

Partner Caregiving in Older Cohabiting Couples

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Objectives. Despite the rapidly increasing prevalence of cohabitation among older adults, the caregiving literature has exclusively focused on formally married individuals. Extending prior work on intra-couple care, this study contrasts frail cohabitators' patterns of care receipt from a partner to that of frail spouses.

Methods. Using nationally representative panel data from the Health and Retirement Study (2000, 2002, 2004, and 2006), we estimate random effects cross-sectional times series models predicting frail cohabitators' likelihood of receiving partner care compared with their married counterparts'. Conditional on the receipt of intra-couple care, we also examine differences in marital and nonmarital partners' caregiving hours and caregiving involvement relative to other helpers.

Results. Net of sociodemographic, disability, and comorbidity factors, we find that cohabitators are less likely to receive partner care than married individuals. However, caregiving nonmarital partners provide as many hours of care as spouses while providing a substantially larger share of disabled respondents' care than marital partners.

Discussion. Cohabitation and marriage have distinct implications for older adults' patterns of partner care receipt. This study adds weight to a growing body of research emphasizing the importance of accounting for older adults' non-traditional union forms and of examining the ramifications of cohabitation for older adults' well-being.

Key Words: Caregiving—Disability—Intra-couple care—Older cohabitators.

MOST of the 12.5 million older Americans with personal care (activities of daily living [ADLs]) or routine care (instrumental activities of daily living [IADLs]) disabilities reside in the community and depend primarily on informal assistance from family members (National Center for Health Statistics, 2006; Wolff & Kasper, 2006). Consistent evidence indicates that married elderly persons with a disability benefit from more informal care than unmarried elderly persons, particularly those residing alone (Freedman, Aykan, Wolf, & Marcotte, 2004; Katz, Kabeto, & Langa, 2000; Spillman & Pezzin, 2000). Indeed, spouses are more likely to act as primary caregivers (Lima, Allen, Goldscheider, & Intrator, 2008; Spillman & Pezzin, 2000), provide more hours of care (Wolff & Kasper, 2006), and are less likely to relinquish their caregiving role (Seltzer & Li, 2000) than other informal helpers.

To date, the gerontological literature has focused on the informal care arrangements of formally married elderly individuals (e.g., Burton, Zdaniuk, Schulz, Jackson, & Hirsch, 2003; Feld, Dunkle, & Schroepfer, 2005; Feld, Dunkle, Schroepfer, & Shen, 2006; Lima et al., 2008; Spitze & Ward, 2000; Stoller & Cutler, 1992). Yet, older adults' partnership forms have become increasingly diverse (Calasanti & Kiecolt, 2007; Cooney & Dunne, 2001; Moorman, Booth, & Fingerman, 2006). In particular, a nascent literature documents a rising prevalence of heterosexual cohabitation during the middle and latter parts of the life course, mirroring the dramatic increases experienced at younger ages in recent decades (Brown, Bulanda, & Lee, 2005; Brown, Lee, & Bulanda, 2006; Calasanti & Kiecolt, 2007; Chevan, 1996;

Cooney & Dunne, 2001; King & Scott, 2005). Based on the 2000 Census, Brown and colleagues (2006) estimated that approximately 1.1 million Americans aged 51 years and older (1.49% of this age group) lived together, unmarried in an intimate heterosexual relationship. By 2008, this figure had doubled, reflecting a very rapid growth in cohabitation among older adults (Brown et al., 2006; U.S. Bureau of the Census, 2009). The share of older Americans potentially at risk of needing long-term care living in a cohabiting union is likely to continue rising strongly with the aging of the large baby boom cohorts (Brown et al., 2005). These cohorts were the first to experience substantial increases in cohabitation and are likely to be more favorably disposed toward nonmarital unions than the current elderly (De Jong Gierveld, 2004a; Thornton & Young-DeMarco, 2001). Moreover, although divorce rates have been relatively high among baby boomers, remarriage rates have decreased (Cooney & Dunne, 2001), portending strong increases in the number of older cohabitators (Brown et al., 2006).

This study extends prior research on intra-couple caregiving by systematically comparing frail cohabitators' patterns of care receipt from a partner to that of frail spouses (Brown et al., 2006; Moustgaard & Martikainen, 2009). We use nationally representative panel data from the Health and Retirement Study (HRS; Juster & Suzman, 1995) to contrast frail cohabitators' likelihood of receiving partner care to frail married individuals' likelihood of receiving spousal care. Furthermore, among elderly persons with a disability receiving partner or spousal care, we compare the total hours of partner care received and the extent to which spouses and cohabitators rely on

partner care relative with care from other helpers. In comparing older cohabitators' patterns of partner care receipt with that of older spouses, we pay particular attention to gender effects and to the role of marital history.

Given both current and expected increases in the share of late-life nonmarital unions, it is critical to understand whether the informal care receipt benefits associated with marriage extend to older cohabitators (Cooney & Dunne, 2001). A focus on older cohabitators' partner care receipt is important as an indicator of the nature of their unions but also because receipt of spousal care is negatively related to the use of formal long-term care (Freedman, 1996; Moustgaard & Martikainen, 2009; Noël-Miller, 2010b). Knowledge of older cohabitators' care receipt patterns may also help practitioners identify those adults who face the greatest challenges upon onset of old age disability.

Although cohabitation is typically a prelude to marriage at young ages (Smock, 2000), there is limited evidence that cohabitation functions as an alternative to marriage in older adults, providing the basis for long-lasting intimate relationships (Chevan, 1996; King & Scott, 2005). Indeed, older cohabitators are less likely to have future marriage intentions than younger cohabitators (King & Scott, 2005). Older cohabitators and married individuals also report remarkably similar relationship quality (Brown & Kawamura, 2010). In contrast, we argue that older cohabitators and married individuals with a disability are likely to differ in their reliance on care from a partner (Brown et al., 2005, 2006; Moustgaard & Martikainen, 2009). To formulate a framework for understanding the implications of cohabitation for nonmarital partners' likelihood of care provision and volume of care provided, we draw primarily on research that addresses differences in motivations for entering marital and nonmarital unions. In addition, variations between married individuals' and cohabitators' social context may result in differences in availability of alternative sources of informal care such as adult children, relatives, and friends (Katz et al., 2000; Noël-Miller, 2010b; Spitze & Ward, 2000). We review the literature on how older cohabitators fare on measures of social relationships and support relative to their married counterparts to develop hypotheses about differences in nonmarital and marital partners' relative caregiving involvement.

