

Age and Cohort Trends in Formal Volunteering and Informal Helping in Later Life: Evidence From the Health and Retirement Study

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ABSTRACT Formal volunteering holds great importance for the recipients of volunteer services, individuals who volunteer, and the wider society. However, how much recent birth cohorts volunteer in middle and late adulthood compared with earlier birth cohorts is not well understood. Even less well-known are the age and cohort trends in informal helping provided to friends and neighbors in later adulthood. Using longitudinal data from the Health and Retirement Study, we estimated age and cohort trends in formal volunteering and informal helping from 1998 to 2018 for a wide range of birth cohorts born between 1909 and 1958. We used multivariate, multilevel models based on Bayesian generalized modeling methods to estimate the probabilities of volunteering and informal helping simultaneously in a single model. Despite having advantages in human and health capital, recent birth cohorts showed volunteering levels in late adulthood that are similar to those of their predecessors. Moreover, more recent birth cohorts were consistently less engaged in informal helping than earlier birth cohorts throughout the observation period. More research is needed to illuminate the sociocultural drivers of changes in helping behaviors and overall prosocial and civic engagement.

KEYWORDS Older adults • Generations • Civic engagement • Multivariate models • Bayesian methods

Introduction

Volunteering through formal organizations is one of the hallmarks of the American experience, representing an important cultural phenomenon that binds individuals to their communities and one another (Morrow-Howell 2010). Volunteers are important resources for charitable groups and other organizations, helping them meet their objectives by carrying out their programs and delivering services to their target audiences. Volunteers also offer remarkable social and economic benefits to society. According to the Independent Sector (2020), the monetary value of unpaid volunteer work in 2019 was \$187.7 billion.

The age gradient describing individuals' volunteer activity across the life course is well-documented. In the United States in 2015, 22.0% of young adults aged 25–34

volunteered with a formal organization, compared with 29.8% of those aged 35–44, 28.5% of those aged 45–54, and 25.9% of those aged 55–64 (U.S. Bureau of Labor Statistics 2016). Adults aged 65 or older, 23.6% of whom formally volunteered in 2015, had the highest median annual hours of volunteering (U.S. Bureau of Labor Statistics 2016). The age curve of volunteering is generally argued to be related to life course factors, such as marital status, family formation and child-rearing, job-related opportunities associated with volunteering, role acquisition and loss, and later-life health declines.

In addition to varying by age, volunteering can reasonably be expected to vary by birth cohort, partly because different cohorts encounter different social, economic, and political environments that shape volunteerism motivations and opportunities (Einolf 2009; Rotolo and Wilson 2004; van Groenou and van Tilburg 2012). However, the evidence regarding cohort variation in volunteering is sparse and equivocal. Further, despite concerns regarding increasing levels of social disconnectedness in the United States and elsewhere, whether recent birth cohorts volunteer more or less relative to earlier birth cohorts is not well understood. Even less well-known are the age and cohort trends in informal helping behaviors. Helping behaviors include instrumental, informational, and emotional support provided to social network members who do not live in the same household as the helper (e.g., friends, neighbors, and relatives).

Both formal volunteering and informal helping represent activities that provide value to communities, to the persons being helped, and to helpers themselves, yielding a “win-win-win” outcome (Carr et al. 2015). However, most studies of older adults have focused exclusively on formal volunteering, even though older people more often engage in informal helping behaviors. Studies of informal helping are relatively rare, and comparisons of formal and informal volunteering are even rarer (Egerton and Mullan 2008; Lee and Brudney 2012).

We address these gaps by analyzing age and cohort trends in formal volunteering and informal helping. We use longitudinal data spanning two decades (1998–2018) from the nationally representative Health and Retirement Study (HRS), which includes a wide range of birth cohorts born between 1909 and 1958.

Helping Activities: Age and Cohort Trends

Both formal volunteering and informal helping are characterized as unpaid and non-mandatory activities performed for charitable or social purposes that benefit people outside one’s household. These two types of helping differ in whether they occur through formal organizations or as part of an individual’s informal social network (Taniguchi 2011). In addition, volunteering is often identified with a well-defined role to assist others in well-structured activities, whereas informal helping is more likely to focus on personal care and practical assistance, such as running errands, providing transportation, doing housework, providing childcare, and caregiving for friends and neighbors. Informal helping is often considered a less important kind of help, but assistance with what may seem to be minor tasks is often quite important to the recipients. In this context, informal helping has been described as a form of civic engagement that is invisible but nevertheless contributes greatly to building

and maintaining civil society (Martinez et al. 2011). Earlier research also suggested that informal helpers and volunteers may differ in their demographic characteristics (Taniguchi 2011) and that older people involved in informal helping are less likely to volunteer because of limited time and energy and a lack of opportunity (Burr et al. 2005). In contrast, other researchers suggested that informal helping behavior promotes volunteering (Jegermalm et al. 2019). In this study, we use a multivariate modeling framework, partly to account for the potential interdependency of formal volunteering and informal helping.

Given the well-documented individual and societal benefits associated with helping behaviors, there is a long-standing research interest in examining changes in helping behaviors across the life course (Hank and Erlinghagen 2009; Hendricks and Cutler 2004; Verbrugge et al. 1996). The research on this topic is guided by several theoretical perspectives (Morrow-Howell 2010). For example, the resource perspective explains participation in helping behaviors as a function of human, social, and cultural capital that tends to change over age and historical time (Wilson and Musick 1997); and socioemotional selectivity theory attributes age-related changes in participation to aging individuals' deliberate strategies of favoring more emotionally meaningful forms of engagement over other peripheral activities (Carstensen et al. 1999; Hendricks and Cutler 2004). A large body of empirical research guided by such theoretical frameworks focuses on age effects—participation rates that change over time with chronological age. This research has generally found that participation rates in unpaid socially productive activities are stable in middle age, increase in early old age, and decrease at the oldest ages (Wilson 2000). Considering the theoretical and empirical literature, we expect that individuals will gradually reduce their helping behaviors as they move from middle age to later life.

In addition to age trends, researchers are increasingly interested in uncovering birth cohort differences in participation rates, which are argued to be shaped by unique social, economic, political, and cultural forces experienced by members of each cohort born in the same or several adjoining years. Studies focusing on such cohort trends underscore the importance of birth cohort location, which represents a social-structural variable known to impact outcomes and life opportunities, including helping behaviors (Ryder 1965). For example, persons born in the 1920s experienced the Great Depression as teenagers, World War II as young adults, and cultural upheaval and economic stagnation in the United States during the 1960s and 1970s as middle-aged adults. As older adults, this cohort was impacted by the Cold War and the rise of globalization. Members of the baby boom birth cohort, especially the first half of the baby boom cohort, benefited from the post-World War II economic boom as children and confronted the cultural changes of the 1960s and 1970s as young adults. Boomers lived through an expansive technological revolution and globalization as middle-aged adults. These events encountered at different points in the life course shaped volunteering motivations, opportunities, and experiences and even conditioned individuals' particular volunteer activities (Clifford 2021). Further, other major historical and cultural changes in the United States during the twentieth century impacted volunteering behavior. These forces include a rise in education levels among more recent cohorts, a rise in individualism, a reduction in family size, women's increased labor force participation, increases in employment in later life,

cycles of economic prosperity and depression/recession, secularization, increases in divorce, and increasing life expectancy.

