characteristic (e.g., having only stepchildren) versus not having the characteristic, relative to the relevant reference category. Reference categories for adjusted outcomes are shown as days to event; differences from each characteristic to its reference are shown as *percentage points* relative to the reference category. Italic entries indicate reference categories; numeric entries for reference categories represent adjusted time to event in absolute terms.

† $p \leq .10$.

* $p < .05$.