Cohort Differences in the Availability of Informal Caregivers: Are the Boomers at Risk?

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Purpose of the Study: We compare the close family resources of Baby Boomers (BBs) to previous cohorts of older adults at population level and then examine individual-level cohort comparisons of age-related trajectories of informal care availability from midlife into old age. Design and Methods: Population data from the U.S. Census and from the Health and Retirement Study (HRS) are used to identify a cohort similar to the BBs on marital status and fertility rates. Using generalized linear mixed models and 10-year longitudinal data from Depression and WWII parents (DWP; n = 1,052) and the parents of BBs (PBB; n = 3,573) in the HRS, we examine cohort differences in the time-varying likelihoods of being married and of having an adult child living within 10 miles. Results: The DWP had similar informal care resources at entry to old age as is expected in the BB. Longitudinal analyses of the DWP and PBB cohorts in HRS reveal that the availability of family changes over time and that the DWP cohort was significantly less likely to have a spouse or a grown child living nearby. Implications: These findings, and future projections based on them, have significant implications for institutions and public policy concerned with the informal caregiving needs of the Boomer cohort as they age.

Key Words: Baby Boomers, Longitudinal change, Marriage, Fertility, Health and Retirement Study

In 2030, the first of the Baby Boomers (BBs) will turn 85 years old and transition into the period of the life course when the need for care increases. It is imperative that we understand the implications for new policies and programs to provide anticipated care for these older Boomers if this cohort has few informal care providers available. By 2050, all surviving BBs will be among the oldest old. A U.S. Census report (Vincent & Velkoff, 2010) projects that the 85+ population in 2050 will be more than three times greater than it was in 2010. With the projected numbers of older adults paired with increasing life expectancies, the demand for formal and informal care among aging adults is expected to grow over the next few decades. Estimates of the amount of informal care that older adults receive have ranged from 4.6 hr per week for those with normal cognitive functioning (Langa et al., 2001) to more than 50 hr per week for adults suffering severe cognitive impairment or for those in the year preceding death (Ernst & Hay, 1994;
Informal care typically is provided by the spouse or adult children (Boaz & Hu, 1997; Freedman, Aykan, Wolf, & Marcotte, 2004; Silverstein & Giarusso, 2010; Spillman & Pezzin, 2000; Wolff & Kasper, 2006). Boaz and Hu (1997) found that in particular, married adults received significantly more informal care than unmarried adults and that those individuals who received care from both a spouse and adult children tended to have the most successful outcomes. In a sample of Swedish older adults living alone, Larsson and Silverstein (2004) found that those who were parents were significantly more likely to receive informal care compared with nonparents.

Given the proportion of informal care from spouses and children, it is important to ask about potential informal care resources of the BB cohort (born between 1946 and 1964). Demographic changes in the population may make this group more vulnerable to an informal care supply gap in late life than earlier cohorts, reflecting a combination of cohort-specific marriage and fertility choices in early life and historical changes in marital history, longevity, spousal and child survival, coresidence patterns, the geographic proximity of a potential child caregiver, and the alternative availability of extended family and nonkin informal carers. We focus on marital status and child availability and adopt a life course perspective to compare cohorts.

As a first step, we used a population-level approach to examine cohort differences and similarities in potential informal care resources at periods that are typically prior to actual need, namely midlife and young old age. The aim was to identify an older birth cohort similar to the BB in terms of fertility and marital status, given the consistent finding that the two primary sources of informal care are spouses and children. To do this, we use data from the U.S. Census and the Health and Retirement Study (HRS) to characterize static cohort differences and similarities in marital status and availability of an adult child at two periods in the life course, midlife and young-old age. The goal of this descriptive comparison is to determine if a previous cohort can be identified as a model for the BBs at periods in the life course when the need for informal care is typically low. In particular, we expected the cohort of Depression and WWII parents (DWP; 1905–1921) to be more similar to the BB than the parents of BBs (PBB; 1922–1940), in terms of the availability of a spouse and adult children in late life, albeit for different historical reasons. Entry to marriage and childbearing was constrained for the DWP cohort during the boom and bust years between 1925 and 1945. In contrast, the PBB cohort experienced strong normative pressure regarding marriage and fertility after WWII when there were unprecedented opportunities for home ownership and new lifestyles. The marriage and fertility choices of the BB are more heterogeneous, associated with the introduction of reliable birth control and increased workplace participation of women (e.g., Furstenberg, 2010; Hareven, 1994; Stanger-Ross, Collins, & Stern, 2005).

Next, we apply generalized linear mixed models to longitudinal cohort panel data to examine cohort differences in changes in the availability of a spouse and an adult child in close proximity across the transition from midlife to old age. We compare the trajectories of potential informal care resources between the DWP and PBB cohorts across old age using longitudinal data from HRS. Specifically, we investigate three research questions. First, does the likelihood of being married and of having an adult child living within 10 miles change as individuals’ age? Based on previous research, we hypothesized that the likelihood of marriage will decline over time due to the transition into widowhood and that the likelihood of having a grown child living nearby will increase with age due to mutual filial desires and obligations (Silverstein, Gans, & Yang, 2006). Second, does the likelihood of being married and of having an adult child living within 10 miles differ by birth cohort, over and above any effects of age, education, gender, race, and health? We hypothesize that the DWP cohort will be less likely to be married and will also be less likely to have a grown child living nearby compared with the PBB cohort. Finally, do the rates of age-related change in the likelihoods of being married and having a geographically proximal grown child differ by birth cohort? Overall, our expectation was that for the specific indicators we examined, the DWP cohort might be considered a model of available informal care resources for the Boomers as they enter late life.