Scholars have theorized that modernization and individualization, partly by disrupting the stability of family and work life, led to cohort differences in individuals' participation in social activities, such as formal volunteering (Hustinx and Lammertyn 2003). Such views often predict declines in social and civic engagement among more recent cohorts. Putnam's seminal work, *Bowling Alone: The Collapse and Revival of American Community* (2000), raised the possibility of declines in civic engagement—which would include formal volunteering—in America. Putnam specifically identified the baby boom cohort as the group that was spending less time on such activities, but a handful of studies that followed yielded mixed findings in terms of whether specific birth cohorts were devoting more or less attention to these activities (Einolf 2009; Goss 1999; Rotolo and Wilson 2004). A key objective of the current study is to add to the literature on birth cohort trends in volunteering and informal helping while not losing sight of important age trends. In predicting cohort trends, we draw on the resource perspective, which suggests that sources of capital are important for volunteering (and to a lesser degree for informal helping): we expect that more recent cohorts, who generally experience improvements in human and health capital, will have higher formal volunteering rates than earlier cohorts.

Age and Birth Cohort Differences in Volunteering

As noted earlier, studies have generally reported that older persons were somewhat less likely to volunteer than younger persons (Choi et al. 2007) and have explained the differences as resulting from life course factors, such as family formation, career factors, transitions from the paid workforce to retirement, health changes, widowhood, and reduction in social network size (Butrica et al. 2009; Hank and Erlinghagen 2009; Wilson 2000). Research findings on the extent and nature of cohort effects in volunteering in the United States have been equivocal. Some studies have found that members of more recent birth cohorts volunteer more than members of earlier birth cohorts (Einolf 2009; Goss 1999; Rotolo and Wilson 2004). Using nonprobability samples of marketing data, Goss (1999) found increases over time in volunteering for both the long civic generation (born in 1926–1935) and baby boomers (born in 1946–1964) but not for the silent generation (born in 1936–1945). Rotolo and Wilson (2004), examining a sample of women from the National Longitudinal Surveys of Labor Market Experience, reported no differences in volunteering between the silent generation and the long civic generation after they added controls to their models. They also found that the type of organization for which these women volunteered changed over time. Using Midlife in the United States (MIDUS; <https://www.midus.wisc.edu/>) data from 1995 and 2005, Einolf (2009) showed that the early baby boom cohort (1946–1954) was somewhat more likely to volunteer than the silent generation (1936–1945), and the silent generation was more likely to volunteer than the long civic generation (1926–1935). In general, analysis of the long-term trends in volunteering has been relatively scarce, warranting further investigation (Wilson 2012).

In addition to U.S.-based studies, a growing body of evidence using European data has documented cohort differences in volunteering. A recent study based on administrative data in England and Wales found a gradual decline in the propensity for voluntary service participation among recent birth cohorts (Clifford 2021). In contrast, a Dutch study using data from the Longitudinal Aging Study Amsterdam demonstrated that relative to earlier birth cohorts, more recent birth cohorts volunteered more and participated more in other forms of social activity (van Groenou and Deeg 2010). These differences were explained largely by variability in educational achievement across members of the two birth cohorts. A related study using these data showed that religious involvement was also related to differences in volunteering activity (Suanet et al. 2009), with people who were more religious being more likely to volunteer.

To our knowledge, a study by van Groenou and van Tilburg (2012) represents the only examination of volunteering that attempted to disentangle age and birth cohort effects among middle-aged and young-old adults. Consistent with their previous findings (van Groenou and Deeg 2010), they reported that members of the more recent cohort volunteered more than members of the earlier birth cohort. In addition, they documented age effects: over the six-year observation period, volunteering increased for those aged 55–59 at baseline, remained steady for those aged 60–64, and decreased for those aged 65–69.

Age and Birth Cohort Differences in Informal Helping

Compared with studies on formal volunteering, research focusing on changes in informal helping by age and birth cohort are less common. In one such study, Choi and colleagues (2007), using HRS data from 1998 and 2000, found that persons in the older age groups were less likely to engage in informal helping. A European study by Hank and Stuck (2008) documented similar age differences in informal helping behavior. However, both studies were conducted over relatively short observation periods, making it difficult to accurately evaluate trends in informal helping behavior. In addition, we currently do not know how informal helping activities compare across birth cohorts or whether the age trends in this activity vary across birth cohorts.

Factors Associated With Helping Behaviors

In addition to demographic characteristics (e.g., gender, race/ethnicity) that are known correlates of volunteering and informal helping, earlier research identified other factors associated with the likelihood of engaging in these activities. These characteristics include human capital (e.g., education, income, wealth), social capital (e.g., social relationships, voluntary association membership), health capital (e.g., adequate health, disability status), cultural capital (e.g., religiosity), and labor force status (Butrica et al. 2009; Egerton and Mullan 2008; Li and Ferraro 2006; Mutchler et al. 2003; Taniguchi 2006, 2011; van Groenou and van Tilburg 2012; Wilson 2000, 2012). We consider these factors in our evaluation of age and birth cohort trends in formal volunteering and informal helping.

The Current Study

Understanding cohort and age trends in volunteering and informal helping may assist in estimating the future trends of these activities and may assist policymakers and nonprofit organizations in the promotion of, and planning for, these behaviors (McCulloch 2014). To this end, the current study estimates temporal trends in volunteering and informal helping behavior, focusing on age and cohort variations. We use longitudinal data spanning two decades drawn from a nationally representative sample of middle-aged and older Americans from the HRS to provide an empirical basis for identifying similarities and differences in the dynamics of these two helping behaviors. We contribute to the scientific literature on these issues by examining the age and birth cohort trends for volunteering and informal helping in later life, respectively, in the U.S. context. Additionally, we explore the relationship between the two behaviors over time.

Methods

Data Source

This study was based on data from 11 waves of the Health and Retirement Study (1998–2018), an ongoing biennial panel survey of U.S. adults (Sonnega et al. 2014). The HRS initially collected data from respondents aged 51–61 in 1992 but subsequently added respondents from more recent and earlier birth cohorts, yielding a nationally representative sample of Americans over age 50. The HRS replenishes the sample every six years (e.g., 1998, 2004, 2010, and 2016) with cohorts not previously represented in the study (Sonnega et al. 2014). The HRS contains rich information on health, labor force participation, family structure and relationships, economic characteristics, and psychosocial characteristics (Sonnega et al. 2014). Data for this study were primarily taken from the RAND HRS Longitudinal File 2018 (V1), a cleaned, user-friendly version of the original HRS data that accounts for missingness through imputation and correction of inconsistent information across waves (RAND Center for the Study of Aging 2021). Information on volunteering and informal helping was not part of the RAND file; these variables were taken from the public-use HRS data provided by the Survey Research Center at the University of Michigan.

Study Sample

We focused on five 10-year birth cohorts in the HRS, defined as participants born in 1909–1918, 1919–1928, 1929–1938, 1939–1948, and 1949–1958. We followed them from age 50 until they reached age 89 during the observation period (see Figure S1; all figures and tables denoted with an “S” are available in the online appendix). Although we included all HRS participants newly replenished to the HRS up to the 2010 wave, we excluded those added to the HRS in more recent waves (e.g., late baby boomers born after 1960, who were added in 2016), who were generally younger and had fewer observation points. We labeled the 1909–1918 birth cohort as the

World War I generation. The 1919–1928 and 1929–1938 birth cohorts corresponded approximately to the *long civic generation*, the 1939–1948 birth cohort corresponded approximately to the *silent generation*, and the 1949–1958 birth cohort corresponded to the first half of the *baby boom generation*. We first identified 29,914 age-eligible HRS participants interviewed during the 1998–2018 observation period. A small number of participants with missing information for the sociodemographic measures (e.g., gender, race/ethnicity, education, religiosity) were excluded from the study sample ($n=59$). Study participants were included in the analyses until they were lost to the HRS sample for any reason, including death. Missing information on key study variables was minimal (approximately 0.35% of person-wave observations); these missing person-wave observations were excluded from the analysis. The final analyses included 180,465 person-wave observations collected from 29,816 participants, equivalent to approximately six waves of observations per participant.

