

Volunteering and Psychological Well-Being Among Young-Old Adults: How Much Is Too Much?

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Purpose: Research concerned with the relationship between volunteer activity and psychological well-being has typically reported higher levels of well-being among older adult volunteers relative to nonvolunteers. However, few studies have examined nonlinear associations between frequency of volunteer activity and well-being. We examined nonlinear associations between hours spent volunteering and psychological well-being, controlling for employment status, partner status, physical health, and education. We also investigated associations between different domains of volunteer activity and well-being, along with the possible moderating effects of gender on these relationships. **Design and Methods:** We used data from the PATH Through Life Project, a population-based study of Australian adults. Participants consisted of 2,136 older adults aged 64 to 68.

Results: Nonlinear associations between hours spent volunteering and psychological well-being were evident, with these associations characterized by inverted U shapes, with nonvolunteers and those volunteering at high levels producing lower well-being scores relative to those volunteering at moderate levels. Few associations between specific domains of volunteer activity and well-being were evident, and no notable gender interactions emerged. **Implications:** The results point toward optimal frequency of

engagement in volunteer activity for psychological well-being as being bounded by upper and lower levels, outside of which benefits to well-being diminish.

Key Words: Positive affect, Negative affect, Life satisfaction, Voluntary workers, Socioemotional selectivity theory

Older adults' participation in unpaid work (referred to hereafter as *volunteering*) has broad social and economic benefits (Chambre, 1993; Hendricks & Cutler, 2001) and promotes positive outcomes for those who volunteer. Research on the consequences of volunteering for individuals has identified several such benefits, including better physical health (Luoh & Herzog, 2002), better mental health (Li & Ferraro, 2005; Musick & Wilson, 2003; Schwartz, Meisenhelder, Ma, & Reed, 2003), enhanced subjective well-being (Baker, Cahalin, Gesrt, & Burr, 2005; Greenfield & Marks, 2004; Van Willigen, 2000), and delayed mortality (Harris & Thoresen, 2005; Luoh & Herzog, 2002; Musick, Herzog, & House, 1999; Oman, Thoresen, & McMahon, 1999). In this article we consider the conceptual links between volunteering behavior and psychological well-being within the broader context of socioemotional selectivity theory (SST; Carstensen, 2006; Carstensen & Lockenhoff, 2003). We also examine the extent to which the benefits for well-being that result from volunteering become diminished at high levels of volunteer activity by examining nonlinear associations between time spent volunteering and psychological well-being.

Relevance of SST to Volunteerism in Young-Old Adulthood

Despite the well-documented physical and cognitive changes that occur with aging, population-based research (e.g., Jorm et al., 2005) has consistently shown higher levels of psychological well-being

Funding for data collection was provided by Unit Grant 973302 and Program Grant 179805 from the National Health and Medical Research Council (NHMRC) and a grant from the Australian Rotary Health Research Fund. Bryan Rodgers was supported by NHMRC Research Fellowship 366758 and Kaarin Anstey by NHMRC Research Fellowship 366756. We wish to thank Professors Anthony Jorm and Helen Christensen, Trish Jacomb, Karen Maxwell, and the team of PATH interviewers for their contribution to the research, and Dr. Darren Lipnicki for assisting with the preparation of the article.

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among older adults relative to their younger counterparts. SST (Carstensen, 2006; Carstensen & Lockenhoff, 2003) provides a means of accounting for this so-called paradox of aging. According to SST, as the end of life approaches and the associated time limits become more salient, goals become reprioritized, with a greater importance placed on emotionally meaningful activities conducted in the present and a lower priority given to the pursuit of goals concerned with future achievements. This change in motivation is typically represented by a greater importance placed on the experience of meaningful social relationships. Instead of focusing on personal ambition, older adults derive increasing satisfaction from providing help to others and seeking the experience of emotional well-being in the moment (Carstensen & Lockenhoff, 2003).