**Method**

**Descriptive Cohort Comparisons: Population Data**

First, because the Boomers have not yet fully entered into late life, we wanted to identify an earlier cohort that resembled the BBs fertility and spousal availability. U.S. Census data from 1970, 1990, and 2010 were used to examine and descriptively compare fertility rates and marital status in three
cohorts (PBB, DWP, BB) in two life phases, midlife (45–64) and young-old age (65–74). Marital status for the BB cohort (born 1946–1964) at midlife was obtained from the 2010 U.S. Decennial Census. The DWP cohort (born 1905–1921) was examined as a possible model for the BB cohort. Data for this cohort at age 45–64 was obtained from the 1970 U.S. Decennial Census and at age 65–74 from the 1990 U.S. Decennial Census. Marital status data for the PBB cohort (born 1922–1940) was obtained from the 1990 U.S. Decennial Census for ages 45–64 and from the 2010 U.S. Decennial Census for the 65–74 age range. To evaluate the potential for having a spousal caregiver, marital status information from the census was compiled to reflect the percentages of individuals in a given age cohort group who were without a spouse, resulting from divorce, widowhood, or having never married. Cohort differences in fertility rates were examined using data on annual fertility rates from the National Center for Health Statistics (NCHS), representing the number of age-valid women in a given year that gave birth out of one thousand. Specifically, the average fertility rate for the years 1970–1988 was calculated for the BB cohort, between 1929 and 1945 for the DWP cohort, and between the years 1946 and 1964 for the PBB cohort. The fertility years reflect birth cohort fertility in the middle 20s when individuals in the defined cohorts were most likely to be having children.

To ensure consistency across with our individual-level analyses, we examined the similarity between the national rates and existing panel data in the HRS for the three cohorts. The HRS is a longitudinal population-based study of U.S. adults, originally designed to examine predictors and consequences of retirement (Juster & Suzman, 1995) among adults aged 50 and above. The HRS samples respondents and their coresident spouses/partners using a multi-stage probability sampling procedure. Corresponding data from 11 waves (1992, 1993, 1994, 1995, 1996, 1998, 2000, 2002, 2004, 2006, 2008) were compiled for matching age cohort groupings in midlife and young-old age when available. HRS data were weighted to represent the population and to account for the complex survey design and nonresponse.

**Sociodemographic Covariates.**—Gender was coded as 0 (men) or 1 (women) with men being the referent group in the analyses. Age in years was calculated by subtracting the year of the participant’s birth from the year of interview. Age was centered at 75 for interpreting model interactions. Education was the number of years in school or college, with a maximum possible score of 17. Racial group was coded as 0 = White, non-Hispanic and 1 = Not White, non-Hispanic.

**Cohort.**—Cohort was included as a categorical predictor in the models, with the PBB cohort representing the referent group. Individuals in the PBB cohort were selected based on having a birth year between 1922 and 1940; individuals in the DWP cohort were selected if they were born between 1905 and 1921.

**Functional Limitations.**—In HRS, functional limitations are assessed for mobility, motor skills, and the ability to perform instrumental and basic activities of daily living. Participants were asked if they have difficulty with a series of activities due to a health problem, such as jogging a mile, walking one block, climbing one flight of stairs, picking up a dime, shopping for groceries, and bathing. A count of limitations was computed, with a maximum score of 23. This score is assessed for all six waves of data.

**Marital Status.**—Current marital status is assessed at every wave. To examine the likelihood of being married, the present study coded 0 = not married and 1 = married. Individuals coded as not married could be widowed, divorced, or never married. In addition to being used as an outcome, marital status was included as a control in the
models examining the likelihood of having an adult child living within 10 miles.

**Adult Child Proximity.**—At each wave, one member from each household in the HRS is asked whether there are any adult children living within 10 miles. For the present study, this household level variable was assigned to individuals as an indicator of the likelihood that individuals have a geographically available adult child. Responses were coded 0 = no (including all childless participants) and 1 = yes, has a child living within 10 miles. Given that the DWP cohort is likely to have higher rates of widowed individuals with children and that the BB cohort would likely have higher rates of divorced individuals with children, in comparison to the PBB cohort, adult child proximity was included as a covariate in the models examining the likelihood of being married to control for these potential differences.

**Statistical Procedure for Longitudinal Analysis**

Given that the outcomes for the longitudinal analysis are dichotomous and that the data violate independence assumptions due to repeated measures within individuals, generalized linear mixed models were specified with proc glimmix using SAS, version 9.2 (SAS Institute, Inc., Cary, NC). Random intercepts were included in the models to account for within-person interdependencies. The models were estimated on a binomial distribution, and the outcomes were transformed to the logit scale to allow linear modeling. The resultant logit estimates were then transformed into odds ratios for interpretation. As a first step, models estimating the likelihoods of being married and having a proximal adult child were run for each cohort individually. Next, we included both cohorts in the same model and restricted them to the overlapping age range across the two cohorts ($n = 4141$), ages 76–86. In the cohort comparison models, a dichotomous predictor representing cohort membership was included after the covariates to determine actual cohort differences in the availability of family network members. To examine change over time, age and quadratic age terms were tested. By including individual predictors for age and cohort, the models are able to disentangle age-related change (slope) versus cohort-related differences in the likelihoods of being married and having a geographically proximal child. A series of nested models were estimated for all analyses. The first step included demographic controls, including age, education, gender, racial group, and physical limitations. The cohort comparison models included a second step adding the dichotomous cohort variable and the third step tested age, cohort, gender, and racial group interactions. Individuals without data at each wave were included in the analyses for the occasions in which they did participate. Participants with missing data on the outcomes or predictors were excluded. Improvement in model fit was assessed via log likelihood deviance tests as well as improved Bayesian information criteria (lower is better).