Measures

Formal volunteering was based on participants' responses to the question assessing whether they spent any time in the past 12 months volunteering for religious, educational, health-related, or other charitable organizations (1 = yes, and 0 = no). Similarly, informal helping activity was based on participants' responses to the question assessing whether they spent any time in the past 12 months helping friends, neighbors, or relatives they did not live with and did not receive pay for helping (1 = yes, and 0 = no).

Age was measured in years (range = 50–89). Gender was treated as a binary variable (1 = female, and 0 = male), and race/ethnicity included four categories (1 = non-Hispanic White [reference group]; 2 = non-Hispanic Black; 3 = non-Hispanic other race; and 4 = Hispanic, any race). Marital status was coded as a dichotomous variable (1 = coupled [i.e., married/partnered], and 0 = not). Education was measured in years of completed education (range = 0–17). Household wealth (assets minus debts) was transformed by the inverse-hyperbole sine function to account for skewness and sub-zero values. Paid work status was based on whether participants reported that they were currently working for pay (1 = working, and 0 = not working). Self-reported religiosity was a dichotomous variable (1 = religion is very important in life, and 0 = religion is somewhat or not too important in life); this variable was assessed at the earliest available wave because the question was not included in the HRS consistently across the observation waves. Disability was measured as the number of limitations in five activities of daily living (ADL) items (range = 0–5). Marital status, household wealth, paid work status, and disability were assessed at each wave and were thus treated as time-varying covariates in the analyses; other variables were treated as time-invariant covariates.

Analytic Strategy

Our central objective was to estimate age and cohort trends in formal volunteering and informal helping behaviors. We took advantage of repeated measurements and the

overlapping age distributions across the cohorts in the longitudinal HRS data, using multilevel models based on an accelerated longitudinal design (Miyazaki and Raudenbush 2000; Yang and Land 2013); see Figure S1 for a graphical depiction of the longitudinal sample design for the five 10-year birth cohorts. Given that volunteering and informal helping were measured as binary variables, we employed generalized mixed models with a probit link that facilitated the computation and modeling of the complex covariance structure. The abbreviated multilevel equations used to estimate changes in helping behaviors are given here. The basic Level 1 equation for each helping behavior is

$$\text{probit}(y_{it}) = \pi_{0i} + \pi_{1i}Age_{it} + \pi_{2i}Age_{it}^2 + \pi_{3i}Age_{it}^3, \quad (1)$$

where y_{it} is the probability that individual i will engage in a helping behavior at time t , and Age_{it} is the age of individual i at time t . We added quadratic and cubic terms (i.e., Age_{it}^2 , Age_{it}^3) to capture age trends unaccounted for by the linear term. To mitigate potential bias resulting from systematic differences in mean age across the cohorts (i.e., earlier cohorts are always older than more recent cohorts; Miyazaki and Raudenbush 2000; Yang and Land 2013), we centered age on the median age of the 10-year birth cohort to which the individual belonged. Consequently, the intercept π_{0i} is the expected probability of the helping behavior of individual i at the median cohort age; π_{1i} , π_{2i} , and π_{3i} represent linear, quadratic, and cubic rates of change per year of age, respectively, for individual i . For the Level 2 equation, individual parameters for the intercept π_{0i} and linear age π_{1i} were allowed to vary depending on stable person-level characteristics (e.g., birth cohort membership), thereby estimating a distinct age trajectory for each cohort. The Level 2 equations are

$$\pi_{0i} = \beta_{00} + \sum_{j=1}^4 \beta_{0j} c_{ji} + u_{0i}, \quad (2)$$

$$\pi_{1i} = \beta_{10} + \sum_{j=1}^4 \beta_{1j} c_{ji} + u_{1i}, \quad (3)$$

where $c_{ji} = 1$ if person i was part of cohort $(j+1)$ for $j = 1$ (1919–1928), 2 (1929–1938), 3 (1939–1948), or 4 (1949–1958); $c_{ji} = 0$ otherwise (i.e., the earliest birth cohort, 1909–1918, is the reference group). In Eq. (2), β_{00} represents the expected probability that an individual at the median age in the earliest birth cohort (1909–1918) engaged in the helping behavior, and β_{0j} represents the average difference in the rate of helping between cohort $(j+1)$ relative to the reference group (i.e., 1909–1918 cohort). In Eq. (3), β_{10} captures the expected linear rate of change in the 1909–1918 cohort, and β_{1j} represents an age-by-cohort interaction, capturing the effects of intercohort variation in the rate of linear change. Also, u_{0i} and u_{1i} in Eqs. (2) and (3) represent the random effects for the intercept and linear age, respectively. A similar Level 2 equation that includes an age-by-cohort interaction term was specified for π_{2i} (i.e., quadratic age); however, random effects were not specified because of the complex covariance structure (which was compounded by our multivariate approach, as discussed later). Because the interaction term involving cubic age (specified for π_{3i}) did not contribute to explaining the changes in either helping behavior, we dropped it from the final model.

Further, we considered the intraindividual linkage between volunteering and informal helping behavior by using multivariate models in which we estimated over-time changes in the two behaviors in the same model (for a similar approach,

see Ang 2019; Hank and Stuck 2008). That is, the multilevel models estimating the probability of volunteering and the probability of informal helping were estimated simultaneously in a single model, where the random effects for the intercept and linear age for the respective behaviors were allowed to be correlated and estimated through an unstructured variance–covariance matrix. Importantly, both the covariance between random intercepts and the random age slopes allowed us to examine whether unobserved characteristics associated with respective behaviors were correlated. This analysis therefore provides indirect, correlational evidence for the existence of relevant societal opportunities and barriers, as well as person-level characteristics related to engaging (or disengaging) in helping behaviors over time (Hank and Stuck 2008).

The multivariate multilevel models were fit using MLwiN (version 3.05) via Stata's *runmlwin* command (version 16.1). We used Bayesian Markov Chain Monte Carlo (MCMC) estimation methods with diffuse priors, and used quasi-likelihood methods to provide the MCMC procedure with initial values. Burn-in of 500 iterations with a total length of 5,000 iterations was used in all analyses. We first estimated an unadjusted model, in which we estimated the age and cohort parameters along with two time-invariant demographic characteristics (i.e., gender and race/ethnicity) added to Eq. (2). This model allowed us to assess the age and birth cohort trends for volunteering and informal helping in later life, holding constant gender and racial/ethnic composition across the cohorts. The multilevel models adjusted for unbalanced data (i.e., participants having unequal numbers of observations). We also accounted for potential selection bias due to attrition by including a binary indicator for survey nonresponse recorded during the observation period as a Level 2 covariate in Eq. (1). However, we did not make a similar adjustment for participants who were deceased during the observation period: doing so would introduce bias because mortality risk is a common outcome of both cohort location and helping behaviors in the Level 2 equation (i.e., endogenous selection bias). In the subsequent adjusted model, we added the full set of time-varying and time-invariant covariates, which allowed us to estimate age and cohort trends of helping behaviors while holding constant the resources for helping behavior engagement that vary across cohorts. We present posterior means for the coefficients and 95% credible intervals.

