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Research Article

Volunteering Dynamics and Life Satisfaction: Self-Perceptions of Aging as a Buffer

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Abstract

Objectives: Research has extensively documented the concurrent benefits of being a volunteer (vs a nonvolunteer), but little is known about older adults who once served as a volunteer but then stopped at some point in their lives (i.e., former volunteers). The current study tracked changes in older adults' overall life satisfaction and compared these changes among former volunteers, continuous volunteers, and continuous nonvolunteers. We also examined whether self-perceptions of aging may serve as a long-term psychological buffer and protect former volunteers' life satisfaction after they quit volunteering.

Method: Data were from the *Health and Retirement Study* (2006–2016). A pooled sample of participants aged 50+ (N = 10,441) indicated volunteer behaviors every other year, and we identified volunteering dynamics based on their volunteering history across 4 waves (8 years). Participants reported on self-perceptions of aging and life satisfaction in the Leave Behind Questionnaire once every 4 years.

Results: Continuous volunteers reported greater subsequent life satisfaction than former volunteers and continuous nonvolunteers 4 years later, when we adjusted for their baseline life satisfaction. Yet, the difference between continuous volunteers and former volunteers was absent among participants with more positive self-perceptions of aging.

Discussion: This study reveals a potential discontinuity in the benefits of volunteering as older adults transition out of their volunteer activities. Findings, however, also reveal individual differences by self-perceptions of aging, offering suggestive evidence that may refine interventions to prolong the benefits of volunteering.

Keywords: Age stereotype, Cessation, Health and Retirement Study, Subjective well-being, Volunteer

A growing body of evidence documents the contributions that older adults make to their communities as volunteers, providing unpaid services to people beyond their households via religious, educational, health-related, or other charitable organizations (Carr, 2018). Volunteering is advocated as a key way to maintain productive engagement in later life (Carr et al., 2015), and older volunteers typically live longer, healthier, and happier than those who do not volunteer (Anderson et al., 2014; Burr et al., 2021). More recently, studies have begun to assess the dynamics of volunteering (i.e., transition in or out of volunteer activities), examining positive outcomes of initiating a volunteer role and reasons why volunteers quit (Carr et al., 2018a, 2018b; Tang et al., 2010; Willems et al., 2012). The common goal of these studies is to retain more older adults as volunteers and maximize the benefits of volunteering to older populations. Yet, all—especially older—volunteers transition out of volunteer roles at some point in their lives (Butrica et al., 2009). It is crucial to understand whether prior volunteer experience may cast lasting benefits to older adults who used to volunteer but then stop (i.e., former volunteers). The current study compared former volunteers

to older adults who continue to volunteer during a subsequent period of time after former volunteers quit (i.e., continuous volunteers) and those who are continuously not involved (i.e., continuous nonvolunteers). We drew on prospective data to identify older adults in these three categories and track changes in their life satisfaction—their subjective appraisal of overall life quality and well-being (Ramia & Voicu, 2020).

This study also made a unique contribution by addressing individual differences in the link between volunteering dynamics and life satisfaction. We focused on older adults' attitudes towards getting older (i.e., self-perceptions of aging [SPA]; Levy, 2009), which have been shown to directly influence their life satisfaction (Brothers et al., 2017; Steverink et al., 2001; Wurm et al., 2008). Yet, this study explored a potential protective effect of SPA on life satisfaction as older adults transition out of volunteer activities. Indeed, it has been posited that SPA can aid individuals in accumulating psychological resources and buffer them against stressful events (Humberg et al., 2019; Levy et al., 2016; Westerhof & Wurm, 2015). Findings can help to identify former volunteers who may be at greater risk for poor well-being. Because SPA are known to be modifiable via volunteering (Huo et al., 2020), this study may also inform interventions intended to prolong the benefits of volunteering, such as by emphasizing SPA training in volunteering programs.

Volunteering Dynamics and Life Satisfaction

Older volunteers, in particular those who volunteer regularly, report greater life satisfaction over time (Binder & Freytag, 2013; Hansen et al., 2018; Meier & Stutzer, 2008; Windsor et al., 2008). Most studies have focused on volunteers and nonvolunteers, but less is known about older adults who used to volunteer but then become nonvolunteers with regard to changes in their life satisfaction. The current study addressed this gap by examining the impact of past volunteer experience and cessation of volunteering.