**Results**

**Population Cohort Characteristics**

Percentages of marital status and fertility rates are reported in Table 2 for the three cohorts at midlife and young-old age. Overall, the descriptive indicates heterogeneity in life contexts of the three cohorts at different periods in the life course. Despite this, it is also apparent that the BB cohort is more similar to the DWP cohort than to their parents’ cohort. Marital status comparisons reveal the complex effects of heterogeneity associated with cohort-specific historical factors. In midlife (ages 45–64), the BB cohort shows significantly higher rates of being non-married, followed by the PBB cohort and the DWP cohort having the lowest rates f being non-married in that age range (see Table 2). When aged 65–74, the DWP cohort has higher rates of widowhood, a lower rate of divorce, and an overall higher percentage in a non-married status compared with the PBB cohort. It appears that with the higher rates of divorce and never-married in the BB cohort and the higher rates of widowhood in the DWP cohort, the availability of a spouse and children as primary informal caregivers is similar in these cohorts. These demographic differences lead to projections that the DWP and BB cohorts are less likely to be married compared with the PBB cohort in the young-old age period (DWP% non-married = 39.4; PBB% non-married = 33.8).

In terms of fertility, both the DWP (83.0) and BB (68.9) cohorts had lower fertility rates compared with the PBB (113.5) cohort. In addition to the annual fertility rates provided by U.S. Vital Statistics, Total Fertility Rates by birth year were also examined for the available years 1919 through 1964. These fertility rates, retrieved from the Human Fertility Database archive, represent the average number of children
born to women from a given birth year by age 40. This alternative calculation, although not inclusive of the entire DWP cohort, confirmed that women in the PBB cohort had more children on average (303) than the BB (1,998) and DWP (2,562) cohorts.

In general, the population-level rates reported from the U.S. Census data are similar to percent-ages observed in the HRS-matched data reported in Table 2. Rates of never-married in the HRS sample tend to be lower than national averages, likely due to the household sampling method in the HRS. HRS data were not available for the DWP cohort 45–64 age range because the study did not begin until 1992. The largest differences between the census and HRS percentages were for the PBB cohort in the 45–64 age range, where the

| Table 1. Descriptives of Key Variables by Birth Cohort |
|------------------------------------------|--------|--------|--------|--------|--------|--------|
|                                            | 1998   | 2000   | 2002   | 2004   | 2006   | 2008   |
| DWP (n = 1,052)                           |        |        |        |        |        |        |
| Birth years                               | 1905–1921 |        |        |        |        |        |
| Education                                 | 11.6   |        |        |        |        |        |
| % Female                                  | 68.16  |        |        |        |        |        |
| % White non-Hispanic                      | 87.07  |        |        |        |        |        |
| % Married                                 | 48.67  | 43.06  | 38.12  | 33.17  | 28.76  | 24.81  |
| % With proximal child                     | 51.50  | 48.27  | 49.24  | 51.00  | 48.71  | 49.71  |
| Age                                       | 79.66  | 81.73  | 83.92  | 85.85  | 87.84  | 89.82  |
| Number of functional limitations          | 4.27   | 4.78   | 5.64   | 6.50   | 8.00   | 9.45   |
| PBB (n = 3,573)                           |        |        |        |        |        |        |
| Birth Years                               | 1922–1940 |        |        |        |        |        |
| Education                                 | 12     |        |        |        |        |        |
| % Female                                  | 57.68  |        |        |        |        |        |
| % White non-Hispanic                      | 86.93  |        |        |        |        |        |
| % Married                                 | 70.61  | 67.81  | 64.43  | 61.55  | 57.97  | 53.95  |
| % With proximal child                     | 57.95  | 56.77  | 56.75  | 57.79  | 56.52  | 56.82  |
| Age                                       | 69.47  | 71.37  | 73.52  | 75.47  | 77.46  | 79.44  |
| Number of functional limitations          | 3.53   | 3.72   | 4.24   | 4.64   | 5.30   | 6.04   |

Note: Fixed covariates are 1998 values and time-varying covariates and outcomes are reported for 1998 through 2008. The maximum number of functional limitations = 23. DWP = Depression and WWII parent cohort; PBB = parents of the Baby Boomer cohort.