Engaging in volunteer work could provide an important means for contributing to the needs of others that is in alignment with the emotionally meaningful and socially oriented goals that characterize later life, according to SST. Indeed, researchers concerned with the consequences of volunteering have also highlighted the benefits of volunteering that arise from maintaining core psychological dispositions such as the need to contribute to the welfare of others (Luoh & Herzog, 2002; Post, 2005). However, according to SST, advancing age is not only associated with reprioritizing goals; it is also characterized by a reduced engagement in the more peripheral activities and relationships that do not contribute positively and strongly to emotional experience (Fung, Carstensen, & Lang, 2001). In a study aimed at examining the applicability of SST to volunteerism, Hendricks and Cutler (2004) found that adults tended to reduce the number of volunteer organizations that they participated in after age 65, however the total time spent volunteering increased in linear fashion up until age 80. Their findings pointed toward young-old adulthood as a time of significant community contribution, coupled with selectivity in chosen areas of participation that corresponds with the tenets of SST.

Nonlinear Associations Between Volunteering and Well-Being

A growing body of empirical evidence and the theoretical basis provided by SST each provide support for the value of volunteering in older adulthood for the community and for volunteers. However, it is possible that the benefits of volunteering to physical and mental health only accrue up to a certain level of intensity of volunteer activity. As discussed previously, SST identifies an adaptive tendency in later life to discard peripheral goals in favor of maximizing time spent in those activities that are most emotionally significant and rewarding. Older adults who commit extensive time to volun-

teering across a range of activities could be at risk for undermining the benefits to emotional well-being that result from selectivity of behavior into a limited number of personally important social and family-oriented domains. Intense voluntary participation across an array of activities could also undermine well-being directly by contributing to excessive burden or role overload (e.g., Li & Ferraro, 2006).

Unfortunately, much of the existing research concerned with volunteer behavior and well-being is limited by a lack of specificity at the upper end of measures designed to assess frequency of volunteer activity. A substantial proportion of the recently published studies in this area have reported results obtained from the Americans' Changing Lives study (Baker, Cahalin, Gesrt, & Burr, 2005; Li & Ferraro, 2005; Musick et al., 1999; Musick & Wilson, 2003; Van Willigen, 2000). The Americans' Changing Lives study measures hours spent in undertaking formal volunteering over the past year using the response categories of (1) less than 20 hr, (2) 20 to 39 hr, (3) 40 to 79 hr, (4) 80 to 159 hr, and (5) 160 hr or more. Using this system of classification, participants undertaking more than around 3 hr per week of voluntary work fall into the highest category, potentially obscuring any differential effects on well-being between this group and those who undertake a high frequency of volunteering at levels approaching or exceeding those equivalent to typical full-time employment (e.g., around 35 hr per week).

A limited number of studies have produced evidence to suggest that the association between amount of volunteer activity and well-being does not conform to a dose-response relationship. One paper based on the Americans' Changing Lives study data (Musick et al., 1999) found a protective effect of volunteering on mortality for those engaged in modest levels of volunteering (<40 hr in the past year) that was not evident for those engaged in higher levels of volunteering (≥ 40 hr in the past year). Rook and Sorkin (2003) investigated the psychological health outcomes for a group of older adults who committed 20 hr per week to serve as foster grandparents to a developmentally disabled child. Contrary to expectations, engagement in the program did not result in improvements to psychological health, prompting the authors to suggest that the time commitment and challenging responsibilities of the program may have exceeded optimal thresholds for obtaining benefits to well-being. Schwartz and colleagues (2003) reported that among a sample of church members, feeling overwhelmed by others' demands was an important predictor of poorer mental health, and Post (2005) advocated the potential public health benefits of altruistic, charitable activities while at the same time cautioning against individuals becoming overtaxed by excessive demands associated with unpaid work.

The primary aim of the present study (Aim 1) was to explore possible nonlinear associations between time spent volunteering and indices of psychological

well-being. We aimed to replicate the findings of previous studies that have indicated beneficial effects of moderate amounts of volunteering. Given the possibility that engagement in high levels of volunteering represents a failure or compromise in socio-emotional selectivity, we also investigated whether high levels of volunteering are associated with diminished psychological well-being as represented by measures of positive and negative affect, and life satisfaction. We hypothesized inverted U- or J-shaped relationships, with moderate levels of volunteering associated with higher levels of well-being than both nonvolunteering and high levels of volunteering. We also investigated the extent to which any associations were either accounted for, or moderated by, relevant covariates including gender, employment status, partner status, education, and self-rated physical health (Aim 2).