Scholars have put forth models to understand the salubrious effects of volunteering among older populations (Anderson et al., 2014; Burr et al., 2021; Carr et al., 2015), which also guided our hypothesis. These models commonly propose that volunteering may lead to better well-being outcomes in later life via increased social, physical, and cognitive activities. Studies have also considered the uniqueness of volunteerism as a salient role in older adults' lives, which strengthens their self-identity as a valued member of the community (Thoits, 2012). These findings explain the difference we expect to observe between (continuous) volunteers and nonvolunteers. As for former volunteers, they no longer engage in activities related to volunteering, such as social interactions with elementary school students while tutoring, physical activities involved in delivering food donations for people in need, or cognitive engagement in tutoring younger generations. Yet, it is unclear whether their prior volunteer experiences continue to protect them as someone who has once served and contributed to the community. Indeed, some psychological resources these former volunteers have gained may be retained, at least for a certain period of time. For example, former volunteers may have accumulated a greater sense of purpose, usefulness, self-efficacy, and more positive/less negative SPA than those who never volunteer (Gruenewald et al., 2016; Huo et al., 2020; Müller et al., 2014).

A few studies have examined former volunteers but revealed mixed findings. Two studies from data of British and German older adults found that the benefits of volunteering disappeared when older adults stopped volunteering, reflected in a significantly greater reduction in their life satisfaction (Binder & Freytag, 2013; Meier & Stutzer, 2008). Yet, Binder and Freytag (2013) compared former volunteers with older adults who continuously volunteer monthly or more; it remains unclear whether these former volunteers still have greater life satisfaction than those who never volunteer. Meier and Stutzer (2008) relied on two-wave data with the interval of 2 years; it is possible that some of these identified former volunteers temporarily dropped out due to some other emergencies that also reduced their life satisfaction. In contrast, a recent study of 12 European countries showed no difference in changes of life satisfaction among continuous volunteers, new volunteers (those who started), and former volunteers (those who stopped; Hansen et al., 2018). Hansen and colleagues (2018) argued that it could be the volunteer experience, rather than persistence, that underlies the benefits of volunteering, but again, that study identified the dynamics of volunteering using only two waves of data.

To extend prior research, we utilized more data points to identify former volunteers, continuous volunteers, and continuous nonvolunteers across 8 years (see Carr et al., 2018b). We defined former volunteers as older adults who sustained volunteering for at least 4 years and then stopped volunteering for another 4 years to exclude those who temporarily dropped out of the program. We expected continuous volunteers to report greater life satisfaction than former volunteers, who reported greater life satisfaction than continuous nonvolunteers, when baseline life satisfaction is considered.

Differences by SPA

We also asked whether the effect of volunteering dynamics on life satisfaction varies depending on older adults' SPA before the cessation of volunteering. Stereotype embodiment theory posits that individuals assimilate age beliefs across the life span, which become self-relevant in later life and influence older adults' lives and well-being (Levy, 2009). Most empirical studies have linked SPA directly to well-being outcomes (Han & Richardson, 2015; Levy et al., 2002, 2014; Westerhof et al., 2014), including life

satisfaction (Brothers et al., 2017; Steverink et al., 2001; Wurm et al., 2008). A small yet growing body of research has also begun to test the moderating effect of these self-perceptions, but that work has primarily focused on physical and cognitive health (Levy et al., 2016, 2018). We added to this literature with a focus on older adults' overall life satisfaction.

SPA can be positive or negative, which serve as a buffer or a barrier against well-being (Levy, 2009). The heuristic model of SPA suggests that more positive SPA facilitate the accumulation of psychological resources and help regulate behaviors that may benefit individuals' well-being (Westerhof & Wurm, 2015). These resources and regulations may be protective when stressful events or transitions occur. In this study, we focused on the transition as older volunteers discontinue volunteering-related activities. Research has found that individuals with more positive SPA tend to become more socially involved over time (Schwartz et al., 2021). Although former volunteers may experience a reduction in social contact and connections, those with more positive SPA are more likely to compensate by engaging in other social activities. Positive SPA have also been shown to buffer individuals against cumulative stress (Levy et al., 2016) and promote their psychological adjustment (Humberg et al., 2019), such that former volunteers with more positive SPA may better navigate hardship and handle their lives after they stop volunteering and lose social and physical resources they used to possess as active volunteers. We expected that former volunteers with more positive SPA would report similar levels of subsequent life satisfaction as continuous volunteers. We extended prior research by explicitly testing whether less negative SPA also help. Indeed, recent research has offered evidence that positive and negative SPA may have differential impact on health outcomes (Brown et al., 2021; Turner et al., 2021).