| Table 2. Cohort Comparison of Fertility Rates and Non-Married Status from the U.S. Census and the HRS |
|--------------------------------------------------|--------|--------|--------|
| Birth cohort                                      | Baby Boomers | Depression and WWII parents | Parents of Baby Boomers |
| Average fertility rate (year range)               | 1946–1964 | 1905–1921 | 1922–1940 |
| Percentage non-married                           | Census | HRS | Census | HRS | Census | HRS |
| Ages 45–64                                        |        |      |        |      |        |      |
| % Widowed                                        | 3.7\(^c\) | 4.8  | 8.3\(^d\) | —    | 6.3\(^e\) | 3.7  |
| % Divorced                                       | 15.9\(^c\) | 19.7 | 4.6\(^d\) | —    | 12.1\(^d\) | 6.6  |
| % Never married                                  | 10.8\(^c\) | 5.3  | 6.3\(^d\) | —    | 5.7\(^d\) | 1.6  |
| % Total                                          | 30.4\(^c\) | 29.8 | 19.2\(^d\) | —    | 24.1\(^e\) | 12.0 |
| Ages 65–74                                        |        |      |        |      |        |      |
| % Widowed                                        | —      | —    | 28.4\(^e\) | 30.1 | 15.8\(^e\) | 19.3 |
| % Divorced                                       | —      | —    | 3.6\(^e\) | 5.3  | 13.1\(^c\) | 11.9 |
| % Never married                                  | —      | —    | 7.4\(^e\) | 2.9  | 4.9\(^e\) | 3.2  |
| % Total                                          | —      | —    | 39.4\(^e\) | 38.3 | 33.8\(^e\) | 34.5 |

Notes: HRS = Health and Retirement Study.
\(^a\)Retrieved from National Center for Health Statistics.
\(^b\)Weighted data from the relevant wave of HRS.
\(^c\)2010 Decennial Census.
\(^d\)1970 Decennial Census.
\(^e\)1990 Decennial Census.
HRS participants had substantially lower rates of being non-married. Due to data availability constraints, PBB-cohort participants in the HRS potentially had data from the years 1992 to 2004, capturing a limited age range of 52–64 compared with 45–64 in the census. However, the PBB cohort percentages for the 65–74 age group are similar across the census and HRS data, which may reflect a better representation of this cohort–age combination in the HRS data. The overall total percent non-married was 33.8 in the census compared with 34.5 in the HRS. Similarly, the DWP cohort data in the HRS were similar to the census data, with 38.3% and 39.4%, respectively, for the 65–74 age group. Data from the HRS for the PBB and DWP cohorts more than age 65 were used to model individual-level cohort differences in the likelihood of having available family support over time.

Although the pathways underlying the family network similarities among DWP and BB cohorts are quite different, particularly in relation to marital status, the similarities in fertility rates and anticipated rates of non-married status suggest that the DWP cohort is useful as a proxy to model the potential for informal care as the BBs enter old age.

Individual Cohort Models: Likelihood of Being Married and Living Within 10 Miles of a Child Over Time

Results of the best-fitting models estimating the likelihood of being married for the DWP and PBB cohorts are reported in Table 3. The generalized linear mixed models indicated that, for both cohorts, as individuals age, they are increasingly less likely to have a spouse (ps < .001) even after accounting for education, gender, racial group, and physical limitations. The DWP cohort illustrated overall linear decline in the likelihood of being married, with significantly lower likelihoods among women (p < .001) and among those who were not White non-Hispanic (p < .001). The same pattern emerged in the PBB cohort, in addition to significant interactions with gender between age and racial group. Specifically, the likelihood of women being married in the PBB cohort declined with age significantly faster than for men (p < .001). In addition, PBB cohort women who were classified as not White non-Hispanic were significantly less likely to be married compared with all other gender and racial groups (p < .001).

The model estimates for the likelihoods of living within 10 miles of a child for both DWP and PBB cohorts are reported in Table 4. The results indicate that whereas the DWP cohort was less likely to live near a child with age (p < .001), there was no significant effect of age for the PBB cohort. However, the PBB cohort did have significant effects for gender and racial group, such that women (p < .05) and White non-Hispanic individuals (p < .05) were more likely to live within 10 miles of a child. However, women’s higher likelihoods were diminished if they were not White non-Hispanic (p < .04). Although the previous models evaluating each cohort independently are helpful, it is necessary to examine both cohorts in a combined model to directly identify cohort differences. Utilizing the trimmed sample to include only individuals within the 76–86 age range that was available in both cohorts for the 1998 through 2008 waves of the HRS, the following section provides results of these cohort comparisons.

Table 3. Generalized Mixed Models Predicting the Logit Likelihood of Being Married

| Depression and WWII parents cohort | Parents of the Baby Boomers cohort |
|-----------------------------------|-----------------------------------|
|                                   | b   | SE  | exp(b) | b   | SE  | exp(b) |
| Intercept                         | 10.70*** | 1.12 | 44,355.86 | 10.13*** | 0.78 | 25,084.36 |
| Age                               | -0.67*** | 0.03 | 0.51  | -0.45*** | 0.03 | 0.64   |
| Education                         | -0.03  | 0.08 | 0.97  | 0.16**   | 0.06 | 1.17   |
| Women                             | -8.92*** | 0.54 | 0.00  | -3.00*** | 0.42 | 0.05   |
| Racial group                      | -5.09*** | 0.93 | 0.01  | -1.52*   | 0.75 | 0.22   |
| Physical limitations              | -0.06*  | 0.03 | 0.94  | -0.04*   | 0.02 | 0.96   |
| Adult child                       | 0.10   | 0.28 | 1.11  | 0.44**   | 0.17 | 1.55   |
| Age by gender                     | —     | —   | —     | -0.22*** | 0.04 | 0.80   |
| Racial group by gender            | —     | —   | —     | -20.55*** | 1.13 | 0.00   |
| Bayesian information criteria     | 3,243.53 | 10,386.07 |

Note: *p < .05. **p < .01. ***p < .001.
The likelihood of being married, that White non-Hispanic individuals were significantly more likely to be married, and that women are significantly less likely to be married compared with men ($p < .001$).