Effects of Different Domains of Activity on Well-Being

A better understanding of the extent to which different domains of volunteer activity promote well-being could have important implications for targeted programs designed to promote volunteering opportunities and well-being among older adults. An additional aim (Aim 3) concerned exploring associations between specific domains of volunteer activity, time spent volunteering, and psychological well-being. We examined differential associations with well-being across various domains of activity including fundraising, committee work, teaching, preparation of food, provision of transport, garden maintenance, counseling, coaching, providing personal care, and artistic performance/production.

Gender Differences in Associations Between Volunteer Activity and Well-Being

Although studies have routinely statistically controlled for the effects of gender (Li & Ferraro, 2005; Luoh & Herzog, 2002; Shmotkin, Blumstein, & Modan, 2003), few studies have explicitly examined gender differences in the relationships between volunteer activity and well-being by modeling gender interactions. There are, however, important reasons to expect that the associations between both frequency of volunteer activity and different domains of volunteer activity and well-being could vary as a function of gender. Research has identified a particular susceptibility to overburden associated with unpaid activities among women, who frequently assume a greater degree of responsibility for domestic and caregiving tasks in addition to activities more typically recognized within the context of formal volunteering (Harway & Nutt, 2005; MacDonald, Phipps, & Lethbridge, 2005). As a result, any upper limit at which frequency of formal

volunteering is associated with a leveling off or decrease in well-being is likely to be lower for women relative to men.

The extent to which participation in different domains of volunteer activity promotes well-being is also likely to vary as a function of gender. The accumulation of gender-specific expectations based on years of socialization could influence both the extent to which men and women initially take part in different domains of activity, and the extent to which they gain a level of emotional satisfaction from different domains of activity that, in keeping with SST, is likely to determine their continued participation. For example, Antonucci, Jackson, Gibson, and Herzog (1991) reported a positive association between do-it-yourself activities and life satisfaction for both men and women, whereas activities concerned with helping others predicted life satisfaction among women only. A final aim of the present study (Aim 4) was to examine the extent to which relationships between time spent volunteering, engagement in different domains of volunteer activity, and well-being varied as a function of gender.

Methods

Participants

This study used data collected as part of the PATH Through Life Project, a longitudinal, community-based survey of people aged 20 to 24, 40 to 44, and 60 to 64 living in the Australian capital city of Canberra and the neighboring city of Queanbeyan. Our results were based on data collected from the oldest cohort at a second wave of data collection undertaken in 2005–2006, when participants in this group were predominantly aged between 64 and 68 and detailed questions regarding volunteering behavior were included in the interview protocol. Sampling frames used were the Australian Electoral Rolls for the Canberra and Queanbeyan regions. A more detailed description of the sampling procedure, interview protocol, and measures incorporated in the study is available in previous publications (Rodgers et al., 2005). A total of 2,551 participants in the 60- to 64-year-old age group were interviewed at baseline (a response rate of 58.3%). Comparisons with Australian population census data using socio-demographic variables common to both surveys revealed that the total PATH sample at baseline showed slightly higher levels of employment and education relative to the target population, however these differences were not of substantial magnitude (Rodgers et al., 2005).

A total of 2,222 participants were reinterviewed at follow-up (a retention rate of 87%). This study utilized data provided by 2,136 individuals who provided information on their involvement in voluntary work at follow-up. Among this group, less than 2% of cases had missing values for any of

the variables used in the current study. For these cases, we imputed missing data using maximum likelihood estimation via the SPSS EM algorithm.