Other Factors as Covariates

We adjusted for additional demographic characteristics and health indicators associated with volunteering and life satisfaction. Demographic characteristics included participants' age, gender, education, income, wealth, marital status, racial/ethnic minority status, employment status, caregiver status, and participation in religious activities. Older women, married, and retired older adults are more likely to volunteer (Carr et al., 2015; Manning, 2010). Older adults with lower socioeconomic status and from racial/ethnic minority groups are less likely to volunteer (Johnson & Lee, 2017; Tang et al., 2012). Caring for an adult with disabilities may cause role strain on older adults and even lead to the cessation of volunteering (Tang et al., 2010; Thoits, 2012). Individuals who are more religious and attend more religious activities may also feel more motivated to volunteer and serve the community due to a sense of duty (Choi, 2003).

Health indicators were measured with self-rated health, number of chronic conditions, and functional limitations. Poor physical health limits older adults' ability to volunteer and is also associated with reduced life satisfaction (Li & Ferraro, 2006; Principi et al., 2016; Puvill et al., 2016). We also adjusted for life satisfaction at baseline, given that research has shown that greater life satisfaction also leads to more engagement in volunteering (Bjälkebring et al., 2021).

In sum, the current study relied on longitudinal data from the *Health and Retirement Study* (HRS) to track older adults' volunteer behavior history and life satisfaction. Using prospective data, we identified former volunteers, continuous volunteers, and continuous nonvolunteers. We also examined subsequent 4-year changes in life satisfaction after former volunteers stopped volunteering (i.e., baseline). We expected continuous volunteers to report greater life satisfaction than former volunteers, who report greater life satisfaction than continuous nonvolunteers, while baseline life satisfaction is adjusted for (Hypothesis 1). We also expected this association to vary depending on SPA, and that former volunteers with more positive/less negative SPA would report similar subsequent life satisfaction as those who continuously volunteer (Hypothesis 2).

Method

Data and Study Sample

Data were from the HRS, which began in 1992 with a nationally representative sample of Americans aged 50+ and their spouses (recruited regardless of age). HRS has been fielded every other year. The main questions addressed in this study are how the dynamics of volunteering influence the change in life satisfaction over time, and whether SPA moderate this influence. We utilized four waves of data on participants' volunteer behaviors (from wave $t - 1$ to wave $t + 2$) to identify the dynamics of volunteering (i.e., former volunteers, continuous volunteers, continuous nonvolunteers) in each of the four-wave periods (see detailed description below; see Figure 1). We considered changes in life satisfaction between wave t and wave $t + 2$. Wave t was considered as the baseline because it was when former volunteers provided the last set of data before they stopped volunteering. Participants have been asked about their volunteer behaviors since 1996, but questions about their life satisfaction and SPA were not added to

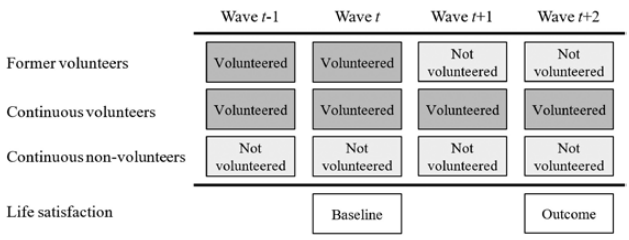

Figure 1. Predictors, outcomes, and data structure.

the HRS until 2008. The current study analyzed data from 2006 to 2016, which included three 4-wave periods (i.e., 2006–2012, 2008–2014, and 2010–2016).

We set strict limits on the assessment of volunteering dynamics (see Supplementary Figure 1 for a flow chart). In total, 18,455 participants partook in at least four consecutive waves between 2006 and 2016, among whom 100 participants had missing data on volunteer behaviors for more than three waves (making it impossible to identify a volunteering dynamic), and 4,336 did not fall into any category of the dynamics (meaning they transition in and out of volunteer status randomly). We found that these 4,336 participants were more likely to be minority than the remaining 14,019 participants.

The key outcome and moderator variables were both measured in the Leave Behind Questionnaire (LBQ; Participant Lifestyle Questionnaire; Smith et al., 2017), which was administered to two halves of the sample in alternate waves. That is, a random half of the sample completed the LBQ in one wave, and the other half completed the LBQ in the next wave (i.e., 2 years later). Each collection of LBQ data from the same sample occurred once every 4 years. In order to make use of participants' data from the core interview and the LBQ, we matched participants' reports based on the interview year and assigned a period indicator to each participant. A period went from $t - 1$ to $t + 2$, during which the moderator had to be measured at t and the outcome measured at t and $t + 2$. In the remaining 14,019 participants, 10,712 were successfully matched but 271 were younger than 50 years old. The final sample included 10,441 participants.