As expected, over and above age, education, gender and health, the DWP cohort was significantly less likely to be married compared with the PBB cohort ($p < .001$). The significant age by gender interaction indicated that over and above gender-based level differences in the likelihood of being married, women also decline in their likelihood at a faster rate than men.

Figure 1 plots the model-based logit likelihoods of being married by cohort and gender. Projected logit likelihoods are calculated from the final model estimates with covariates mean centered. The solid lines represent the Depression and WWII parents cohort and dashed lines represent the parents of Baby Boomers cohort, whereas men are represented by squares and women are identified by circles.

### Table 4. Generalized Mixed Models Predicting the Logit Likelihood of Living Within 10 Miles of an Adult Child

| Cohort          | Depression and WWII parents cohort | Parents of the Baby Boomers cohort |
|-----------------|-----------------------------------|-----------------------------------|
| $b$             | $SE$                              | $exp(b)$                          |
| Intercept       | 3.03***                           | 20.70                             |
| Age             | −0.04**                           | 0.96                              |
| Education       | −0.24***                          | 0.79                              |
| Women           | −0.05                             | 0.95                              |
| Racial group    | −0.82                             | 0.44                              |
| Physical limitations | 0.04*                     | 1.04                              |
| Married         | 0.01                              | 1.01                              |
| Racial group by gender | —                     | −1.49**                           |
| Bayesian information criteria | 5,292.79                      | 17,378.20                         |

Note: *$p < .05$. **$p < .01$. ***$p < .001$. 

### Table 5. Generalized Mixed Model Examining Cohort Differences in the Logit Likelihood of Being Married

| Cohort          | $b$          | $SE$      | $exp(b)$ |
|-----------------|--------------|-----------|----------|
| Depression and WWII parents cohort | 4.20*** | 0.70      | 66.69    |
| Age             | −0.35***     | 0.08      | 0.70     |
| Quadratic age   | −0.01*       | 0.01      | 0.99     |
| Education       | 0.25***      | 0.04      | 1.28     |
| Women           | −7.59***     | 0.36      | 0.00     |
| Racial group    | −4.83***     | 0.49      | 0.01     |
| Physical limitations | −0.07**     | 0.02      | 0.93     |
| Adult child     | 0.60**       | 0.19      | 1.82     |
| Depression and WWII parents cohort | −1.78*** | 0.34      | 0.17     |
| Age by gender   | −0.14**      | 0.05      | 0.87     |
| Bayesian information criteria | 8,567.40     |           |          |

Notes: Race/ethnicity represents the effect for individuals not identified as White/non-Hispanic. *$p < .05$. **$p < .01$. ***$p < .001$. 

### Figure 1. Model-based predicted likelihoods of being married over time by cohort and gender. Projected logit likelihoods are calculated from the final model estimates with covariates mean centered. The solid lines represent the Depression and WWII parents cohort and dashed lines represent the parents of Baby Boomers cohort, whereas men are represented by squares and women are identified by circles.
The results confirmed the hypothesis that the DWP cohort is significantly less likely to have a proximal adult child compared with the PBB cohort \((p < .001)\). Figure 1 illustrates the model-based projections for the logit likelihood of living within 10 miles of a child over time for both the DWP and PBB cohorts.

**Model-Based Population Projections**

As a final step, the point estimates from the cohort comparison models were applied to 2010 Decennial Census data to estimate the frequency of 75-year-olds in 2010 without a spouse and without a child living within 10 miles. We then took U.S. Census projections for the number of 75-year-olds in 2030 and applied the model parameters for the DWP cohort to make a population projection for the number of 75-year-olds in 2030 without a spouse or without a child living nearby. These 2010 and 2030 comparative projections are illustrated in Figure 3. Projections for being without a spouse are by gender because the model indicated significant differences between men and women. The 2030 (BB cohort) projections applied 16 years of education to reflect higher educational attainment in the BB cohort, adjusting for race. The 2010 cohort estimates used 12 years of education reflecting lower average educational attainment in that cohort and were adjusted for race. Functional limitations were set at 3, indicating a potential need for care in future years. Finally, projections for the frequency without a spouse were adjusted for having a child living within 10 miles of an adult child. Relative to cohort differences, the results confirmed the hypothesis that the DWP cohort is significantly less likely to have a proximal adult child compared with the PBB cohort \((p < .001)\).

| Table 6. Generalized Mixed Model Examining Cohort Differences in the Logit Likelihood of Living Within 10 Miles of an Adult Child |
|-------------------------------------------------------------|
| \( b \) | \( SE \) | \( \exp(b) \) |
| Intercept | 2.58*** | 0.42 | 13.20 |
| Age | -0.04** | 0.01 | 0.96 |
| Education | -0.19*** | 0.03 | 0.83 |
| Women | 0.10 | 0.20 | 1.11 |
| Racial group | -0.03 | 0.29 | 0.97 |
| Physical limitations | 0.05*** | 0.01 | 1.05 |
| Married | 0.37*** | 0.14 | 1.45 |
| Depression and WWII parents cohort | -0.94*** | 0.22 | 0.39 |
| Bayesian information criteria | 12,064.11 |

Notes: Race/ethnicity represents the effect for individuals not identified as White/non-Hispanic. **\( p < .01 \). ***\( p < .001 \).