Measures

Volunteer Status.—An initial item asked participants whether they ever do any voluntary work. Those who responded “yes” were asked a series of additional questions. Time spent volunteering was measured by asking participants “How many hours per week, on average, are you engaged in voluntary work?” To enable comparison with other studies, we estimated hours spent volunteering per year by multiplying responses to this item by a factor of 52. In order to explore nonlinear patterns of association, we subsequently classified respondents into groups of increasing frequency of volunteer activity (0 hr, 1–99 hr, 100–199 hr, 200–799 hr, 800+ hr) following procedures detailed in the Results section. Volunteers were also asked to identify the types of voluntary work they do using a list of categories of activities (see Results) that have previously been identified in national surveys of volunteer activity (Australian Bureau of Statistics, 2001) and used in other Australian samples (Warburton, Terry, Rosenman, & Shapiro, 2001).

Physical Health.—Self-rated physical health was measured using the RAND-12 Physical Health Component score (RAND-12 PHC; Hays, 1998). The RAND-12 PHC is a short form of the RAND-36 PHC, which has sound psychometric properties in samples of older adults. The RAND-12 PHC provides a total score for physical health standardized to a mean of 50 with a standard deviation of 10 based on U.S. population data. Higher scores indicate better physical health.

Sociodemographic Characteristics.—Participants were asked a series of questions related to their sociodemographic characteristics. We used responses to the relevant items to construct measures of partner status (1 = married or partnered, 0 = other), employment status (1 = employed full time, 2 = employed part time, 0 = not in the labor force), and years of education.

Psychological Well-Being.—Positive and negative affect was measured using the Positive and Negative Affect Schedule scales (Watson, Clark, & Tellegen, 1988). These scales consist of 20 adjectives reflecting characteristics of positive (10 items; e.g., *excited, inspired*) and negative (10 items; e.g., *distressed, ashamed*) mood. Participants were asked to indicate the extent to which their feelings matched the words in the past month using 5-point scales ranging from very slightly or not at all to extremely. Responses were summed to form separate scales,

with higher scores indicating stronger positive or negative affect. The Positive and Negative Affect Schedule scales have sound reliability and validity in general population and older samples (Crawford & Henry, 2004; Kercher, 1992). Life satisfaction was measured using the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993). The scale consists of five items (e.g., “The conditions of my life are excellent”) that participants respond to using a 7-point scale ranging from strongly disagree to strongly agree. Responses were summed to produce a total score, with higher values indicating higher satisfaction with life.

Procedure

Participants completed a questionnaire (usually in their home or at the Centre for Mental Health Research at the Australian National University in Canberra) using a handheld computer, and a trained interviewer administered additional physical and cognitive tests. The interview protocol included various sociodemographic, physical and mental health, personality, and cognitive measures—we report here only those pertinent to the present study. The Human Research Ethics Committee of the Australian National University approved the study protocol, and all participants provided written consent.

Statistical Analyses

We used scatter plots with fitted lowess lines using running-mean smoothing for exploratory analysis of nonlinear associations between hours spent volunteering and markers of psychological well-being. Lowess lines are calculated using an iterative process based on weighted least squares regression, and they provide graphical representations of nonlinear trends in the relationships between two variables (Cohen, Cohen, West, & Aiken, 2003). For clarity of presentation, we truncated extreme scorers on the variable representing hours of volunteering per year to 2,080 hr and 1,500 hr for men ($n = 5$) and women ($n = 3$), respectively. We examined unadjusted bivariate associations between categories of time spent volunteering and sociodemographic characteristics, types of volunteer activity, and markers of well-being using chi-square analyses and analysis of variance.

We undertook examination of nonlinear associations between volunteer hours and well-being with adjustment for sociodemographic characteristics and physical health using analyses of covariance, and we undertook simple paired contrasts with nonvolunteers defined as the reference category. In these models, we modeled volunteer category, partner status, gender, and employment status as fixed factors, and RAND-12 PHC and years of education as continuous covariates. We examined associations

between specific domains of volunteer activity and indices of well-being using multiple regression, with cross-product terms included to test gender interactions. In both analyses of covariance and multiple regression models, we progressively excluded non-significant higher order terms in order to develop the most parsimonious models. Evaluation of model assumptions for analysis of variance and regression did not reveal any substantial concerns related to homogeneity of variance, multicollinearity, or heteroscedasticity. However, screening for homogeneity of regression in relation to the analysis of covariance models revealed an interaction between volunteer hours and education (a continuous covariate) in the model that included negative affect as the dependent variable. Consequently, in this model we trichotomized education and modeled it as a fixed factor rather than as a continuous covariate (Tabachnick & Fidell, 2001). We used SPSS version 14.0 and STATA version 9.0 for all analyses.