Measures

Volunteering dynamics

In the core interview, participants indicated whether they had spent any time in the past 12 months doing volunteer work for religious, educational, health-related, or other charitable organizations (1 = *yes*, 0 = *no*). For participants who had volunteered for 4 years (i.e., wave $t - 1$ and wave t), we categorized participants who volunteered for another 4 years (i.e., wave $t + 1$ and wave $t + 2$) as "continuous volunteers," and those participants who did not volunteer for another 4 years as "former volunteers." For participants who had not volunteered in the first 4 years (i.e., wave $t - 1$ and wave t), we considered them as "continuous nonvolunteers" if they did not volunteer for another 4 years (see Figure 1). All three indicators of volunteering dynamics were coded as 1 = *yes* or 0 = *no*.

Life satisfaction

The LBQ measured participants' overall life satisfaction using a five-item scale (Diener et al., 1985). Participants rated the extent to which they agreed or disagreed with five statements (e.g., "I am satisfied with my life"), and responses were coded from 1 (*strongly disagree*) to 7 (*strongly agree*). A mean was calculated to indicate participants' life satisfaction ($\alpha = .89$). We treated life satisfaction at wave $t + 2$ as the outcome, while adjusting for their life satisfaction at wave t (baseline).

Self-perceptions of aging

The LBQ also measured participants' SPA using an eight-item scale modified from the Attitudes Toward Own Aging scale (Lawton, 1975; Luo & Li, 2020). We were interested in the potential differential impact of positive and negative SPA, so we assessed them separately (Huo et al., 2020). The items assessing positive SPA included: (a) I am happy now as I was when I was younger, (b) I have as much pep as I did last year, (c) as I get older, things are better than I thought they would be, and (d) so far, I am satisfied with the way that I am aging. The items of negative SPA included (a) things keep getting worse as I get older, (b) the older I get, the more useless I feel, (c) the older I get, the more I have had to stop doing things that I liked, and (d) getting older has brought with it many things that I do not like. Participants indicated how much they agreed or disagreed with these statements (1 = *strongly disagree* to 6 = *strongly agree*), and two mean scores were calculated for positive ($\alpha = .76$) and negative SPA ($\alpha = .78$) at baseline. Positive and negative SPA were significantly associated ($r = -.46$, $p < .001$).

Background characteristics

We adjusted for background characteristics measured at baseline (wave t). Participants reported age, gender (1 = *male*, 0 = *female*), marital status (1 = *married/partnered*, 0 = *nonmarried/partnered*), employment status (1 = *working for pay*, 0 = *not working for pay*), and minority status (1 = *Hispanic/Black/other race*, 0 = *non-Hispanic White*). Participants reported the number of years they attended school. We used income and wealth (i.e., total household assets including mortgage, vehicle, businesses, bonds, trusts, etc.; Hurd et al., 2016) from the data cleaned and imputed by the RAND Corporation, and transformed them using the inverse hyperbolic sine function (Friedline et al., 2015). Participants reported how often they cared for a sick or disabled adult, from 1 (*not in the last month or never*) to 6 (*daily*). They indicated how often they attended religious services, from 1 (*not at all*) to 5 (*more than once a week*).

Health indicators

We also considered participants' health at wave t and wave $t + 2$. Participants self-rated their health, on a scale from 1 (*poor*) to 5 (*excellent*). They also reported the number of chronic conditions they ever had, including hypertension, diabetes, cancer, lung disease, heart disease, stroke, psychiatric problems, and arthritis. Participants indicated whether they had functional limitations in performing 12 activities (e.g., walking, getting up from a chair, climbing,

reaching arms, lifting weights, and picking up a dime), all coded as 1 (*yes*) or 0 (*no*) and then summed (Nagi, 1976).

Analytic Strategy

Before hypothesis testing, we first performed analysis of variance and chi-squared tests to compare demographic characteristics and health indicators across former volunteers, continuous volunteers, and continuous nonvolunteers.

In the analytic sample of 10,441 participants aged 50+, 4,398 were from the same families (household n = 2,199). Using Mplus 8.3 (Muthén & Muthén, 1998–2017), we estimated models for life satisfaction (at wave t + 2), accounting for the clustering of household unit and applying a full information maximum likelihood procedure to missing data. All models adjusted for age, gender, education, income, wealth, marital status, employment status, minority status, caregiver status, participation in religious activities, self-rated health, number of chronic conditions, functional limitations, and life satisfaction—all measured at baseline (wave t). We also adjusted for health indicators at wave t + 2, and the two dummy variables for the 4-year period (corresponding to a start year of 2008 and 2010). All continuous covariates were centered on the sample mean.