To illustrate, Figure 2 shows model-based predicted likelihoods of having a child living within 10 miles over time by cohort. Projected logit likelihoods are calculated from the final model estimates with covariates mean centered. The solid line represents the Depression and WWII parents cohort, and the dashed line represents the parents of Baby Boomers cohort.

![Figure 2](image)

**Figure 2.** Model-based predicted likelihoods of having a child living within 10 miles over time by cohort. Projected logit likelihoods are calculated from the final model estimates with covariates mean centered. The solid line represents the Depression and WWII parents cohort, and the dashed line represents the parents of Baby Boomers cohort.

To further illustrate, Figure 3 presents model-based population projections comparing the frequency of 75-year-olds in 2010 and 2030 who will not have a spouse or a child living within 10 miles. Frequencies are reported in the thousands.

![Figure 3](image)

**Figure 3.** Model-based population projections comparing the frequency of 75-year-olds in 2010 and 2030 who will not have a spouse or a child living within 10 miles. Frequencies are reported in the thousands.
10 miles and the projections of the frequency without a nearby child were adjusted for marital status.

Based on these parameterizations, our model predicts that 19% to 36% of 75-year-olds in 2030 will not have a child living within 10 miles. However, with the BB cohort’s projected size being significantly larger than the PBB, the magnitude of the predictions may be better understood in terms of population frequency. The .95 confidence interval estimates indicate that in 2030, there may be from 30,205 to 110,202 75-year-old men without a spouse, 1,741,089 to 1,772,273 75-year-old women without a spouse, and 622,350 to 755,109 75-year-olds (men and women) without a child living nearby.

**Discussion**

The present study makes a unique contribution to the literature by taking a life course approach to assess potential available family support for future caregiving needs among the BBs. First, we examined descriptive population-level data from the U.S. Census and the HRS to identify a cohort who shares similar demographic characteristics with the BBs relative to fertility and marital status. The DWP cohort was identified as a proxy for the BBs in old age. We then undertook individual-level longitudinal analysis of changes in the Depression and World War II parent cohort’s availability of informal caregivers over ten years and compared their trajectory with that of the PBB cohort. These longitudinal analyses revealed that the likelihood of available family members changes over time. Every year past age 75 was associated with 30% lower odds of being married and 4% lower odds of living within 10 miles of a child. This finding confirms our hypothesis that with increasing age, individuals are more likely to be widowed and therefore less likely to have a spouse. However, our expectation that living within 10 miles of a child would increase with age was not supported. In the models examining the DWP and PBB cohorts independently, we found that the PBB cohort did not show significant change in the likelihood of living near a child, whereas individuals in the DWP cohort declined in their likelihoods over time. This finding was further supported in the cohort comparison model. The decrease contrasts with earlier suggestions that increased physical functioning limitations and health concerns often necessitate that older adults live near grown offspring who assist with day-to-day care (Silverstein et al., 2006; but see Schoeni, 1998).

Our expectation that the likelihood of having available family support would differ by cohort was supported. The cohort comparison analyses revealed that over and above the effects of age, education, gender, racial group, and functional limitations, the DWP cohort was significantly less likely to be married and to have a child living nearby compared with the PBB cohort. However, the results did not identify cohort differences in the rate of change over time in the likelihood of having access to these family members. The DWP cohort was affected by lower life expectancies and widowhood in late life. On the other hand, the census data indicate, at least in midlife, that the Boomers are more likely to be without a spouse due to divorce. Widowhood and divorce may have differential implications for the receipt of informal care from family (e.g. Furstenberg, Hoffman, & Shrestha, 1995). One study found that compared with the widowed, divorced older adults in the AHEAD DWP cohort are less likely to core-side with adult children and that they receive fewer hours of care from adult children (Pezzin & Schone, 1999). However, a study of the PBB cohort in the United Kingdom found that older divorced parents were not disadvantaged in the amount of care received from grown children compared with widowed parents (Glaser, Stuchbury, Tomassini, & Askham, 2008). These cohort differences (albeit confounded with country) suggest changes in the stigma of divorce in later life, which may be associated with greater stepchild support for the Boomers.

Findings from the current study reveal significant cohort differences in available informal caregivers and suggest that as the Boomers enter into late life, they may have lower likelihoods of access to both a spouse and adult children. Recent studies have found 15%–20% of the older adults in need of care do not receive it (Roth, Haley, Wadley, Clay, & Howard, 2007; Wolff & Kasper, 2006), a care gap that is even larger when looking at those without a spouse. The current findings suggest the potential for a widening of the care gap once the BBs are in late life if they will rely on spouses and grown children as their primary care providers. Indeed, based on point estimates from the current study, we estimated population projections for the number of 75-year-olds in 2010 and 2030 without a spouse and the number without a child living within 10 miles. These are illustrated in Figure 2. Although the projections for the Boomers in 2030 are highly speculative, based on estimates from the DWP cohort, they suggest a pattern of decreased availability in traditional informal care providers,
in some scenarios more than two times the need compared with 2010 estimates. The current study focuses on the potential for having an available spouse or child if care is needed, a necessary first step in the provision of informal care. As a simple follow-up to our findings, we assessed whether there were also cohort differences in the perception of available support in the future. HRS asks individuals who are not currently receiving care (formal or informal) as to whether the expectations of the Boomers.