MOTIVATIONS FOR ENTERING NONMARITAL AND MARITAL UNIONS

Although marriage is typically based upon romantic attraction between two individuals, it also generally involves agreeing to a complex array of commitments toward one another (Johnson, Caughlin, & Huston, 1999). In particular, the moral obligation to provide care to a frail spouse has been described as one of the central tenants of the institution of marriage (Adams & Jones, 1997), which is often reinforced by the social and cultural sanctioning of matrimony

(Karlsson & Borell, 2004). In contrast, entry into a cohabiting union during the latter parts of the life course is thought to require a lesser commitment to predefined marital obligations as it does not involve an institutionalized promise of relationship permanence or the establishment of legal bonds (Brown et al., 2006; Moustgaard & Martikainen, 2009).

In addition, prior work has indicated that younger cohabitators fare lower on interpersonal aspects of commitment toward their partner than married individuals (Stanley, Whitton, & Markman, 2004). No study has examined personal dedication to a partner among older cohabiting adults. However, King and Scott (2005) provided evidence that older and younger cohabitators are equally likely to report that the lesser personal commitment required by cohabitation is important in opting for a nonmarital union. Furthermore, various measures of interpersonal commitment have been positively linked to intra-couple exchanges, such as caregiving, that forego immediate self-interest in favor of a partner's interest (Whitton, Stanley, & Markman, 2002).

Several researchers have noted that older adults, particularly women, may not be interested in entering a marital union (Brown et al., 2005; Chevan, 1996; Davidson, 2004; G. R. Hatch, 1995; Talbott, 1998). Talbott (1998) maintained that the high probability that they will need to provide care for an infirm husband fuels older widows' lack of interest in remarrying. Thus, flexible union forms such as cohabitation may represent more attractive modes of expressing and obtaining long-term intimacy as they skirt the loss of autonomy and personal sacrifices associated with partner caregiving (De Jong Gierveld, 2004a). This is consistent with prior suggestions that older adults might opt for cohabitation rather than marriage because it affords them greater independence (De Jong Gierveld, 2004b; King & Scott, 2005), allows them to avoid being locked into traditional marriage roles (Lopata, 1996), and protects them against gendered duties implicit in the marriage contract (Karlsson & Borell, 2004).

SOCIAL SUPPORT AMONG MARITAL AND NONMARITAL PARTNERS

Spouses are typically sole care providers and receive fewer hours of assistance with their caregiving tasks than other helpers (Wolff & Kasper, 2006). Nevertheless, roughly one third of all spousal caregivers receives assistance from secondary care providers, primarily adult children but also relatives and friends (Boaz & Hu, 1997; Wolff & Kasper, 2006). Despite limited empirical evidence, relative to marriage, old age cohabitation likely has negative implications for the receipt of social support and informal care from outside the couple. According to social capital theory, supportive family relationships are a form of capital, acquired and maintained through kin's investments in varying levels of contact and exchanges (Coleman, 1990; Furstenberg, 2005). Similarly to other forms of capital, consideration of uncertainty regarding

future benefits determines investments in supportive family relations, with greater uncertainty being associated with fewer investments (Portes, 1998). Given the relative ease of dissolving a cohabiting union, uncertainty regarding future benefits of investing in family relationships is greater in cohabiting than in marital unions (Eggebeen, 2005). The uncertainty hypothesis contends that cohabitators are thus less likely to experience intra-family contact and to benefit from kin support than their married counterparts (Hogerbrugge & Dykstra, 2009). Consistent with this perspective, prior work indicates that cohabitators are less strongly imbedded in family networks than married persons (Eggebeen, 2005; Hogerbrugge & Dykstra, 2009). Similarly, De Jong Gierveld and Peeters (2003) found that, on average, older adults in cohabiting unions have at least one weekly contact with 1.8 children as compared with 3.1 children for married older adults. They also reported notably lower intergenerational relationship quality among older cohabitators relative to older married persons.

Compared with older married individuals, older cohabitators do not fare well in terms of nonkin social relations either. For instance, they are significantly less likely than their married counterparts to report having friends in their neighborhood (Brown et al., 2006). Thus, prior research suggests that older cohabitators are less likely to receive social support from outside the couple than married individuals (Stets, 1991).

GENDER AND INTRA-COUPLE CAREGIVING

Husbands benefit from more spousal care than wives (Katz et al., 2000; Noël-Miller, 2010a; Spitze & Ward, 2000), and wives are more likely than husbands to serve as primary caregivers (Allen, Goldscheider, & Ciambone, 1999; Lima et al., 2008). Furthermore, in compensating for their relatively lower levels of spousal care, older wives with a disability are more likely to receive nonspousal care in addition to spousal assistance than older husbands with a disability (Feld et al., 2005, 2006; Noël-Miller, 2010a). In particular, frail wives receive a notably greater proportion of their care from adult children than frail husbands (Katz et al., 2000; Noël-Miller, 2010b). Two broad theoretical frameworks have been invoked to explain these gender differences. First, the specialization-of-tasks hypothesis posits that husbands and wives specialize in different tasks that maximize the well-being of the family as a whole (Finley, 1989). Because males typically earn higher wages on the labor market, they specialize in working outside the home. Wives typically bear a greater responsibility for household duties and family care (Spitze & Ward, 2000; Stoller & Cutler, 1992), thus rendering husbands more likely to receive spousal care than wives. In contrast, the gender role socialization perspective argues that nurturance is a more central component of women's socialization process, resulting in wives' greater feelings of obligation to care for a

frail spouse (Walker, 1992). Although no study has examined gender roles in older cohabiting couples, research on younger cohabitators supports the specialization-of-tasks perspective. Young cohabitators profess somewhat more gender-egalitarian attitudes than young married individuals (Clarkberg, Stolzenberg, & Waite, 1995). However, studies contrasting married persons' and cohabitators' enactment of gender attitudes show that women perform the vast majority of household work in both contexts (Gupta, 1999; South & Spitze, 1994). In addition, there is some evidence that the division of labor assigning breadwinning to men and homemaking to women is similarly important among marital and nonmarital couples (Sanchez, Manning, & Smock, 1998; Smock, 2000). Taken together, these studies suggest the existence of gender effects, whereby older cohabiting men benefit from partner care to a greater extent than their female counterparts.