Results

Descriptive Findings

Descriptive characteristics of the study sample observed throughout the 1998–2018 study period are presented in Table 1. Sample characteristics stratified by cohort membership are presented in Table S1. Volunteering and informal helping behaviors were recorded for 33.6% and 52.7% of all person-wave observations, respectively. The mean age for the full sample across all person-wave observations was approximately 68 years. The earliest cohort, born in 1909–1918, had a median age of 85 years during the observation period (not shown in Table 1). The median ages for the more recent cohorts born in 1919–1928, 1929–1938, 1939–1948, and 1949–1958 were 79, 71, 64, and 58 years, respectively. Age-specific rates of volunteering and informal helping across the five cohorts over the study period are presented in Figure S2.

Table 1 Descriptive statistics of all study variables: Health and Retirement Study, 1998–2018

Variable	Mean/%	SD
Volunteering (%)	33.60	
Informal Helping (%)	52.69	
Age (years)	68.02	9.46
10-Year Cohort (%)		
1909–1918	3.49	
1919–1928	14.48	
1929–1938	30.07	
1939–1948	30.03	
1949–1958	21.93	
Female (%)	57.20	
Race/Ethnicity (%)		
Non-Hispanic White	70.78	
Non-Hispanic Black	16.03	
Non-Hispanic other	2.55	
Hispanic	10.63	
Coupled (%)	64.78	
Education (years)	12.42	3.30
Household Wealth (in \$1,000)	366.88	1,261.92
Median wealth (in \$1,000)	135.00	
Working for Pay (%)	35.72	
Religious (%)	64.74	
ADL Limitations	0.32	0.89
Attrition (%)	3.50	

Notes: $N = 180,465$ person-wave observations. ADL = activities of daily living.

Multivariate Multilevel Models

Results from the multivariate multilevel models are presented in [Table 2](#). A key advantage of our multivariate framework is that it reveals how the two behaviors are correlated over time through the modeling of the variance–covariance matrix. The covariance among the intercepts is 0.973 (95% CI = 0.935, 1.009) in the unadjusted model and 0.750 (95% CI = 0.718, 0.786) in the adjusted model (translating to correlation coefficients of .59 and .51, respectively): these figures indicate a positive relationship between a participant’s likelihood of volunteering and of informal helping. The covariance between the two age slopes does not differ from zero in the unadjusted model but is positive in the adjusted model; the estimated covariance of 0.003 (95% CI = 0.002, 0.003), translating to $r = .43$, indicates a positive correlation in person-specific rates of *change* in the likelihood of engaging in the two helping behaviors.

Volunteering

The pattern of results is similar for the estimated age and cohort parameters in the unadjusted and adjusted models. In the adjusted model, linear age is negatively associated with the probability of volunteering for those in the oldest cohort ($\beta = -0.101$; 95% CI = $-0.115, -0.081$), suggesting that people generally volunteer less as they

Table 2 Multivariate, multilevel models for volunteering and informal helping: Health and Retirement Study, 1998–2018

	Unadjusted						Adjusted						
	Volunteering			Informal Helping			Volunteering			Informal Helping			
	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	
Fixed Effects													
Age linear	-0.120	[-0.139, -0.107]	-0.112	[-0.121, 0.000]	-0.101	[-0.115, -0.081]	-0.104	[-0.113, -0.092]					
Age quadratic ^a	0.091	[-0.020, 0.182]	-0.747	[-0.835, -0.586]	-0.205	[-0.321, -0.093]	-0.401	[-0.467, -0.328]					
Age cubic ^b	-0.096	[-0.124, -0.068]	-0.049	[-0.079, -0.023]	-0.148	[-0.177, -0.116]	-0.092	[-0.128, -0.053]					
10-year cohort													
1919–1928	0.637	[0.467, 0.765]	0.373	[0.308, 0.437]	0.387	[0.238, 0.510]	0.269	[-0.128, -0.053]					
1929–1938	0.995	[0.796, 1.124]	0.812	[0.756, 0.876]	0.628	[0.486, 0.741]	0.633	[0.586, 0.713]					
1939–1948	1.086	[0.898, 1.210]	1.061	[1.010, 1.107]	0.609	[0.465, 0.718]	0.815	[0.764, 0.888]					
1949–1958	1.225	[1.043, 1.350]	1.216	[1.162, 1.274]	0.615	[0.503, 0.713]	0.912	[0.861, 0.978]					
Age linear × cohort													
× 1919–1928	0.047	[0.034, 0.065]	0.005	[-0.003, 0.014]	0.026	[0.006, 0.042]	0.003	[-0.008, 0.012]					
× 1929–1938	0.106	[0.093, 0.125]	0.046	[0.038, 0.054]	0.091	[0.069, 0.105]	0.042	[0.031, 0.050]					
× 1939–1948	0.123	[0.110, 0.143]	0.072	[0.063, 0.081]	0.109	[0.086, 0.123]	0.068	[0.056, 0.077]					
× 1949–1958	0.100	[0.086, 0.119]	0.085	[0.076, 0.095]	0.077	[0.056, 0.092]	0.078	[0.065, 0.087]					
Age quadratic × cohort^a													
× 1919–1928	-0.531	[-0.661, -0.391]	0.469	[0.302, 0.583]	-0.422	[-0.574, -0.256]	0.131	[0.016, 0.243]					
× 1929–1938	-0.400	[-0.490, -0.311]	0.585	[0.427, 0.680]	-0.262	[-0.382, -0.134]	0.264	[0.181, 0.335]					
× 1939–1948	-0.231	[-0.316, -0.131]	0.707	[0.544, 0.802]	-0.067	[-0.190, 0.054]	0.387	[0.305, 0.466]					
× 1949–1958	-0.011	[-0.141, 0.116]	0.772	[0.590, 0.900]	0.208	[0.045, 0.361]	0.444	[0.339, 0.560]					
Covariates													
Female	0.162	[0.126, 0.209]	-0.326	[-0.354, -0.299]	0.085	[-0.399, 0.125]	-0.345	[-0.377, -0.318]					
Race/ethnicity													
Non-Hispanic Black	-0.151	[-0.197, -0.105]	-0.404	[-0.434, -0.372]	0.019	[-0.058, 0.096]	-0.232	[-0.267, -0.196]					
Non-Hispanic other	-0.360	[-0.488, -0.194]	-0.399	[-0.479, -0.308]	-0.284	[-0.389, -0.174]	-0.315	[-0.390, -0.227]					
Hispanic	-1.028	[-1.088, -0.961]	-1.083	[-1.127, -1.041]	-0.310	[-0.399, -0.229]	-0.683	[-0.731, -0.633]					
Coupled					0.073	[0.046, 0.102]	-0.032	[-0.053, -0.010]					
Education in years					0.204	[0.193, 0.212]	0.086	[0.081, 0.091]					

Table 2 (continued)