Results

Exploratory Analysis of Nonlinear Associations Between Time Spent Volunteering and Psychological Well-Being

We initially explored nonlinearity in the associations between time spent volunteering and psychological well-being by fitting Lowess lines to bivariate scatter plots of volunteer hours and the three (standardized) indices of well-being: positive affect, negative affect, and life satisfaction. Figure 1 shows the fitted lowess lines for each bivariate relationship by gender.

Figure 1 shows clear evidence of nonlinearity in the associations between hours spent volunteering and markers of psychological well-being. Men, on average, showed an increase in positive affect and life satisfaction with increasing volunteer hours up to a point of around 200 hr per year. The lowess curves for the two positive markers of well-being showed some undulation after this point before declining after a point of around 800 to 1,000 hr per year of volunteer work. For men, the association between negative affect and volunteer hours showed a relatively monotonic pattern, with negative affect tending to increase with higher levels of volunteering.

Women showed a similar pattern of association between volunteer hours and life satisfaction to that of men, with satisfaction initially increasing before declining with higher levels of voluntary activity. There was also an initial decrease in negative affect for women up to around 200 hr per year of voluntary work, with a subsequent increase in negative affect peaking at around 800 hr per year. Women's positive affect, unlike men's, did not noticeably decline with increasing levels of volunteering.

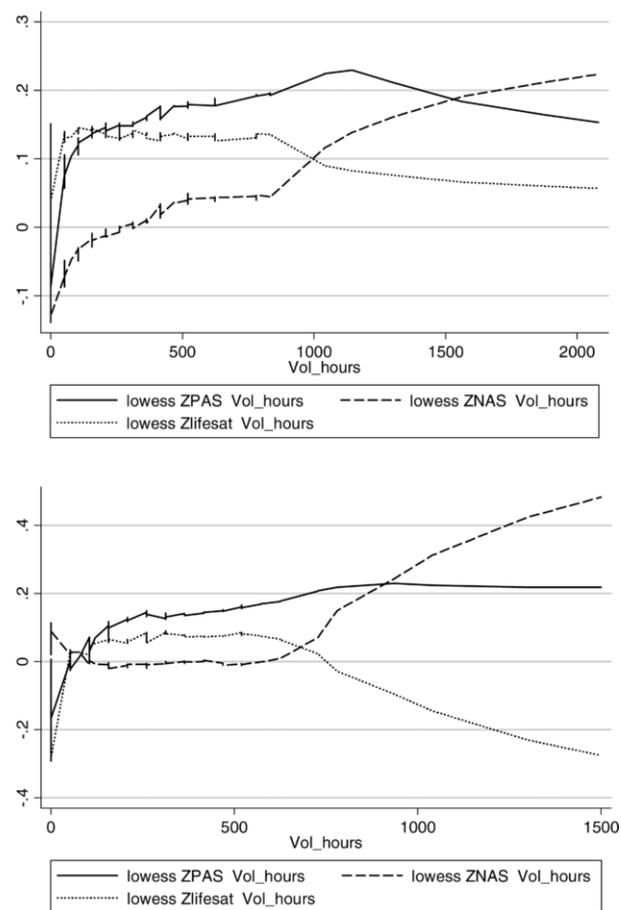


Figure 1. Lowess lines representing relationships between hours spent volunteering and indices of psychological well-being for men (top panel) and women (bottom panel).