Our first hypothesis predicted that continuous volunteers would report more increase/less decrease in life satisfaction over time, followed by former volunteers and continuous nonvolunteers. To test this hypothesis, we generated two dummy variables as predictors to identify participants who were continuous volunteers and continuous nonvolunteers (former volunteer was treated as the reference group). We switched between categories for pairwise comparisons. Our outcome variable was life satisfaction at wave t + 2. Given that we adjusted for participants' life satisfaction at baseline (wave t), our model, in fact, predicted subsequent changes in life satisfaction.

We also proposed to test whether the associations above varied depending on participants' SPA at baseline. We, respectively, entered interaction terms for Volunteering dynamics × Positive SPA and Volunteering dynamics × Negative SPA. Simple slopes analysis was further conducted for significant interaction effects, comparing the associations between volunteering dynamics and life satisfaction at the high (1 *SD* above the mean) and low (1 *SD* below the mean) levels of positive SPA.

Results

Among the final sample (N = 10,441), there were 633 participants identified as former volunteers (6%), 2,952 participants as continuous volunteers (28%), and 6,856 participants as continuous nonvolunteers (66%). Table 1 presents detailed characteristics for each group and results of statistical analyses comparing across three groups. Former volunteers and continuous nonvolunteers were older, less likely to be married, had more chronic conditions and functional limitations, and reported more positive SPA than continuous volunteers. Females were more likely to report volunteering experience (i.e., being a continuous volunteer or a former volunteer). Continuous volunteers were better educated, healthier, had higher income and greater wealth, attended religious activities more often, reported least negative SPA, and had greater life satisfaction than former volunteers, followed by continuous nonvolunteers. Interestingly, the three groups of participants did not differ in how often they cared for a sick or disabled adult.

We expected continuous volunteers to report greater subsequent life satisfaction than former volunteers, who reported greater life satisfaction than continuous nonvolunteers. This hypothesis was partially confirmed, in that continuous volunteers reported greater subsequent life satisfaction than both former volunteers (B = 0.14, p = .03) and continuous nonvolunteers (B = 0.17, p < .001; see Model 1 in Table 2). Yet, the difference between former volunteers and continuous nonvolunteers was not significant (B = −0.03, p = .62; not shown in the table but available upon request).

We then explored differences in these associations by participants' SPA. Positive SPA conditioned the difference of changes in life satisfaction between continuous volunteers and former volunteers (B = 0.13, p = .05; see Model 2 in Table 2). Simple slopes analysis further revealed that these differences were only significant in older adults with less positive SPA (B = −0.29, p = .006; see Figure 2), but not among older adults with more positive SPA (B = 0.00, p = .93). Continuous volunteers reported greater subsequent life satisfaction than continuous nonvolunteers, regardless of their positive SPA (B = 0.03, p = .34). We did not observe significant interaction effects involving negative SPA (not shown here but available upon request).

Post-Hoc Tests

We re-estimated the models considering the frequency of former volunteers' past volunteering experiences. The main findings reported above remained the same for former volunteers who volunteered less than 100 hr/year (i.e., about 2 hr/week) at wave t − 1 and t. Former volunteers who used to volunteer for more than 100 hr/year before transitioning out of their volunteer roles reported the same levels of subsequent life satisfaction as continuous volunteers. Findings are not shown here but available upon request.

Discussion

The field of gerontology is increasingly replete with research on volunteering, which has primarily compared volunteers and nonvolunteers (Carr et al., 2015). More recent studies have extended prior research with a focus on the initiation of volunteering (Carr et al., 2018a,