	Unadjusted				Adjusted			
	Volunteering		Informal Helping		Volunteering		Informal Helping	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Household wealth ^c					0.042	[0.037, 0.048]	0.028	[0.024, 0.033]
Working for pay					0.045	[0.015, 0.073]	0.041	[0.021, 0.065]
Religious					1.093	[1.057, 1.135]	0.228	[0.201, 0.258]
ADL limitations ^d					-0.251	[-0.267, -0.236]	-0.255	[-0.266, -0.243]
Attrition	-0.105	[-0.199, -0.025]	0.009	[-0.049, 0.067]	-0.199	[-0.304, -0.100]	-0.054	[-0.113, 0.005]
Intercept	-1.812	[-1.928, -1.639]	-0.438	[-0.496, -0.385]	-2.468	[-2.551, -2.319]	-0.516	[-0.568, -0.444]
Selected Random Effects								
Intercept	2.787	[2.686, 2.889]	0.968	[0.936, 0.998]	2.600	[2.513, 2.702]	0.838	[0.792, 0.871]
Cov(volunteering, helping)	0.973	[0.935, 1.009]			0.750	[0.718, 0.786]		
Age	0.001	[0.000, 0.002]	0.001	[0.000, 0.001]	0.012	[0.011, 0.013]	0.003	[0.001, 0.004]
Cov(volunteering, helping)	-0.0002	[-0.0004, 0.00001]			0.003	[0.002, 0.003]		
Intercept-slope covariance	0.017	[0.013, 0.024]	0.014	[0.011, 0.018]	0.030	[0.023, 0.039]	0.013	[0.011, 0.015]

Notes: Sample $N = 29,816$ (180,465 person-wave observations). The table displays posterior means for the coefficients and 95% Bayesian credible intervals (CIs). CIs are based on the 2.5th and 97.5th quantiles of the posterior distribution; Bayesian CIs that do not contain zero are shown in bold. ADL = activities of daily living.

^a Estimates are multiplied by 100 to reduce leading zeros.

^b Estimates are multiplied by 1,000 to reduce leading zeros.

^c Transformed by the inverse hyperbole sine.

^d Count of five ADL limitations.

age; however, the age trend is further characterized by the negative quadratic and cubic terms, suggestive of a curvilinear trajectory (see [Table 2](#) and [Figure 1](#)). The cohort effects for the four 10-year cohorts compared with the earliest birth cohort (β s ranging from 0.387 to 0.628) indicate that more recent cohorts generally had higher volunteering rates than the earliest cohort. This finding is not surprising given that each successive cohort had a lower median age during the observation period, as noted earlier. The estimated birth cohort effects for the linear age trend (i.e., the interaction terms involving age and cohort effects) are positive, suggesting that the age-related decline in volunteering rates was generally slower for more recent cohorts than for the earliest cohort. For three of the four 10-year birth cohorts, the quadratic age effect differs from that of the earliest cohort.

[Figure 1](#) presents a graphic representation of the age-cohort trends in volunteering based on predicted probabilities derived from the estimates presented in [Table 2](#) (see [Table S2](#) for predicted probabilities of helping behavior participation at select ages across the cohorts). In the unadjusted model (top panel), the curvilinear relationship between age with volunteering is clear. For the three 10-year birth cohorts situated between the earliest and most recent cohorts, volunteering rates were highest when they were in their 60s and steadily declined with age thereafter. In contrast, the most recent cohort showed a relatively high volunteering rate in their 50s, but this rate consistently declined throughout the observation period. Such age trends indicate that individuals from the most recent cohort volunteered at a higher rate in their 50s to mid-60s compared with their predecessors, but there was little evidence of meaningful intercohort differences in volunteering rates for participants in their late 60s and older. The adjusted model accounted for the human, sociocultural, and health capital resources for volunteering participation that were unevenly distributed across the five cohorts in this sample owing to age and cohort effects (see [Table S1](#)). As shown in the lower panel of [Figure 1](#), the differences in cohort effects are more distinct in the adjusted model, where the recent birth cohorts generally show a lower volunteering rate at a given age compared with the earlier birth cohorts.

Informal Helping

The general pattern of results for the estimated age and cohort parameters describing trends in informal helping is similar to the results for volunteering: the rate of informal helping declined with age across cohorts (see [Table 2](#)). The interaction terms involving age (both linear and quadratic) and birth cohort are mostly positive, indicating a slower pace of age-related decline in informal helping rates for the recent cohorts.

A graphical representation of the age-cohort trends in informal helping is presented in [Figure 2](#). Unlike for volunteering, the age trends for informal helping are marked by a consistent downward trajectory across all cohorts, although the rate of decline appears slower for the recent cohorts. Similar to volunteering, recent cohorts generally had a lower rate of informal helping behavior at a given age than the earlier cohorts—a finding more clearly shown in the adjusted model—but the age trajectories for the three recent cohorts appear to converge when participants reach their 70s.

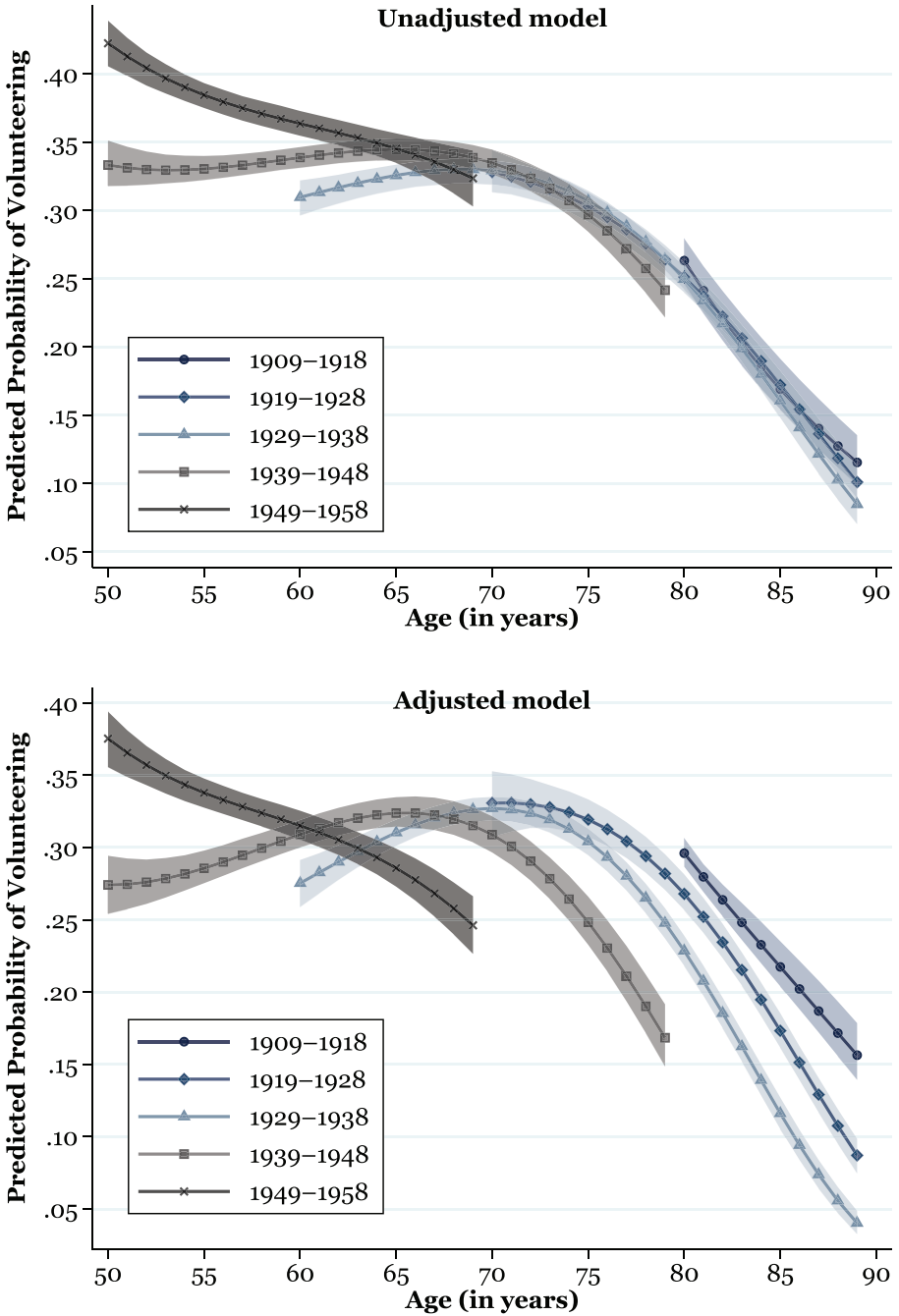


Fig. 1 Age-related changes in probabilities of volunteering for each 10-year cohort over the observation period (1998–2018). The plots are based on coefficients from the unadjusted (top panel) and adjusted multivariate models (bottom panel) presented in Table 2. Shaded areas denote 95% credible intervals. See Table S2 for predicted probabilities of volunteering participation at key ages across the cohorts, along with ratios of probabilities for adjacent cohorts.