MARITAL HISTORY

Although living in a long-term marriage after mid-life is projected to become less common (Calasanti & Kiecolt, 2007; Cooney & Dunne, 2001; Moorman et al., 2006), most formally married older adults are continuously married. In contrast, nearly all older cohabitators have prior marital experience. Brown and colleagues (2006) reported that an overwhelming majority of older cohabitators are divorced (71%) or widowed (18%) and that only roughly 1 in 10 older cohabitators have never been married. Consequently, in addition to overall comparisons of intra-couple care dynamics in cohabiting and married unions, our analyses emphasize comparisons between formerly married individuals living in an informal union and formally remarried persons. To the extent that continuously married spouses differ from remarried spouses on dimensions relevant to intra-couple caregiving, union type effects may differ according to the distribution of respondents with and without marital history in the married comparison group. Although there exists no direct evidence on differences in care provision between married and remarried spouses, there does exist some indirect evidence on interpersonal relations in first and subsequent unions. Some researchers have suggested that, due to attrition through divorce or separation, continuously married older couples represent a select group of spouses with more harmonious and committed interpersonal relations (L. R. Hatch & Bulcroft, 2004). Others have proposed that remarried spouses are required to contend with issues surrounding stepchildren and former spouses, which in turn diminishes their relationship quality relative to first marriages (Skinner, Bahr, Crane, & Call, 2002). Yet, most empirical evidence indicates that there are at best minimal differences in interpersonal relations between spouses in the first and higher order marriages (Vemer, Coleman, Ganong, & Cooper, 1989; White & Booth, 1985). Therefore, we expected little difference in the effect of cohabitation on

both the likelihood of partner care receipt and the volume of partner care according to whether the married comparison group encompasses all married respondents or only remarried respondents.

In contrast, with regard to their ability to rely on personal care from outside the couple, older remarried spouses are likely to differ strongly from continuously married spouses and to resemble older cohabitators. Although evidence on the implications of widowhood for intergenerational support is mixed (Aquilino, 1994; Bulcroft & Bulcroft, 1991; Eggebeen, 1992; Roan & Raley, 1996), particularly among fathers, parental divorce strongly reduces the likelihood of filial care provision relative to parents in intact marriages (Bulcroft & Bulcroft, 1991; Lin, 2008). Furthermore, repartnering is thought to further weaken the quality of parent-child relationships (Furstenberg, Hoffman, & Shrestha, 1995; Kalmijn, 2007).

HYPOTHESES

The foregoing leads us to postulate the following hypotheses:

Hypothesis 1: Older cohabitators with a disability are less likely to receive care from a partner than older married individuals are to receive care from a spouse.

Hypothesis 2: Conditional on receiving any care from a partner, frail cohabitators receive fewer hours of partner care than their married counterparts.

Hypothesis 3: Conditional on receiving any care from a partner, cohabitators with a disability receive a greater proportion of their care from their partner than married elderly persons receive from their spouse.

Hypothesis 4: Compared with frail older cohabiting men, older cohabiting women are less likely to receive care from their partner and, conditional on receiving any partner care, receive fewer hours of care and a smaller proportion of their care from their partner.

Hypothesis 5: Older disabled cohabitators with prior marital history are less likely to receive care from a partner than older disabled remarried individuals are to receive care from a spouse.

Hypothesis 6: Conditional on receiving partner care, older disabled cohabitators with prior marital history receive fewer hours of partner care than their remarried counterparts.

Hypothesis 7: Conditional on receiving partner care, older disabled cohabitators with prior marital history receive a similar proportion of their care from their partner as remarried elderly persons receive from their spouse.

METHODS

Data Source and Study Sample

The data come from the Health and Retirement Study (HRS), an ongoing biennial panel study that began in 1992

and is nationally representative of the noninstitutionalized population (Juster & Suzman, 1995). The HRS is designed to examine the health and retirement decisions of older Americans and to investigate aging families' responses to health declines occurring in mid-to-late life. The original HRS sample comprised 12,652 respondents who were members of the 1931–1941 birth cohorts and their spouses or partners (regardless of age). Additional birth cohorts were added in 1998 and 2004. The stratified multistage area probability design included oversampling of African Americans, Hispanics, and Floridians. When respondents were unable or unwilling to respond to interviewers, information was provided by a proxy (usually a spouse or partner).

In order to achieve sufficient sample sizes of older cohabitators, data were pooled from Waves 5–8 (2000, 2002, 2004, and 2006) of the HRS. These waves were selected based on changes made to the data collection instruments over time. Specifically, not until 2000 did the survey begin collecting information on the volume of care provided by spouses and partners. We used two separate analytical samples. For the first sample, we initially identified married and cohabiting individuals within each HRS wave (for a total of 17,018 respondents). A further intra-wave restriction retained the 5,179 respondents who reported difficulty performing at least one ADL (walking, dressing, eating, bathing, toileting, and transferring in and out of bed) or IADL (managing money, preparing meals, getting groceries, using the telephone, and taking medications). We excluded 269 respondents because of missing data on either of the variables included in the multivariate models and 24 respondents who were cohabiting at one wave and married at another. The resulting total sample size of married and cohabiting respondents with a disability was 4,886 (95.4% married and 4.6% cohabiting). The second sample was obtained by retaining the subset of spouses and cohabitators who reported receiving any spousal or partner care from among these respondents (2,708 respondents). We excluded 164 respondents with missing data on the number of spousal and/or nonspousal hours of care, for a final sample size of 2,544 respondents.

Because difficulty performing ADLs or IADLs could have extended over several HRS waves, the same respondent could appear up to four times in the pooled samples. In the analytical sample of married and cohabiting individuals with a disability, most respondents were present in a single wave (55%), but 25% of respondents appeared in two waves and 20% were present in three or four waves. Additional sample inclusion conditions as well as their implications for sample size are noted below.