Table 1. Background Characteristics of the Study Sample

	a. Continuous volunteers (n = 2,952)	b. Former volunteers (n = 633)	c. Continuous nonvolunteers (n = 6,856)		
Variable	M (SD)	M (SD)	M (SD)	F	
Age	66.35 (8.92)	68.21 (10.57)	68.04 (10.10)	32.30***	(b = c > a)
Education (in years)	14.19 (2.48)	13.22 (2.76)	11.73 (3.32)	674.51***	(a > b > c)
Income	93,688.37 (161,297.97)	68,946.81 (91,658.72)	51,954.08 (76,086.38)	154.54***	(a > b > c)
Wealth	550,098.93 (1,072,550.77)	409,036.23 (1,146,888.19)	292,882.11 (870,596.18)	76.12***	(a > b > c)
Caregiving	1.70 (1.51)	1.65 (1.48)	1.62 (1.50)	2.38	—
Religious activities	3.80 (1.23)	3.18 (1.40)	2.30 (1.31)	1,428.01***	(a > b > c)
Self-rated health at t	3.64 (0.90)	3.23 (1.02)	2.95 (1.09)	465.65***	(a > b > c)
Self-rated health at t + 2	3.47 (0.92)	2.96 (1.07)	2.81 (1.08)	420.62***	(a > b > c)
Chronic conditions at t	1.74 (1.27)	2.11 (1.46)	2.21 (1.48)	112.73***	(c = b > a)
Chronic conditions at t + 2	2.09 (1.36)	2.57 (1.53)	2.65 (1.58)	144.53***	(c = b > a)
Functional limitations at t	1.55 (2.02)	2.56 (2.62)	2.95 (2.91)	284.44***	(c > b > a)
Functional limitations at t + 2	1.84 (2.25)	3.30 (2.95)	3.46 (3.09)	331.33***	(c = b > a)
Life satisfaction at t	5.40 (1.34)	4.91 (1.49)	4.68 (1.59)	200.31***	(a > b > c)
Life satisfaction at t + 2	5.41 (1.32)	4.92 (1.51)	4.72 (1.57)	176.42***	(a > b > c)
Positive SPA	4.45 (1.07)	4.02 (1.18)	3.93 (1.24)	168.07***	(a > b = c)
Negative SPA	2.87 (1.11)	3.28 (1.19)	3.53 (1.26)	260.33***	(c > b > a)
	Proportion	Proportion	Proportion	χ^2	
Male	.40	.36	.43	15.52***	(c > a = b)
Married/partnered	.74	.61	.61	150.02***	(a > b = c)
Minority	.23	.26	.34	132.60***	(c > b > a)
Working for pay	.47	.41	.33	177.71***	(a > b > c)

Notes: Participant N = 10,441. SPA = self-perceptions of aging. Significant differences by post-hoc comparisons among three volunteer history groups were presented in the parentheses after F or χ^2 values.
***p < .001.

2018b). Yet, older volunteers are more likely to transition out of volunteer activities than to take on a new volunteer role (Butrica et al., 2009). It is crucial to understand whether and how prior volunteer experience and the cessation of volunteering affect older adults' well-being, which may inform interventions intended to prolong the benefits of volunteering. We present one of the first studies that track well-being outcomes among older adults with varying histories of volunteer behaviors. After adjusting for baseline life satisfaction, we found that continuous volunteers reported greater life satisfaction in subsequent years compared to former volunteers (particularly those who used to volunteer less often) and continuous nonvolunteers. The difference between continuous volunteers and former volunteers, however, did not hold among older adults with more positive SPA.

Volunteering Dynamics and Life Satisfaction

The current study adds to the scant literature on volunteering dynamics and well-being. We found that continuous volunteers reported greater subsequent life satisfaction than former volunteers (especially if they used to volunteer for less than 2 hr/week), who did not differ from continuous nonvolunteers. This study confirms the salubrious effect of continuously volunteering in later life and refines the argument that the cessation of volunteering discontinues its benefits (Binder & Freytag, 2013; Meier & Stutzer, 2008). The result also offers crucial insights to identify older volunteers who may become less satisfied with their lives after they no longer volunteer and inform interventions targeting resources to help these former volunteers.

We assessed volunteering dynamics and tracked changes in life satisfaction using more data points over a longer period of time than in prior research, which allowed us to

Table 2. Models Predicting Life Satisfaction (at Wave $t + 2$) From the Dynamics of Volunteering