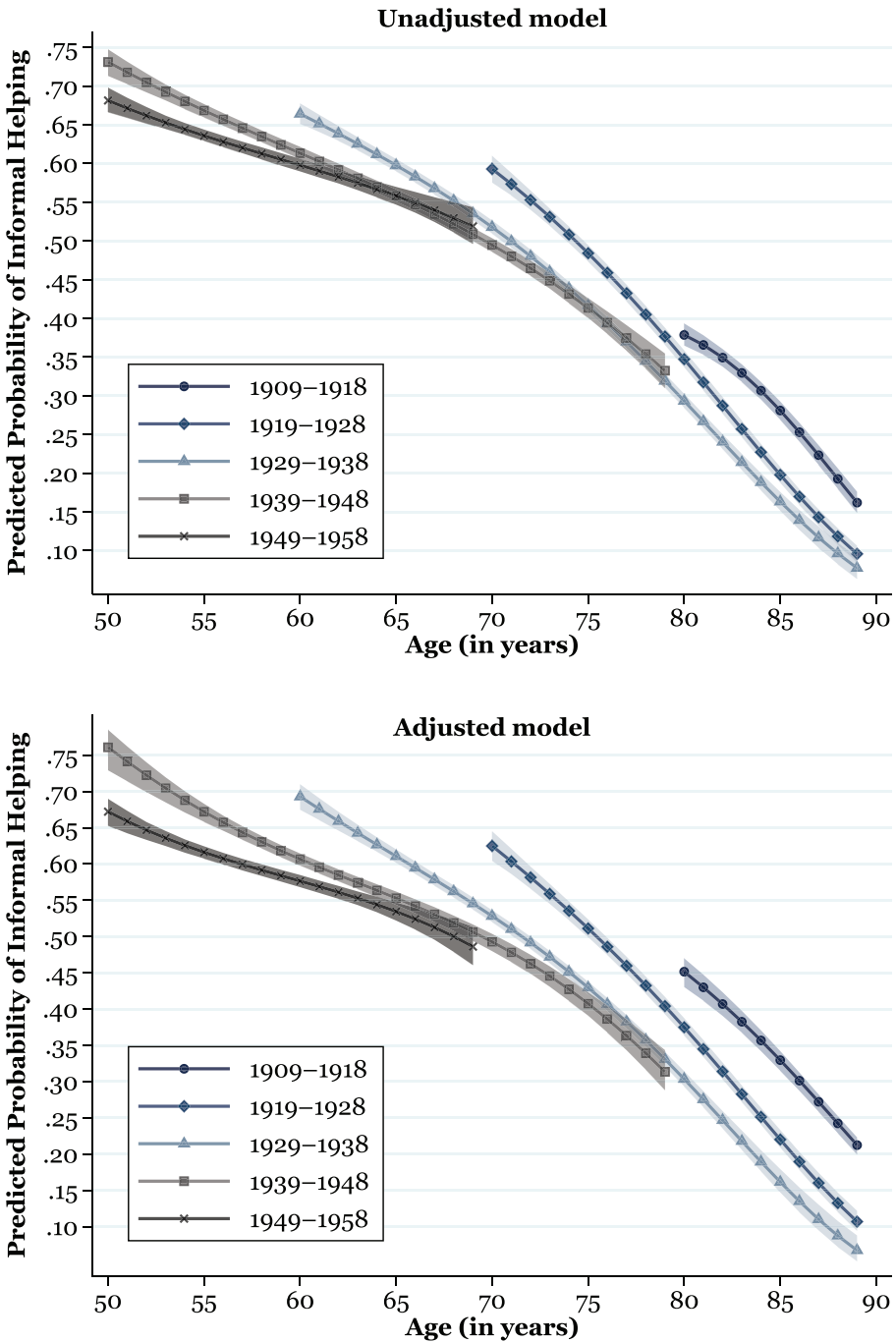


Fig. 2 Age-related changes in probabilities of informal helping for each 10-year cohort over the observation period (1998–2018). The plots are based on coefficients from the unadjusted (top panel) and adjusted multivariate models (bottom panel) presented in Table 2. Shaded areas denote 95% credible intervals. See Table S2 for predicted probabilities of informal helping participation at key ages across the cohorts, along with ratios of probabilities for adjacent cohorts.

Other Factors

We highlight how other study variables were related to the two helping behaviors (see [Table 2](#)). In both unadjusted and adjusted models, women had a higher rate of volunteering but showed a lower rate of informal helping than their male counterparts. Minority race/ethnicity was associated with a lower likelihood of engaging in informal helping in the unadjusted models. However, when all study variables were controlled for, there were no differences between non-Hispanic Black persons and non-Hispanic White persons. In the adjusted model, being in a coupled relationship was associated with a higher likelihood of volunteering but a lower likelihood of informal helping. Other study variables—human, sociocultural, and health capital resources and labor force status—were associated with engagement in both behaviors in the expected direction. As expected, those who were lost to the sample during the observation period had lower volunteering rates than those who remained in the study sample in both the unadjusted and adjusted models; their rates of informal helping did not differ.

Discussion

Given the importance of formal volunteering and informal helping for individuals, communities, and the health and well-being of those giving (Burr et al. 2021; Martinez et al. 2011), we aimed to document recent age and cohort trends in these two forms of helping behaviors. Using longitudinal, national data from the HRS, we estimated trends in formal volunteering and informal helping from 1998 to 2018 for five birth cohorts spanning five decades, with participants born between 1909 and 1958. In addition to providing a picture of the age trends in individuals' later-life helping behaviors and the intercohort variation in the age trends, our multivariate approach allowed us to describe the temporal correlation between formal volunteering and informal helping.

Age–Cohort Trends in Volunteering

Regarding age trends of volunteering, our findings are consistent with earlier research reporting a curvilinear, bell-shaped age curve over the life course (Goss 1999; see [Figure 1](#)). In the current study focusing on four decades (ages 50–89) during the latter half of the life course, volunteering remained relatively stable until approximately ages 70–75, when the probability of volunteering began to drop precipitously. An exception to this general age pattern is that the most recent birth cohort identified in this study (i.e., 1949–1958, the early baby boomers) appeared to have reached a peak rate of volunteering before reaching age 50. Although this peak appears to be higher than those of earlier cohorts, the age trend for this cohort declined throughout the observation period. However, we did not find support for meaningful intercohort variation in the age trend of volunteering, especially once participants reached late 60s (top panel, [Figure 1](#)). When we accounted for human, sociocultural, and health capital factors in the analysis, the birth cohort differences in volunteering became

more pronounced: the adjusted rates of volunteering were consistently lower for the recent cohorts than for their earlier cohort counterparts at a given age from the mid-60s onward (lower panel, [Figure 1](#)).