Bivariate Associations of Time Spent Volunteering With Volunteer Activity Type, Sociodemographic Characteristics, Health, and Psychological Well-Being

We used results produced by the initial exploratory fitting of lowess curves to inform the classification of participants into volunteer groups for subsequent analyses. Grouping the sample into categories allowed for clear presentation of non-linear patterns of association in the data after adjustment for covariates. We defined high-level volunteers as those engaging in 800 hr a year or more of voluntary work. This cutoff reflected the upper level of voluntary activity at which indices of well-being tended to show a consistent decline in the lowess curves of Figure 1 and corresponded to around 15 hr or more of voluntary work per week. We contrasted nonvolunteers with this group, in addition to those engaging in low (1–99 hr), moderate (100–199 hr), and moderate to high (200–799 hr) levels of volunteering. Table 1 shows bivariate relationships between the categories of volunteer activity and sociodemographic characteristics, types,

Table 1. Characteristics of the Sample by Time Spent Volunteering

Variable	Estimated Number of Hours Spent Volunteering per Year					<i>p</i> (χ^2 , <i>F</i>)
	0	1–99	100–199	200–799	800+	
<i>N</i>	1,217	152	315	402	50	
Sociodemographic characteristics						
Male (%)	51.8	52.0	46.7	55.2	64.0	.085
Employment status (%)						
Employed full time	10.8*	13.2	7.0	3.7*	4.0	<.001
Employed part time	15.2*	22.4	22.5*	18.4	10.0	
Not in the labor force	74.0	64.5*	70.5	77.9*	86.0*	
Partnered (%)	76.0	82.2	79.0	76.6	88.0	.126
Education, <i>M</i> (<i>SD</i>)	13.41 (2.85)	14.51* (2.59)	14.42* (2.41)	14.49* (2.57)	14.83* (2.76)	<.001
RAND-12 Physical Health Component, <i>M</i> (<i>SD</i>)						
	47.76 (10.33)	49.90* (8.73)	50.11* (8.47)	49.13* (9.34)	49.36* (9.22)	<.001
Volunteer activity type (%)						
Fundraising/sales		26.3	20.0	20.9	16.0	.323
Management/committee work		20.4*	28.6	37.3	56.0*	<.001
Teaching or instruction		14.5	16.2	22.4	16.0	.074
Administration or clerical		9.2*	16.2	24.4*	22.0	<.001
Preparing/serving food		13.2	8.9	10.7	6.0	.376
Transporting people, meals, or goods		17.8	18.7	16.9	16.0	.919
Maintaining/repairing gardens		6.6	7.3	5.7	8.0	.822
Befriending, listening, or counseling		19.1	27.0	26.1	24.0	.287
Coaching, refereeing, or judging		4.6	5.4	3.2	10.0	.137
Personal care		2.6	3.5	6.0	8.0	.160
Artistic performance/media production		5.3	7.0	8.2	12.0	.397
Other		15.1*	20.0	26.4*	26.0	.021
Total volunteer activities, <i>M</i> (<i>SD</i>)		1.55 (0.84)	1.79* (1.04)	2.08* (1.33)	2.20* (1.23)	<.001
Negative affect, <i>M</i> (<i>SD</i>)	13.55 (4.13)	13.89 (4.04)	13.55 (4.19)	13.73 (4.35)	15.92* (6.62)	.003
Positive affect, <i>M</i> (<i>SD</i>)	30.36 (7.93)	31.76* (7.48)	32.75* (7.93)	33.00* (7.51)	32.28 (7.07)	<.001
Life satisfaction, <i>M</i> (<i>SD</i>)	25.10 (6.13)	25.74 (5.57)	26.73* (5.39)	25.98* (5.93)	24.24 (5.54)	<.001

Note: *Denotes means significantly different from reference category of 0 hr volunteering at .05, or cells with adjusted standardized residuals greater than 2 or less than -2.

and range of volunteer activity, and indices of well-being. Those engaging in high levels of volunteering reported higher levels of negative affect relative to nonvolunteers, whereas U-shaped patterns were evident for positive affect and life satisfaction, with those engaging in moderate levels of volunteering reporting the highest levels of well-being. Those volunteering at moderate to high levels were less likely to be employed full or part-time, whereas nonvolunteers had lower levels of education and poorer self-rated health relative to volunteers. Gender and partner status were not significantly related to time spent volunteering.