	Model 1: Main effect		Model 2: Interaction effect	
Variable	*B* (*SE*)	β	*B* (*SE*)	β
Fixed effects				
Intercept	2.58*** (0.08)	—	2.93*** (0.09)	—
Former volunteers[a]	−0.14* (0.06)	−0.02	−0.14* (0.07)	−0.02
× Positive SPA	—	—	0.13† (0.06)	0.02
× Negative SPA	—	—	0.01 (0.06)	0.02
Continuous nonvolunteers[a]	−0.17*** (0.04)	−0.05	−0.18*** (0.04)	−0.06
× Positive SPA	—	—	0.03 (0.03)	0.00
× Negative SPA	—	—	−0.03 (0.03)	−0.02
Positive SPA	—	—	0.13*** (0.03)	0.11
Negative SPA	—	—	−0.05 (0.03)	−0.04
Covariates at *t*				
Age	0.00 (0.00)	0.02	0.00 (0.00)	0.02
Male	−0.02 (0.03)	−0.01	−0.00 (0.03)	−0.00
Education	−0.02*** (0.01)	−0.04	−0.02** (0.01)	−0.04
Income[b]	0.01 (0.01)	0.01	0.01 (0.01)	0.01
Wealth[b]	0.01* (0.00)	0.03	0.01** (0.00)	0.03
Married/partnered	0.06 (0.04)	0.02	0.09* (0.04)	0.03
Minority	0.05 (0.04)	0.01	0.00 (0.04)	0.00
Working for pay	−0.07* (0.03)	−0.02	−0.08* (0.03)	−0.03
Caregiving	0.00 (0.01)	0.00	0.00 (0.01)	0.00
Religious activities	0.01 (0.01)	0.01	0.01 (0.01)	0.01
Self-rated health	0.03 (0.02)	0.02	−0.02 (0.02)	−0.01
Chronic conditions	0.07** (0.02)	0.07	0.07** (0.03)	0.07
Functional limitations	0.03*** (0.01)	0.05	0.05*** (0.01)	0.08
Life satisfaction	0.46*** (0.01)	0.47	0.40*** (0.02)	0.41
Covariates at $t + 2$				
Self–rated health	0.22*** (0.02)	0.15	0.20*** (0.02)	0.14
Chronic conditions	−0.08*** (0.02)	−0.08	−0.07** (0.02)	−0.07
Functional limitations	−0.06*** (0.01)	−0.11	−0.05*** (0.01)	−0.10
Period starting in 2008[c]	0.23*** (0.03)	0.07	0.23*** (0.03)	0.08
Period starting in 2010[c]	0.28*** (0.04)	0.07	0.33*** (0.05)	0.09
−2 log likelihood	636,851.82		556,763.10	

Notes: Participant N = 10,441. β = standardized coefficients; *B* = unstandardized coefficients; SPA = self-perceptions of aging.
[a]Reference = continuous volunteers.
[b]Transformed by the inverse hyperbolic sine function.
[c]Reference = period starting in 2006.
†$p = .05$. *$p < .05$. **$p < .01$. ***$p < .001$.

somewhat reduce the bias related to temporary emergencies. It is also worth noting that we examined the change, rather than the level at one time point, of life satisfaction during subsequent years after former volunteers quit. As such, despite a smaller increase, these former volunteers with prior volunteer experience may report greater life satisfaction than continuous nonvolunteers at baseline. Both groups could have maintained their initial levels ever since, thus showing a similar level of change over time.

Our finding is also consistent with models that explain the benefits of volunteering (Anderson et al., 2014; Burr et al., 2021; Thoits, 2012). The cessation of volunteering may inevitably reduce volunteering-related social, cognitive, and physical activities among former volunteers, who may also be deprived of a salient social role that they have served for years. If their past volunteering experiences were not intensive enough to accumulate some lasting resources, former volunteers likely exhibit a smaller increase in life satisfaction compared to those older adults who continuously benefit from volunteer activities. However, information on reasons why former volunteers quit is absent in the data we drew on, and we know little about whether they take on other social roles, and what those roles are. Prior research suggests some common reasons, such as prioritizing other productive commitments or addressing health declines (Tang et al., 2010). It is possible that former volunteers assume caregiving responsibilities or fulfill family obligations in other ways, which likely causes strain and burden (Zarit et al., 2019). Future

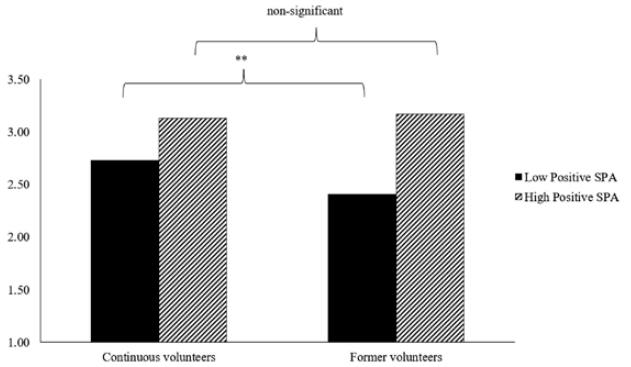

Figure 2. Interaction plots for Volunteering dynamics × Positive self-perceptions of aging, predicting life satisfaction (at Wave $t + 2$).
Note: SPA = self-perceptions of aging. The model adjusted for life satisfaction at baseline (Wave t) as well as other covariates (Wave t and $t + 2$). Low positive SPA refers to 1 *SD* below the mean and high positive SPA refers to 1 *SD* above the mean. $^{**}p < .01$.

research should consider collecting self-reports from former volunteers on the reason and consequence of their transition out of volunteer activities.