Outcome Variables

This study examined three outcomes. The first outcome indicates whether disabled respondents received any care from a marital or nonmarital partner. Furthermore, among

the sub-sample of respondents who received marital or non-marital partner care, the second outcome is a measure of partners' or spouses' total care hours (logged). Finally, conditional on receiving intra-couple care, the third outcome captures a partner's or a spouse's relative participation in the disabled respondent's care. In each HRS wave, respondents with a disability who obtained help with an ADL or an IADL could name multiple caregivers and reported their relationship to each helper. Nonspousal caregivers include a variety of helpers, primarily adult children and their spouses but also other relatives and nonkin. In addition, respondents provided the number of days in the month preceding the interview during which they had received help from each caregiver and the approximate number of daily hours of assistance. In a few cases, respondents reported the number of days of help received in the previous week. Weekly values were translated into monthly values by multiplying them by 4.33, the average number of weeks in a month. Similarly, when respondents reported receiving assistance every day of the month, they were considered to have received assistance 30.42 days, the average number of days in a month. Wave-specific monthly hours of help were then calculated for each helper as their number of monthly days of help multiplied by their daily hours of care. A spouse's or cohabiting partner's relative participation in the respondent's care was derived using the following formula proposed by [Sorensen and McLanahan \(1987\)](#):

$$\begin{aligned} \text{Spouse or partner's relative care hours} = & \\ & [(\text{spouse or partner care hours} / \text{total care hours}) \\ & - (\text{non-spouse or non-partner care hours} / \text{total care hours})] \times 100 \end{aligned}$$

Possible scores were strictly greater than -100 and less than or equal to 100. Larger scores represent a partner's greater contribution to their spouse's or cohabiting partner's care, with a score of 100 attributed to sole caregivers.

Independent Variables

Union type.—The primary independent variable of interest is a dichotomous indicator of union type (1 = cohabiting, 0 = married). The HRS defines cohabitation as living with a partner who is not the respondent's spouse. This measure has been used in prior published studies of older cohabitators (e.g., [Brown et al., 2005, 2006](#)). Lending support to the HRS measure's validity as an indicator of cohabitation at older ages, [Brown and colleagues \(2006\)](#) reported that proportions cohabiting based on the HRS measure generally match those derived from the 2000 U.S. Census.

Other respondent characteristics.—The models include a number of variables reflecting older frail individuals' preferences, needs, and care availability previously shown to affect care receipt. These covariates include gender ([Katz et al., 2000](#); [Noël-Miller, 2010a](#)), age ([Lima et al., 2008](#)), race

([Wallace, Levy-Storms, Kington, & Andersen, 1998](#)), and current employment status ([Lima et al., 2008](#)). Two dummy variables represent educational attainment ([Kemper, 1992](#)): receipt of a high school diploma or completion of an equivalency test (General Educational Development test) and receipt of a college degree or higher. Prior research has suggested that later life cohabitation may be selective of individuals in romantic relationships who lack the economic well-being necessary for marriage ([Brown et al., 2006](#)) or who seek financial advantages in regards to taxes, pensions, or Social Security benefits ([King & Scott, 2005](#); [Lopata, 1996](#)). Therefore, our models include a measure of wealth, classified as low (reference), medium, and high on the basis of the respondent's household net worth (total assets and home equity) thirddile derived from the entire sample in each HRS wave ([Freedman et al., 2004](#); [Lima et al., 2008](#)). Disability severity was measured as the respondent's count of ADL (range = 0–6) and IADL (range = 0–5) limitations. Several variables served as further measures of disability and comorbidity ([Lima et al., 2008](#)). Following [Walsh, Wu, Mitchell, and Berkman \(2003\)](#), cognitive function was defined as low, moderate, and high (reference). For self-respondents, cognitive status was based on the Telephone Interview for Cognitive Status, a validated cognitive screening instrument designed specifically for population studies ([Herzog & Wallace, 1997](#)). When a direct interview could not be obtained, a proxy's assessments of the respondent's memory, judgment abilities, organizational skills, propensity to get lost in familiar places, and tendency to wander off were used ([Langa et al., 2001](#)). The poor health variable was coded as 1 for respondents who rated their health as fair or poor (rather than excellent, very good, or good). The respondent's number of hospital stays in the two years preceding the interview was included as an additional indirect indicator of poor health ([Lima et al., 2008](#)). We controlled for the respondent's number of children (including stepchildren) since they represent a potential alternative source of informal care ([Boaz & Hu, 1997](#); [Katz et al., 2000](#); [Noël-Miller, 2010b](#)). We also accounted for respondents' own provision of spousal or partner care as it may elicit reciprocal assistance from marital and nonmarital partners ([Ingersoll-Dayton & Antonucci, 1988](#)) and we included a dummy indicator for proxy interviews. Finally, respondents were classified as previously married or not (i.e., never-married cohabiting partner or continuously married spouse) based on their reported total number of marriages ([Brown et al., 2006](#)).

Cohabiting partner or spousal characteristics.—Since the HRS interviewed both respondents and their spouses or cohabiting partners, it was possible to account for marital and nonmarital partners' characteristics that may influence their ability to provide care ([Feld et al., 2005, 2006](#)). The models include measures of cohabiting partners' or spouses' age, cognitive function, number of ADL and IADL disabilities, poor or fair health, and recent hospital use. In addition,

because competing obligations in the labor force restrict spouses' care provision (Lima et al., 2008), the models control for marital and nonmarital partners' employment status.

Analytic Strategy

Because we estimated models for three dependent variables with distinct distributional attributes, we utilized a different modeling approach for each. We used logistic regression to model the likelihood of receiving partner or spousal care. For the total number of care hours (logged), a linear model was employed. Owing to the substantial proportion of caregiving spouses and cohabiting partners who were sole caregivers (74.0%), the distribution of marital and nonmarital partners' relative care contribution scores exhibited heaping at the 100 value (Wolff & Kasper, 2006). Following prior published studies in the caregiving literature (e.g., Noël-Miller, 2010a; Wolf, Freedman, & Soldo, 1997), the issue of skewness in the measure of spouses' and cohabiting partners' relative care contributions was addressed by estimating a Tobit regression with censoring at the 100 value. Under circumstances where the assumption of normality of the outcome variable is violated due to clustering at a given value, the Tobit model produces consistent estimates of coefficients and standard errors (Amemiya, 1984; Greene, 2008). Standard errors were further adjusted for nonindependence due to within-respondent repeated observations by estimating the random effects cross-sectional time-series variants of the logistic, linear, and Tobit models. The random effects model has the advantage of allowing for estimates of time-invariant independent variables such as union type and of accommodating data with a varying number of time points across respondents. In particular, we modeled respondent i 's outcome variables at time t , Y_{it} , as:

$$Y_{it} = \alpha_i + \beta_0 X_i + \beta_1 X_{it} + \beta_2 T_2 + \beta_3 T_3 + \beta_4 T_4 + v_i + \varepsilon_{it}, \quad (1)$$

where β_0 and β_1 represent the effects of the time-invariant independent variables (X_i) and time-varying independent variables (X_{it}), respectively, on the dependent variable. The variables T_2 , T_3 , and T_4 are dummy variables indicating data from the 2002 ($t = 2$), 2004 ($t = 3$), and 2006 ($t = 4$) waves (reference is the 2000 wave), respectively. The v_i error term is a measure of unobserved variation between individuals, and ε_{it} represents unobserved within-person heterogeneity. The random effects estimator relies on cross-sectional information reflected in the changes between individuals and, when available, time-series information reflected in the changes within subjects over time. As such, coefficients on time-varying variables (β_1) represent the average effect on the dependent variable associated with a one unit change across time and between respondents in the independent variable. By contrast, estimation of coefficients on time-invariant variables (β_0) relies exclusively on between-subject variance. Therefore, they represent changes in the outcome

variable associated with a between-subject unit increase in the independent variable. Due to its complex sample design and resulting varying probabilities of selection, the HRS is not self-weighting. Therefore, both descriptive and multivariate analyses were corrected for design effects using weights provided by the HRS. Results based on complete case analysis reported here were compared with results based on multiple imputation (Allison, 2002). We found strong similarity in the direction, magnitude, and significance levels of model coefficients, indicating that our findings are robust to listwise deletion.

RESULTS

Table 1 shows descriptive statistics for the full sample of married individuals and cohabitators with a disability. The number of observations at the bottom of the table refers to the total number of times respondents were observed. Consistent with prior reports (Brown et al., 2006), sampled cohabitators were twice as likely to be non-White, significantly younger, and less likely to have earned a college degree or higher than married individuals. Roughly 82% of sampled cohabitators had been previously married as compared with approximately 30% of spouses. The vast majority of both remarried spouses and cohabitators with prior marital history were divorced. Although cohabitators had a greater likelihood of being employed, they were almost twice as likely as married individuals to belong to the lowest net worth thirdtile. In general, older cohabitators and married individuals reported comparable numbers of disabilities and hospital stays, but cohabitators were more likely to be in poor or fair health and had lower cognitive function. By and large, frail cohabitators' partners were younger, were in poorer health, and had lower cognitive function than frail married individuals' spouses. Moreover, frail cohabitators' partners were more likely to be employed than frail married individuals' spouses.

Of primary interest to this study, is the finding that the share of all sampled cohabitators with a disability receiving any partner care (46.1%) was notably and significantly smaller than that of married respondents receiving any spousal assistance (53.6%). Furthermore, based on the subsample of respondents with a disability receiving any spousal or partner ADL/IADL care, Table 1 presents differences in volume of received partner care and in relative reliance on partner care across union types. These descriptive statistics suggest that, on average, cohabiting partners provide a comparable number of caregiving hours as spouses. In addition, the mean partner care contribution score is slightly larger among cohabitators than among married individuals. Although these estimates suggest that cohabitators receive a greater proportion of their care from their partner than spouses, we failed to find significant differences between the care contribution scores across union types in the descriptive analysis.

Table 1. Sample Characteristics by Union Type, Health and Retirement Study 2000–2006^a

	Married		Cohabiting	
Own characteristics				
Received partner/spousal care	53.6		46.1*	
Partner/spousal care hours (logged) ^b	3.8	(1.7)	3.7	(1.6)
Partner/spousal care contribution score ^{bc}	82.8	(39.6)	83.8	(41.0)
Marital history				
Never married	—		17.6	
Continuously married	69.7		—	
Previously married	30.3		82.4*	
Male	50.9		47.3	
Race				
White	81.9		63.0*	
Black	13.6		27.6*	
Other	4.5		9.4*	
Education				
High school diploma/equivalency test	48.7		46.1	
College degree or higher	16.8		10.9*	
Age	69.4	(10.7)	61.4*	(11.2)
Disability severity				
Number of ADLs	1.6	(1.6)	1.6	(1.5)
Number of IADLs	1.2	(1.4)	0.9	(1.1)*
Poor health	62.4		69.4*	
Cognitive function				
High	14.9		10.6*	
Moderate	60.7		53.0*	
Low	24.4		36.4*	
Number of hospital stays	0.94	(2.3)	0.83	(1.5)
Number of children	3.6	(2.4)	4.4	(3.0)*
Employed	17.0		22.4*	
Net worth thirdtile				
Low	35.9		61.5*	
Middle	34.0		25.8*	
High	30.1		12.7*	
Partner/spouse provider of care	13.3		16.1	
Proxy interview	17.7		6.1*	
Partner/spouse characteristics				
Age	68.9	(10.6)	61.4	(10.4)*
Number of ADLs	0.6	(1.3)	0.6	(1.3)
Number of IADLs	0.4	(1.0)	0.3	(0.8)
Poor health	37.9		44.5*	
Cognitive function				
High	19.4		11.8*	
Moderate	62.2		54.6*	
Low	18.4		33.6*	
Number of hospital stays	0.5	(1.2)	0.5	(1.0)
Employed	28.8		41.2*	
Number of respondents	4,663		223	
Number of observations	8,102		330	

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

^aPercentages shown for dummy variables; means shown for continuous variables; standard deviations are in parenthesis.

^bBased on the subsample of respondents receiving partner/spouse care.

^cThe care contribution score ranges from -99.9 to 100, with larger scores indicating greater spouse/partner participation in the frail respondent's care.

*Significant difference between married and cohabiting respondents at $p \leq 0.01$.