Among volunteers, the range of different activities engaged in (total volunteer activities) increased monotonically with time spent volunteering. Of the specific types of volunteer activity, only management or committee work, administration or clerical work, and “other” (unspecified activities) were associated with time spent volunteering. Those engaged in moderate to high levels of volunteering were more likely to report undertaking work in administration/clerical areas, or “other” activities, whereas individuals volunteering at very high levels of 800 hr a year

or more were more likely to be engaged in management or committee work. Independent samples *t* tests did not reveal differences in the positive or negative affect or life satisfaction of volunteers who undertook management or committee work relative to volunteers who did not, indicating that any decrements to well-being experienced by high-level volunteers were not explained by their greater involvement in this specific activity type.

Adjustment for Sociodemographic Characteristics and Health, and Examination of Possible Moderators

We used analysis of covariance models to examine the relationships between time spent volunteering and indices of psychological well-being controlling for gender, employment status, partner status, years of education, and self-rated physical health. Table 2 shows estimated marginal means produced by the analyses.

After the progressive exclusion of nonsignificant higher order terms, the model that included life

Table 2. Estimated Marginal Means (with SEs) of Indices of Psychological Well-Being by Time Spent Volunteering

Variable	Estimated Number of Hours Spent Volunteering per Year					<i>p</i>
	0	1–99	100–199	200–799	800+	
Life satisfaction	23.98 (0.22)	24.21 (0.47)	25.16 (0.36)**	24.65 (0.33)*	22.39 (0.82)	.001
Positive affect	31.49 (0.32)	31.91 (0.64)	32.93 (0.49)**	33.47 (0.45)***	32.69 (1.07)	<.001
Negative affect						
Partnered	13.38 (0.16)	14.05 (0.39)	13.65 (0.28)	13.89 (0.26)	15.52 (0.69)***	.001
Not partnered	14.03 (0.26)	15.26 (0.77)	14.19 (0.53)	14.03 (0.43)	21.78 (1.71)***	<.001
Less than 13 years education	13.52 (0.23)	15.54 (0.70)**	13.53 (0.52)	13.36 (0.44)	16.58 (1.52)	.014
13 to 15 years education	13.52 (0.24)	14.30 (0.66)	13.59 (0.43)	14.80 (0.41)*	21.83 (1.15)***	<.001
16 or more years education	14.07 (0.24)	14.12 (0.58)	14.63 (0.41)	13.72 (0.34)	17.54 (1.16)***	<.001

Notes: Estimated marginal means adjusted for gender, partner status, employment status, years of education, and self-rated physical health (RAND-12 Physical Health Component).

p* < .05; *p* < .01; ****p* < .001.

satisfaction as the dependent variable revealed a significant main effect of volunteering, $F(4, 2124) = 4.61, p = .001, \eta^2 = .009$. As shown in Table 2, life satisfaction was significantly higher among those undertaking moderate levels of volunteering (100–799 hr per year) relative to nonvolunteers. High-level volunteers reported lower life satisfaction relative to nonvolunteers, with this difference at borderline significance ($p = .050$).

The analyses also revealed a significant main effect of volunteering on positive affect, $F(4, 2122) = 6.42, p < .001, \text{partial } \eta^2 = .012$, with positive affect significantly higher among those undertaking moderate levels of volunteering (100–799 hr per year) relative to nonvolunteers. Levels of positive affect among high-level volunteers did not differ significantly from those of nonvolunteers.

Preliminary analyses revealed an interaction between volunteer category and continuous years of education in the analysis of covariance that included negative affect as the dependent variable. We therefore collapsed years of education into three categories—less than 13 years, 13 to 15 years, and 16 or more years—with this variable included in subsequent modeling as a fixed factor rather than as a continuous covariate. Due to problems of small cell sizes that occurred with the inclusion of higher order interaction terms, we modeled only two-way interactions between volunteering and education in addition to interactions among the other factors.