Differences by SPA

Interestingly, the association between volunteering dynamics and subsequent life satisfaction varied depending on older adults' SPA. We found that former volunteers with more positive SPA reported similar levels of subsequent life satisfaction as those who continuously volunteer, suggesting a buffering effect of positive SPA. This study adds to prior research that has documented the buffering effect of positive SPA on physical and cognitive health (Levy et al., 2012, 2014, 2016) and advances our understanding of the role SPA play in promoting older adults' subjective appraisal of overall life satisfaction. The finding also offers evidence to the uniqueness of positive SPA as compared to negative SPA. In line with prior research that treats optimism as a key resource of maintaining well-being (Ferguson & Goodwin, 2010; Wurm & Benyamini, 2014; Wurm et al., 2008), it seems that feeling positive and optimistic about getting older, rather than feeling less negative about age-related challenges, protects older adults' subjective well-being in the long run. For example, some former volunteers may transition out of volunteer activities due to health declines (Tang et al., 2010). Yet, those with more positive SPA have been shown to recover faster and exhibit slower declines (Levy et al., 2012, 2014), which may not necessarily allow them to restart volunteering but at least could improve their quality of life to some extent. Additionally, for former volunteers who take on caregiving roles, more positive/less negative SPA may buffer them against stressors related to providing intensive assistance (Levy et al., 2016).

Further, understanding this buffering effect sheds new light on the development and refinement of health-promotion interventions that involve volunteering activities. One recent study, which drew on a bigger subsample of the HRS, has documented the effect of volunteering on increasing positive SPA and reducing negative SPA over time, and suggested volunteering programs as a possible way to modify older adults' SPA on a sustained basis (Huo et al., 2020). The current study built on prior work and emphasizes the importance of considering SPA in volunteering programs. Future research may examine factors that strengthen the promotion of SPA in these programs, which will not only better equip older adults in the face of age-related challenges but also prolong the benefits volunteering may bring to older adults.

Limitations and Conclusion

Some limitations in this study warrant consideration. In the HRS, participants reported on their volunteer behaviors in the past year, whereas data were collected every other year. It is possible that participants only volunteered during the first year of the 2-year interval but were still considered as not volunteering per the data. We assessed a rough estimate of the frequency of volunteering in the post-hoc tests, but future research may collect more exact information on the hours older adults spent in volunteering. We were aware of other patterns of volunteering dynamics, such that some participants temporarily transitioned in and out of volunteer roles intermittently. These older adults were excluded from the current study due to our particular interest in former volunteers who once stably served as a volunteer but then stopped volunteering for an extended period of time. We were only able to identify around 6% of the current sample as former volunteers, but this percentage is comparable to that reported in other HRS-based research and European studies (e.g., Carr et al., 2018a; Hansen et al., 2018). More research is needed to better understand this population. Further, the type of volunteer work remains unclear. Although the benefits of volunteering have been extensively documented, more recent studies have also suggested that intensive volunteering may not be as beneficial but rather detrimental for older adults' life satisfaction (Bjälkebring et al., 2021). Although we adjusted for factors associated with volunteering and life satisfaction, the smaller increase in life satisfaction among former volunteers, particularly those with less positive SPA, may still co-occur with other stressors that also reduce life satisfaction. A closer look at the lives of those former volunteers is needed.

Despite the limitations, this study still made unique contributions by tracking changes in life satisfaction among older adults who continuously volunteered, who served as a volunteer but then quit, and who were continuously not involved in volunteer work. Findings advance our understanding of the benefits that volunteering brought to older adults and how long the benefits might last. Our

examination of individual differences is crucial with regard to identifying older adults who may be at greater risk for poor outcomes as they transition out of volunteer activities and advising intervention programs by suggesting SPA as a new target of training to prolong the benefits of volunteering programs to older populations in the long run.

Supplementary Material

Supplementary data are available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

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Conflict of Interest

None declared.

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Author Contributions

M. Huo planned the study, reviewed the literature, performed all statistical analyses, and wrote the paper. K. Kim helped to plan the study, supervised data analysis, and contributed to revising the paper.

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