It is possible that BBs with limited access to traditional informal care providers are aware of this issue and are planning nontraditional ways to meet their caregiving needs, such as extended family, close friends, or fictive kin. Connidis (1994) found that a small percentage of older adults receive care from siblings and that individuals often perceive the availability of sibling support in the event of a crisis. Because the BBs are likely to have siblings, this may be one avenue by which the caregiving need is met. However, as is the case with most spouse caregivers, sibling caregivers can be frail and in compromised health. Stepfamily ties, grand-children, and nonstandard kinship networks may also provide a source of informal care for many in the BB cohort (Silverstein & Giarrusso, 2010; Wachter, 1997). However, Coleman, Ganong, Hans, Sharp, and Rothrauff (2005) found that self-reported filial obligations among stepchildren to stepparents are not as strong compared with biological relationships. This indicates that with the increased rates of divorce and remarriage in the BB cohort, individuals should not assume they will receive care from their stepchildren. The study did find that continued contact and having less severe care needs were both associated with a stronger sense of filial obligation. However, it is also possible that assistance from stepchildren may be greater among the BB cohort due to changing social norms and acceptance of nontraditional families.

There is also the possibility that the Boomers will have greater asset accumulation compared with prior generations and will be better equipped to pay for formal care services. For example, the Boomers are likely to remain active in paid employment longer, which may provide financial and health care–related advantages. However, those Boomers who have fewer financial resources, particularly unmarried women, are also at a care resource disadvantage by not having a spouse. Furthermore, there are suggestions that the recent economic downturn will significantly deflate Boomers’ home asset values and retirement savings so that they will not be able to count on their financial resources to make up the care receipt difference.

Although there are many advantages to using existing cohorts of older adults to model what might be expected once the Boomers have entered late life, there are several limitations. First, although the similarities between the DWP and BB cohorts have been described relative to fertility rates and the overall rates of being non-married, these two groups are also quite different. The Boomers have higher levels of education, longer life expectancies, different gender distributions in the workforce over the life course, they experienced the emergence of significantly advanced forms of communication and transportation and have had very different, often healthier, life experiences than individuals in the DWP cohort. These differences make it very difficult to project for the BBs with previous cohorts. We intentionally controlled for health, gender, racial group, and education to account for some of these differences. A higher proportion of Boomers are likely to reach advanced old age compared with the DWP cohort, which means that those without a spouse or child available may have a longer period of life without these critical sources of care. Our decision to model only the potential for traditional informal care providers was in part due to these generational differences. The findings from the present study should be viewed in terms of informal care receipt potential and do not necessarily account for cohort differences in the pathways by which potential carers actually decide to provide care, such as the strength of social ties, filial obligations, or economic conditions. This limitation does not diminish the importance of this study, we believe, but rather illustrates the complexity of these types of predictions and the need for future work to examine the additional processes and factors necessary for the receipt of care.
The present study cannot account for potential effects on the likelihood of available family network resources in late life between the DWP and BB cohorts due to differential life course, history-related experiences. For example, the DWP cohort experienced WWI during their early life and lived their adolescent and young adulthood years during the Great Depression. In contrast, the Boomers lived their childhoods during an economic boom post WWII and in adolescence and early adulthood were exposed to major social changes in the 1960s. It is possible that differential age timing of these events may affect the extent to which these cohorts will require care and whether their families will be equally as willing to provide it. It is also possible that the attitudes of the BB cohort and their children about intergenerational care responsibilities and obligations differ from those held by the DWP and PBB cohorts (e.g., Furstenberg, 2010; Silverstein & Giarrusso, 2010).

Using the DWP cohort as a model for the BBs in late life is not ideal. However, it is an attempt to make predictions about what may be expected before the peak demand for care among the Boomers is reached. If using the experiences of the DWP cohort is a valid approximate model for what the BBs will experience over the next few decades, societal institutions which provide formal care will need to not only plan for an increase in the number of older adults requiring services (e.g., home care agencies, assisted living, nursing homes) but also a greater need of care per older individual due to a diminished availability of primary family resources. Policy markers may also introduce initiatives that are currently being supported by groups, such as the World Health Organization and New York Academy of Medicine on Age Friendly Cities, such as new forms of coresidence, support for nonrelative carers, and the development of aging-friendly buildings and neighborhoods designed to ensure care for the oldest generation. Finally, in order to minimize the risk of policy-related intergenerational conflict due to expected increases in the demand for resources, it may be preferable to introduce policies such as mandated long-term care insurance to address the funding and the professional training of community and institutional carers over the next few decades.