Table 2 reports results of multivariate analyses testing the central hypotheses of variations in the likelihood, volume, and relative contribution of partner care across union types based on the full samples of partnered respondents

(Hypotheses 1, 2, and 3). Model 1 examines the effect of union type on the likelihood of receiving care from a marital or nonmarital partner. The regression results generally support *Hypothesis 1*. Net of sociodemographic, disability, and comorbidity factors, cohabitation is associated with a relatively strong reduction in the likelihood of receiving partner care relative to marriage. Overall, cohabitators' odds of receiving care from a partner are roughly half [$\exp(-.586) = 0.56$] those of spouses. In most cases, the covariates in Model 1 accorded with past research. The likelihood of intra-couple care receipt increased with greater counts of ADL and IADL disability, poor health, male gender, and age. Conversely, the odds of receiving marital or nonmarital assistance fell with increased numbers of children and employment. We found a notably large positive effect of frail respondents' own provision of partner care, suggesting that marital and nonmarital partners reciprocate for assistance they receive. A significant number of covariates capturing respondents' cohabiting partners' or spouses' ability to provide care reached statistical significance. In particular, older and more severely disabled cohabiting partners and spouses had reduced odds of being caregivers. In addition, we find evidence that marital and nonmarital partners' employment is associated with a reduced likelihood of care provision.

Model 2 (Table 2) reports results from analyses predicting spouses and cohabiting partners' total caregiving hours (logged) based on the sample of respondents with a disability who received any care from a spouse or cohabiting partner. The nonsignificant coefficient on the union status variable suggests that cohabitation is not related to reductions in the volume of care provided by caregiving partners, thereby leading us to reject *Hypothesis 2*. Finally, Model 3 (Table 2) examines *Hypothesis 3*, predicting that older cohabitators with a disability who receive any partner care rely more heavily on intra-couple care than their married counterparts. The cohabiting variable exhibits a positive influence on the relative care contribution score (coefficient = 33.3, $p \leq 0.05$), indicating that, conditional on receiving partner care, cohabitators receive a larger proportion of their care from their partners than formally married individuals. The size of the effect of cohabitation on a partner's caregiving involvement relative to other helpers is fairly large. Indeed, its magnitude is roughly three fourths that of the coefficient for being male, a central determinant of frail older persons' relative reliance on intra-couple care (Feld et al., 2005, 2006; Katz et al., 2000; Noël-Miller, 2010a, 2010b).

In Table 2, the covariates' effects in Models 2 and 3 were generally similar to those in Model 1. A notable exception was the effect of variables measuring frail respondents and their spouses' or partners' comorbidity. In particular, respondents' lower cognitive function was related to reduced marital and nonmarital partner caregiving hours and caregiving involvement. Frail respondents' number of hospital stays was positively linked to caregiving volume but negatively

Table 2. Pooled Times Series Estimates of the Effect of Union Type on the Receipt of Intra-couple Care by Cohabiting Partners/Spouses, Health and Retirement Study 2000–2006

	Model 1 ^a		Model 2 ^b		Model 3 ^c	
	Any partner/spousal care		Partner/spousal care hours (logged)		Partner/spouse relative care contribution	
Own characteristics						
Cohabiting (ref. Married)	-0.586**	(0.216)	0.089	(0.141)	33.3*	(14.3)
Male	0.251**	(0.098)	-0.098	(0.064)	42.5**	(5.6)
Race (ref. White)						
Black	-0.068	(0.150)	-0.127	(0.082)	-29.1**	(7.9)
Other	-0.469*	(0.213)	-0.032	(0.129)	-36.3**	(10.9)
Education						
High school diploma/equivalency test	0.009	(0.103)	0.046	(0.062)	12.0*	(5.7)
College degree or higher	-0.151	(0.137)	0.052	(0.089)	-9.3	(7.7)
Age	0.019*	(0.008)	0.014**	(0.005)	-0.1	(0.5)
Disability severity						
Number of ADLs ^d	0.244**	(0.032)	0.156**	(0.015)	-13.3**	(1.3)
Number of IADLs ^d	1.534**	(0.060)	0.351**	(0.021)	-15.8**	(1.8)
Poor health	0.493**	(0.084)	0.219**	(0.056)	-3.0	(5.2)
Cognitive function (ref. High)						
Moderate	0.080	(0.100)	-0.178**	(0.058)	-9.9*	(5.1)
Low	0.003	(0.144)	-0.288**	(0.089)	-9.4	(8.2)
Number of hospital stays	0.017	(0.018)	0.065**	(0.010)	-1.9*	(0.9)
Number of children	-0.055**	(0.019)	-0.006	(0.011)	-2.6*	(1.1)
Employed	-0.805**	(0.108)	-0.505**	(0.084)	-0.7	(7.7)
Net worth thirdtile (ref. Low)						
Middle	0.119	(0.101)	-0.098	(0.061)	14.5**	(5.4)
High	-0.232*	(0.114)	-0.233**	(0.073)	6.3	(6.4)
Partner/spouse provider of care	0.968**	(0.150)	0.117	(0.106)	-4.8	(8.3)
Proxy interview	0.515**	(0.143)	0.220**	(0.071)	-1.1	(6.4)
Spouse/partner characteristics						
Age	-0.029**	(0.008)	-0.001	(0.005)	0.1	(0.4)
Number of ADLs ^d	-0.295**	(0.048)	-0.080*	(0.033)	-6.4**	(2.6)
Number of IADLs ^d	-0.940**	(0.070)	-0.178**	(0.048)	-16.7**	(3.8)
Poor health	-0.129	(0.093)	-0.088	(0.057)	-5.3	(5.1)
Cognitive function (ref. High)						
Moderate	0.056	(0.105)	0.044	(0.068)	1.9	(5.8)
Low	-0.095	(0.133)	-0.006	(0.086)	9.4	(7.6)
Number of hospital stays	-0.035	(0.037)	-0.052*	(0.025)	-5.2**	(2.0)
Employed	-0.211*	(0.099)	-0.323**	(0.064)	-18.5**	(5.6)
Year (ref. 2000)						
Data from 2002	0.147	(0.101)	-0.054	(0.062)	-5.4	(5.7)
Data from 2004	0.230*	(0.100)	0.037	(0.062)	-7.3	(5.7)
Data from 2006	0.184†	(0.101)	0.005	(0.063)	-15.4**	(5.7)
Constant	-0.759*	(0.391)	2.266**	(0.248)	242.4**	(21.7)
Chi-square	848.3**		1335.7**		478.0**	
R ²	—		.281		—	
Number of respondents	4,886		2,544		2,544	
Number of observations	8,432		3,877		3,877	

Notes: Parameter estimates derived from random effects cross-sectional time-series models. Standard errors are in parenthesis. ADL = activities of daily living; IADL = instrumental activities of daily living.