Our findings extend those from earlier studies documenting cohort differences in volunteering. The current study picks up where the Goss (1999) and Einolf (2009) studies ended. Goss's work was based on national marketing data collected annually from 1975 to 1998, and Einolf's work was based on two waves of MIDUS data collected in 1995 and 2005. Both studies observed baby boomers when they were in early and middle adulthood; they observed the silent and long civic generations during middle and late adulthood. Notably, Einolf (2009) reported that the early baby boomers volunteered more than the silent generation and that the silent generation volunteered more than the long civic generation. These results are not inconsistent with the current study's findings. We observed a similar pattern of birth cohort differences at earlier ages (e.g., 50s and early 60s in [Figure 1](#)). However, contrary to Einolf's (2009) prediction, our findings indicate that such cohort differences favoring recent birth cohorts did not extend into old age: the trend for participants from each successive cohort did not show a meaningful difference at a given age once they reach their mid- to late-60s.

Notably, various resources known to influence volunteering are unevenly distributed across the cohorts (see [Table S1](#)). When we accounted for such differences by statistically controlling for human, social, health, and cultural capital factors in the adjusted model, a clear pattern of cohort differences in age trends emerged. We conducted supplementary analyses to help decipher the nature of differences observed in the unadjusted and adjusted models. The variations appear to be driven largely by cohort differences in education that favor the more recent cohorts. Because education is positively associated with both cohort membership (with higher levels of education among recent cohorts than among earlier cohorts; see [Table S1](#)) and helping behaviors (with education positively correlated with helping behavior participation), estimated parameters for cohort membership in the unadjusted model that excludes education are substantially larger than those in the adjusted models (see [Table S3](#) and [Figure 3](#)). When we added education to the unadjusted model, mean differences in the rate of volunteering between each cohort relative to the earliest cohort were substantially reduced. This reduction was most pronounced for volunteering behavior among the most recent cohort ($\beta = 1.125$ to $\beta = 0.765$; a 32% reduction in effect size), subsequently leading to separation between cohort-specific trajectories.

In substantive terms, then, volunteering rates among individuals from recent cohorts were similar to those of individuals from earlier cohorts, despite the higher levels of education among recent cohorts. An alternative interpretation is that volunteering rates were lower among recent cohorts than among earlier cohorts at comparable levels of education. This finding is in line with Horowitz's (2015) report that the link between educational attainment and civic participation (assessed with behaviors such as contacting public officials and attending public meetings) was weakening among more recent cohorts. Education may, in part, be considered a period effect because the quantity and quality of education changed over time in the United States and each birth cohort experienced evolving education systems. As Ryder (1965:843) noted, "successive cohorts are differentiated by the *changing content of formal*

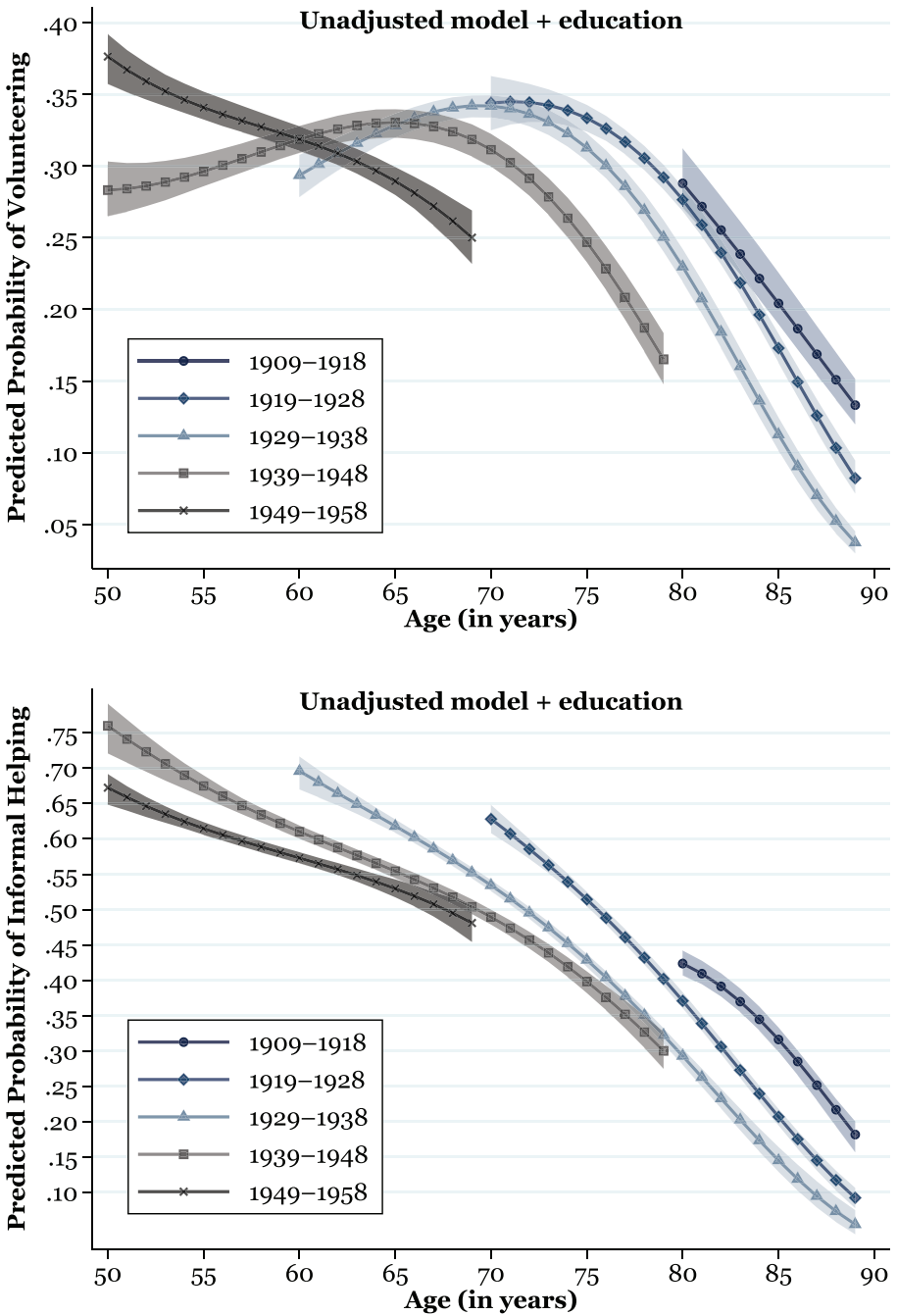


Fig. 3 Age-related changes in probabilities of volunteering (top panel) and informal helping (bottom panel) for each 10-year cohort over the observation period (1998–2018). The plots are based on coefficients from the multivariate model that adjusted for gender, race/ethnicity, survey nonresponse, and education, as presented in Table S3.

education, by peer-group socialization, and by idiosyncratic historical experience” (emphasis added). More research is needed to unpack these issues further.