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**References**

Booz, R. F., & Hu, J. X. (1997). Determining the amount of help used by disabled elderly persons at home: The role of coping resources. *Journal of Gerontology: Social Sciences*, 52B, 317–324. doi:10.1093/gerontb/52B6.5317

Coleman, M., Ganong, L. H., Hans, J. D., Sharp, E. A., & Rothrauff, T. C. (2005). Filial obligations in post-divorce stepfamilies. *Journal of Divorce & Remarriage*, 43, 1–27. doi:10.1300/J087v43n03_01

Connidis, I. A. (1994). Sibling support in older age. *Journal of Gerontology: Social Sciences*, 49, 309–317. doi:10.1093/geronj/49.6.3309

Ernst, R. L., & Hay, J. W. (1994). The US economic and social costs of Alzheimer’s disease revisited. *American Journal of Public Health*, 84, 1261–1264. Retrieved from http://ajph.aphapublications.org/cgi/content/abstract/84/8/1261

Freedman, V. A., Aykan, H., Wolf, D. A., & Marcotte, J. E. (2004). Disability and home care dynamics among older unmarried Americans. *Journal of Gerontology: Social Sciences*, 59, 25–33. doi:10.1093/geronj/59.1.S25

Furstenberg, F. F. (2010). On a new schedule: Transitions to adulthood and family change. *Future of Children*, 20, 67–87. doi:10.1353/foc.00038

Furstenberg, F. F., Hoffman, S. D., & Shreshtha, L. (1995). The effect of divorce on intergenerational transfers: New evidence. *Demography*, 32, 319–333. doi:10.2307/2601683

Glaser, K., Stuchbury, R., Tomassini, C., & Askham, J. (2008). The long-term consequences of partnership dissolution for support in later life in the United Kingdom. *Aging & Society*, 28, 329–351. doi:10.1017/S0144686X07006642

Hareven, T. K. (1994). Aging and generational relations: A historical and life course perspective. *Annual Review of Sociology*, 20, 437–461. Retrieved from http://www.jstor.org/stable/2083373

Juster, F. T., & Suzman, R. (1995). An overview of the health and retirement study. *Journal of Human Resources*, 30, 57–556. Retrieved from http://www.jstor.org/stable/146277

Langa, K. M., Chernew, M. E., Kabeto, M. U., Herzog, A. R., Ostfeld, M. B., & Willis, R. J., et al. (2001). National estimates of the quantity and cost of informal caregiving for the elderly with dementia. *Journal of General Internal Medicine*, 16, 770–778. doi:10.1111/j.1525-1497.2001.10123.x

Larsson, K., & Silverstein, M. (2004). The effects of marital and parental status on informal support and service utilization: A study of older Swedes living alone. *Journal of Aging Studies*, 18, 231–244. doi:10.1016/j.jags.2004.01.001

Max, W., Webber, P., & Fox, P. (1995). Alzheimer’s disease: The unpaid burden of caring. *Journal of Aging and Health*, 7, 179–199. doi:10.1177/089826439500700202

Noel-Miller, C. M. (2011). Partner caregiving in older cohabiting couples. *Journal of Gerontology: Psychological and Social Sciences*, 66, S31–S33. doi:10.1093/geronb/bgr027

Pezzin, L. E., & Schone, B. S. (1999). Parental marital disruption and intergenerational transfers: An analysis of lone elderly parents and their children. *Demography*, 36, 287–297. doi:10.2307/2648053

Rhee, Y., Degenholtz, H. B., Lo Sasso, A. T., & Emanuel, L. L. (2009). Estimating the quantity and economic value of family caregiving for community-dwelling older persons in the last year of life. *Journal of the American Geriatrics Society*, 57, 1654–1659. doi:10.1111/j.1532-5415.2009.02390.x

Roth, D. L., Haley, W. E., Wedley, V. G., Clay, O. J., & Howard, G. (2007). Race and gender differences in perceived caregiver availability for community-dwelling middle-aged and older adults. *The Gerontologist*, 47, 721–729. doi:10.1093/geront/47.6.721

Schoeni, R. F. (1998). Reassessing the decline in parent-child old-age coresidence during the twentieth century. *Demography*, 35, 307–313. doi:10.2307/2004038

Silverstein, M., Gans, D., & Yang, F. M. (2006). Intergenerational support to aging parents: The role of norms and needs. *Journal of Family Issues*, 27, 1068–1084. doi:10.1177/0192515X06288120
Silverstein, M., & Giarrusso, R. (2010). Aging and family life: A decade review. *Journal of Marriage and Family, 72*, 1039–1058. doi:10.1111/j.1741-3737.2010.00749.x

Spillman, B. C., & Pezzin, L. E. (2000). Potential and active family caregivers: Changing networks and the “sandwich” generation. *Milbank Quarterly, 78*, 347–374. doi:10.1111/1468-0009.00177

Stanger-Ross, J., Collins, C., & Stern, M. J. (2005). Falling far from the tree: Transitions to adulthood and the social history of twentieth-century America. *Social Science History, 29*, 625–648. doi:10.1215/01455532-29-4-625

Vincent, G. K., & Velkoff, V. A. (2010). The next four decades: The older population in the United States: 2010 to 2050. Population estimates and projections. U.S. Census Bureau. Retrieved from http://www.census.gov/prod/2010pubs/p25-1138.pdf

Wachter, K. W. (1997). Kinship resources for the elderly. *Philosophical Transactions of the Royal Society B: Biological Sciences, 352*, 1811–1817. doi:10.1098/rstb.1997.0166

Wolff, J. L., & Kasper, J. D. (2006). Caregivers of frail elders: Updating a national profile. *The Gerontologist, 46*, 344–356. doi:10.1093/geront/46.3.344