^aLogistic regression estimates based on the sample of respondents with a disability.

^bLinear regression estimates based on the sample of respondents with a disability who received any partner/spousal care.

^cTobit regression estimates based on the sample of respondents with a disability who received any partner/spousal care.

^dADL: Activities of Daily Living; IADL: Instrumental Activities of Daily Living.

Significance: † $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$.

associated with the care contribution score. Care-providing marital and nonmarital partners' own hospital use was associated with them providing fewer care hours and a smaller share of respondent's care.

In additional models (not shown, but available upon request), we examined gender variations in the effect of cohabitation on patterns of partner care receipt (*Hypothesis 4*)

by adding an interaction term between the cohabitation and male variables to the models reported in Table 2. Regardless of the outcome variable considered, the interaction term was not significant. Thus, we did not find any evidence in support of *Hypothesis 4* predicting that relative to cohabiting men, cohabiting women are less likely to receive partner care and, conditional on receiving any partner care, receive

Table 3. Pooled Times Series Estimates of the Effect of Union Type on the Receipt of Intra-Couple Care by Cohabiting Partners/Spouses Amongst Previously Married Respondents, Health and Retirement Study 2000–2006

	Model 1 ^a		Model 2 ^b		Model 3 ^c	
	Any partner/spousal care		Partner/spousal care hours (logged)		Partner/spouse relative care contribution	
Own characteristics						
Previously married cohabitor (ref. Remarried)	-0.731**	(0.242)	0.013	(0.161)	22.7	(16.1)
Male	0.263	(0.164)	-0.102	(0.107)	49.2**	(9.9)
Race (ref. White)						
Black	0.082	(0.243)	-0.152	(0.132)	-32.8**	(12.7)
Other	-0.068	(0.370)	-0.330	(0.211)	-37.9*	(18.3)
Education						
High school diploma/equivalency test	-0.161	(0.172)	-0.082	(0.106)	3.2	(9.8)
College degree or higher	-0.088	(0.239)	-0.245	(0.156)	-20.0	(13.8)
Age	0.009	(0.011)	0.011 [†]	(0.006)	-0.1	(0.6)
Disability severity						
Number of ADLs ^d	0.241**	(0.054)	0.145**	(0.027)	-11.4**	(2.4)
Number of IADLs ^d	1.492**	(0.105)	0.391**	(0.037)	-18.6**	(3.3)
Poor health	0.622**	(0.151)	0.117	(0.103)	5.6	(10.0)
Cognitive function (ref. High)						
Moderate	-0.223	(0.161)	-0.177 [†]	(0.099)	-10.2	(8.8)
Low	-0.198	(0.258)	-0.146	(0.162)	-7.8	(15.5)
Number of hospital stays	0.049	(0.040)	0.079**	(0.022)	-4.5**	(1.8)
Number of children	-0.045	(0.028)	-0.001	(0.016)	-4.3**	(1.6)
Employed	-0.850**	(0.181)	-0.394**	(0.138)	-8.4	(13.0)
Net worth thirdtile (ref. Low)						
Middle	0.030	(0.166)	-0.279**	(0.102)	14.3	(9.4)
High	-0.257	(0.199)	-0.223 [†]	(0.131)	0.0	(12.2)
Partner/spouse provider of care	0.838**	(0.243)	0.010	(0.177)	3.9	(13.8)
Proxy interview	1.143**	(0.273)	0.176	(0.129)	-13.2	(11.4)
Spouse/partner characteristics						
Age	-0.023*	(0.010)	-0.005	(0.007)	1.3*	(0.6)
Number of ADLs ^d	-0.304**	(0.081)	-0.092 [†]	(0.055)	0.7	(4.4)
Number of IADLs ^d	-0.758**	(0.117)	-0.148 [†]	(0.082)	-22.9**	(6.9)
Poor health	0.006	(0.160)	-0.149	(0.101)	-9.3	(9.3)
Cognitive function (ref. High)						
Moderate	0.001	(0.171)	-0.140	(0.110)	-2.7	(9.4)
Low	-0.278	(0.230)	-0.136	(0.148)	12.7	(13.8)
Number of hospital stays	0.010	(0.062)	-0.045	(0.040)	-2.8	(3.1)
Employed	-0.354*	(0.167)	-0.366**	(0.104)	-1.4	(9.5)
Year (ref. 2000)						
Data from 2002	0.132	(0.179)	0.001	(0.114)	19.1 [†]	(10.5)
Data from 2004	0.425*	(0.174)	-0.015	(0.111)	1.8	(9.9)
Data from 2006	0.410*	(0.175)	-0.135	(0.113)	-6.5	(10.1)
Constant	-0.274	(0.643)	3.047**	(0.405)	169.7**	(35.8)
Chi-square	276.5**		444.6**		155.8**	
R ²	—		.272		—	
Number of respondents	1,618		882		882	
Number of observations	2,729		1,344		1,344	

Notes: Parameter estimates derived from random effects cross-sectional time-series models. Standard errors are in parenthesis. ADL = activities of daily living; IADL = instrumental activities of daily living.

^aLogistic regression estimates based on the sample of previously married respondents with a disability.

^bLinear regression estimates based on the sample of previously married respondents with a disability who received any partner/spousal care.

^cTobit regression estimates based on the sample of previously married respondents with a disability who received any partner/spousal care.

^dADL: Activities of Daily Living; IADL: Instrumental Activities of Daily Living.

Significance: [†] $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$.

fewer hours of partner care, and a smaller proportion of their care from a partner.

Given that nearly all older cohabitators have been previously divorced or widowed, the remaining analyses explore the significance of union type among the subset of remarried respondents and cohabiting respondents who were previously married (Table 3). The exclusion of continuously

married persons and never-married cohabitators resulted in samples of 1,618 partnered respondents with a disability and 882 marital and nonmarital partners with a disability who received intra-couple care.