Age–Cohort Trends in Informal Helping

Consistent with earlier research (Choi et al. 2007; Hank and Stuck 2008), we found that the estimated age trends of informal helping declined steadily throughout the observation period across the full age range evaluated (see Figure 2). That is, the probability of informally helping friends and neighbors who did not live with the participant was marked by a consistent downward trajectory during middle and late adulthood. We also observed birth cohort differences in the probability of informal helping trends, although the gaps between recent birth cohorts appeared to be closing as the participants aged. The probability of informal helping is typically greater for earlier birth cohorts, especially when comparing the World War I birth cohort and the long civic generation birth cohort with the early baby boomer birth cohort. To the best of our knowledge, no other study has examined cohort differences in informal helping. However, our findings are in line with recent reports of declining social interaction and contact with one’s neighbors observed over the past several decades in the United States (Ingraham 2017).

Linkages Between the Two Helping Behaviors

Our multivariate approach in examining volunteering and informal helping allowed us to examine whether unobserved characteristics associated with each behavior were correlated. We discovered a positive correlation between the two helping behaviors, consistent with an earlier study that took a comparable multivariate approach (Hank and Stuck 2008). Many participants who volunteered to support religious, educational, health-related, or other charitable organizations were more likely to help their friends, relatives, and neighbors in their communities. The pattern of individuals’ (dis)engagement in these behaviors over time was also interdependent. Thus, the two behaviors may be complementary, with engagement in one form of helping presenting motivations and opportunities for engagement in the other activity. Earlier cross-sectional research using data from the Americans’ Changing Lives survey demonstrated that older adults often provided help to others across multiple dimensions (Burr et al. 2005, 2007). This finding lends credence to the view that some people have a commitment to helping others and that this commitment spans different forms of helping activity. In addition, helping activities may place older adults in social situations where they learn about opportunities for volunteering and the needs of their fellow citizens, reinforcing the volunteer–community helper connection. At a broader level, our findings indicate that working for pay (another form of productive social engagement) was positively associated with both forms of helping behaviors (see Table 2). In supplementary analyses, we estimated models that included an indicator of family caregiving provided to spouses and parents with disabilities during the observation period (see Table S4). Caregiving often takes considerable time and resources, limiting caregivers’ capacity to participate in other helping behaviors in later life. We

found that family caregiving was positively associated with informal helping but was not associated with volunteering. This study's findings suggest that different forms of prosocial engagements may be clustered within a segment of the older population, who have been characterized elsewhere as "super-helpers" or "doers" (Burr et al. 2007; Hank and Stuck 2008), whereas other individuals find themselves increasingly disconnected from various forms of engagement as they age.

Finally, helping behaviors are shaped by gender, with women being more likely than men to engage in informal instrumental support and men being more likely than women to volunteer. Women in the United States have also witnessed substantial changes in their work and family roles over the last century, and educational attainment has recently increased more among women than among men (Wilson et al. 2011). Thus, we conducted additional analyses to determine whether the age-cohort trends we found varied by gender (see Table S5). Although we found some evidence of gender differences in age-cohort trends for volunteering (but not informal helping; see Model S5-B), the size of the estimates indicates that the gender differences were minor. Additional research is warranted to unravel helping behavior engagement by age and cohort for women and men.

In sum, the study findings indicate that compared with earlier cohorts, recent birth cohorts—namely, the silent and baby boomer cohorts—were similarly engaged in formal volunteering in later life but were generally less engaged in informal helping throughout middle and late adulthood. Although the current data did not allow us to answer why these patterns occurred, we observed these birth cohort trends in the context of human and health capital changes (e.g., education, life expectancy) that tend to favor recent birth cohorts. Interestingly, an analysis documenting the widespread decline in volunteer rates observed across the United States from 2002 to 2015 suggested that the change was more prevalent in states and other geographic areas (e.g., rural and suburban areas) historically rich in social capital (Grim and Dietz 2018). More research is needed to shed light on the social and cultural drivers of helping behaviors in the United States and elsewhere. However, we speculate that age-cohort trends in helping behaviors were likely influenced by a confluence of factors, such as competing leisure interests associated with in-home entertainment options (e.g., TV and other screen options) and increasing destandardization of work and family lives (Clifford 2021; Livingston 2019)—all of which may have a more significant and long-lasting impact on more recent cohorts' social engagement as they reach late adulthood. In addition, cohort trends in volunteering rates may be partly shaped by factors on the demand side of the equation, such as the growing demand for specialized expertise from voluntary organizations (Clifford 2021), and the number of opportunities available to older adults in general may not be keeping pace with the rapid growth of the aging population. A better understanding of various sociocultural factors and structural facilitators and barriers will bolster voluntary organizations in their efforts to recruit and retain baby boomers and successive birth cohorts reaching middle and later adulthood. Finally, despite a lack of any growth trend across cohorts in overall helping behaviors, the majority of the baby boomers in our sample were still providing informal help outside of formal institutions at ages as late as their 60s. This finding indicates that helping others remains a defining characteristic of the American population well into later life and that individuals from more recent birth cohorts may be an underutilized resource for volunteering.

Limitations and Contributions

The study's findings should be interpreted in the context of some limitations. The current research design did not account for period effects, in part owing to the identification problem associated with the well-known linear relationship between age, period, and cohort (Yang and Land 2013). As earlier studies noted, however, period effects may sometimes be considered trivial and thus can be omitted from models when the study's theoretical focus is aging and the data analyzed are based on true cohorts rather than synthetic cohorts (Yang and Land 2013), as in the current study. Hence, we assumed that period effects of sociohistoric events during the observation period manifested through cohort succession rather than through identically influencing the helping behaviors of different cohorts (Ang 2019). Further, we did not consider the specific amount of time contributed to volunteering and informal helping or the specific types of volunteering or informal helping activities in which participants engaged, partly because of data limitations in the HRS. Intercohort variations in helping behaviors may be further manifested in the type of helping behavior (e.g., the organization through which individuals volunteer) and how much time volunteers devote to helping others (Goss 1999; Rotolo and Wilson 2004).

Although we accounted for survey attrition in the analyses, our estimates may be biased by another important form of selection effect: individuals who participate in surveys (e.g., the HRS) are also more likely to participate in other forms of voluntary activities (e.g., volunteering; Abraham et al. 2009). Another limitation of the HRS is that we cannot draw on the question about informal helping to determine the extent to which older adults were focusing their helping behaviors toward persons with whom they were emotionally close or whether some of the informal help provided to others outside the household is caregiving in the usual sense provided to relatives and others. Finally, the measurement of birth cohort boundaries is inconsistent in the literature on volunteering, with different studies (including the current study) defining the long civic generation, the silent generation, and the baby boom generation differently, often because of data limitations. To partially address this issue, we conducted sensitivity analyses using the HRS-defined birth cohorts (Sonnegga et al. 2014); the results were similar to those reported here (results available upon request).

Despite these limitations, this study makes several contributions to the scientific literature. Through multivariate modeling, we directly compared trends in age and birth cohort effects for formal volunteering and informal helping from a single data source, showing that these behaviors are temporally correlated. Using longitudinal data spanning two decades from the HRS and applying a Bayesian generalized modeling approach to model nonlinear trajectories for the two helping behaviors represent another key strength of the study. This study is among the first to include early baby boomers when examining intercohort variations in volunteering and informal helping behaviors in later life. When data become available, future research should examine volunteering and informal helping over even longer periods. Such an examination would allow for a description of age and birth cohort trends through longer intervals of the life course, also providing the opportunity to examine more recent birth cohorts (e.g., Generation X, millennials). Research shows that millennials are participating less in voluntary associations and that they volunteer less than older cohorts (Ertas

2016; McCulloch 2014). Whether the same pattern will hold for late-life engagements in prosocial helping behaviors remains an open question. ■

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