Consistent with *Hypothesis 5*, Model 1 (Table 3) shows that compared with remarried spouses, cohabitation among disabled persons with prior marital history is associated

with significantly reduced odds of obtaining partner care. The magnitude of this reduction is comparable to that observed in comparisons of disabled cohabitators to all disabled spouses [$\exp(-.731) = 0.48$]. Similarly, consistent with overall comparisons, the estimate for the union status variable in Model 2 (Table 3) indicates that, conditional on partner care receipt, formerly married cohabitators do not differ from their remarried counterparts with regard to their volume of received partner care. Thus, we did not find supportive evidence for *Hypothesis 6*. Finally, in agreement with *Hypothesis 7*, Model 3 (Table 3) suggests that formerly married cohabitators, who receive partner care, receive a similar proportion of their care from their partner as remarried spouses.

Taken together, the significant effect of union type on the care contribution score in the comparison of all cohabiting and married respondents and the nonsignificant effect of union type in the comparison based on previously married respondents suggests that prior marital history (at least partly) explains the significant effect of cohabitation uncovered in Model 3 of Table 2. In ancillary analyses (not shown, but available upon request), we reestimated this model, first adding a variable measuring whether a respondent had been widowed. The inclusion of the widowhood status variable did not notably alter the cohabiting variable's size or significance. In contrast, addition of an indicator of respondents' prior divorce resulted in loss of significance of the cohabiting variable. Thus, we found evidence that cohabitators' increased likelihood of prior divorce, but not prior widowhood, accounts for their greater reliance on partner care in the comparison with all married individuals.

DISCUSSION

Middle-aged and older Americans are becoming increasingly more likely to cohabit, and the increase in the share of nonmarital unions among older adults is expected to accelerate in the next few decades. Nonetheless, older disabled cohabitators' informal care arrangements have been largely overlooked as research to date has focused exclusively on frail married individuals. The present study extends previous research on intra-couple care by examining differences between disabled older cohabitators' and disabled married persons' patterns of partner care receipt.

Consistent with our expectation, we found that cohabitators with a disability are markedly less likely to receive partner care than married individuals after accounting for a range of respondent and partner characteristics. This finding is in agreement with cohabitators' lesser commitment to caregiving obligations inherent to the institution of marriage, with their lower interpersonal commitment and with prior scattered anecdotal evidence that cohabitation may be preferred by individuals seeking intimacy with limited caregiving responsibilities. Given the centrality of spousal assistance to married older persons' care, this finding raises concerns regarding the adequacy of frail cohabiting adults' levels of

received assistance. Furthermore, our results pose the question of frail cohabitators' reliance on nursing home and formal home care to compensate for their lower likelihood of partner care receipt (Moustgaard & Martikainen, 2009).

Contrary to our expectation, conditional on receiving intra-couple care, we found that cohabiting partners offered as many hours of assistance as spouses. Thus, once nonmarital partners enter the caregiving role, they are as dedicated to providing personal care to their partner as spouses. It is possible that nonmarital partners who take on caregiving duties emphasize the obligation to care for their partner while those who do not view caregiving as a choice (Stoller & Miklowski, 2008). Moreover, future research should investigate the role of relationship quality and emotional closeness in accounting for cohabitators' assumption of caregiving tasks (Spitze & Ward, 2000). It is likely that expectations of relationship permanence and marriage intentions also shape nonmarital partners' involvement in caregiving.

In agreement with limited prior reports that older cohabitators are less strongly imbedded in networks of kin and friends than married persons (Brown et al., 2006; De Jong Gierveld & Peeters, 2003), nonmarital partners provide a notably larger share of frail respondents' care than marital partners. Yet, previously married cohabitators are similar to their remarried counterparts with regard to their relative reliance on intra-couple care. We found evidence that union type differences in the care contribution score uncovered in comparison of cohabitators to all spouses were accounted for by cohabitators' increased likelihood of prior divorce. Indeed, divorce has been shown to reduce care provision by adult children (Bulcroft & Bulcroft, 1991; Lin, 2008), the primary source of care outside the couple (Wolff & Kasper, 2006). Because care-providing nonmarital partners receive relatively less assistance than spouses, they may be at greater risk of experiencing the deleterious mental and physical health effects associated with caregiving (Pinquart & Sörensen, 2003).

In light of husbands' notably greater reliance on spousal care relative to wives, we were surprised not to find gender effects in cohabitators' patterns of partner care receipt. Although our findings should be replicated based on larger samples of older cohabiting men and women, lower prevalence of cohabitation among older than younger adults suggests that older cohabitators comprise a select group, likely more unconventional than younger cohabitators. Until studies of gender roles within older cohabiting couples are undertaken, it remains unclear whether such selectivity may be related to the lack of gender effects uncovered in this study. At the minimum, our findings suggest that current evidence regarding attitudes toward gender roles and their enactment among younger cohabitators and older married persons may not be applicable to older cohabitators.

Although our study focused on gender, other important dimensions of the caregiving situation (e.g., couple's socioeconomic status and care recipients' disability severity)

may moderate the effect of union type on receipt of intra-couple care. Furthermore, we were not able to account for the role of cohabiting partners' history of disability. Prior work has suggested that care receipt is affected by the length of spouses' disability history as caregiving role incongruence (Allen, 1994) and reported task-related burden (Mui, 1995) are greatest during the initial stages of functional impairment when caregivers have had little time to become accustomed to the care needs of a frail partner.

An important limitation of the present study was our inability to control for union duration as it was missing for roughly a third of the cohabitators' sample, primarily respondents who entered the study as part of a nonmarital union. Yet, as they are overwhelmingly second or higher order partnerships, older cohabiting adults' unions are generally shorter than their married counterparts'. To the extent that increases in union length may be indirectly associated with greater interpersonal commitment and dedication, particularly among cohabitators, omission of union duration may result in overestimating the differences between cohabitators' and married persons' likelihood and volume of partner care receipt. Union duration may also have implications for selection into our observed sample of cohabitators as nonmarital partners were more likely to anticipate a partner's disability before deciding to enter their union than most married individuals. Long-term longitudinal data on cohabitators are necessary to isolate the role played by such potential selectivity into cohabitation in the results reported here.

To date, research investigating intra-couple exchanges of informal care has been restricted to older married persons (e.g., Lima et al., 2008; Spitze & Ward, 2000). This study is unique in demonstrating that older adults' cohabitation is not equivalent to marriage in terms of partner care receipt. Thereby, it adds weight to a small but growing body of research emphasizing the importance of accounting for older adults' nontraditional union forms and of examining their ramifications for older adults' well-being.

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