The analysis revealed significant interactions between volunteering and partner status, $F(4, 2111) = 2.72, p = .028, \text{partial } \eta^2 = .005$; and between volunteering and education, $F(8, 2111) = 3.72, p < 0.001, \text{partial } \eta^2 = .014$. Estimated marginal means of negative affect across volunteering categories are expressed by education level and partner status in Table 2 and plotted in Figure 2 in order to elucidate the nature of the interactions. The Volunteering \times Partner Status interaction was characterized by an increase in negative affect among those undertaking high levels of volunteering that was more pro-

nounced among those without partners. A more complex pattern emerged in the Volunteering \times Education Level interaction. Participants with lower levels of education reported higher negative affect than nonvolunteers when volunteering between 1 and 99 hr per year. In contrast, participants with

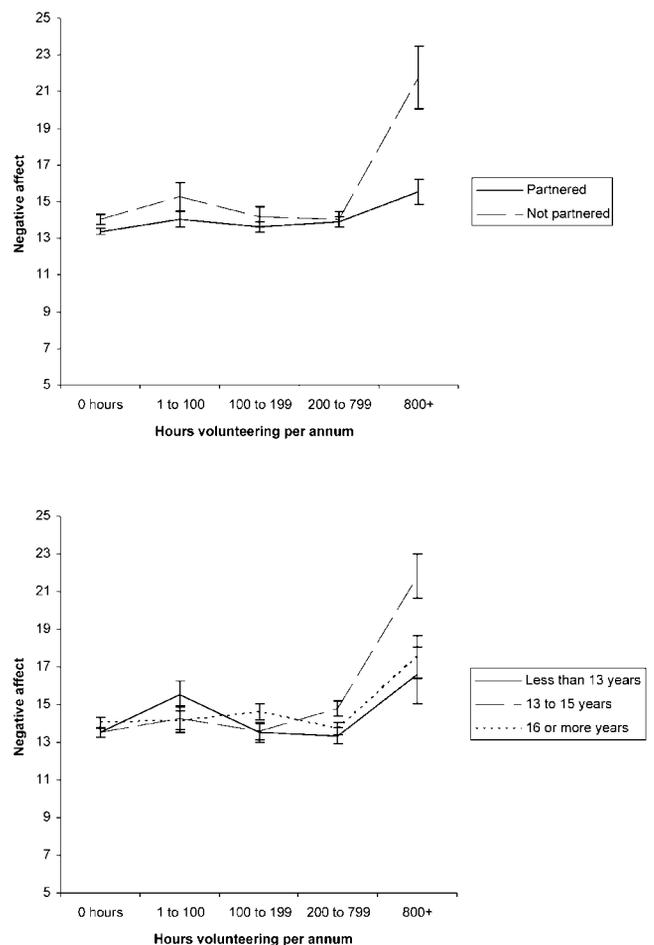


Figure 2. Interactions of volunteer hours with partner status (top panel) and education (bottom panel) on negative affect (means with standard errors).

Table 3. Associations of Volunteer Activity Types With Psychological Well-Being

Variable	Psychological Well-Being					
	Positive Affect		Negative Affect		Life Satisfaction	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Covariates						
Female gender	-0.77	0.65	-0.12	0.32	-0.29	0.44
Employed	1.15*	0.56	0.16	0.33	-0.32	0.42
Partnered	-0.39	0.62	-0.36	0.36	3.03***	0.46
Years of education	0.41***	0.10	0.03	0.06	-0.03	0.08
RAND-12 Physical Health Component	0.23***	0.03	-0.15***	0.02	0.18***	0.02
Volunteer activity type						
Fundraising/sales	0.41	0.60	-0.05	0.35	0.62	0.44
Management/committee work			0.10	0.32	-0.57	0.40
Male	0.42	0.41				
Female	1.97*	0.88				
Teaching or instruction			-0.24	0.38	0.24	0.47
Male	-1.42	0.87				
Female	1.30	0.96				
Administration or clerical	1.18	0.62	0.18	0.37	-0.05	0.46
Preparing/serving food	-0.86	0.81	0.32	0.47	0.07	0.60
Transporting people, meals, or goods	0.40	0.65	-0.12	0.38	0.31	0.48
Maintaining/repairing gardens	-1.56	0.98	0.51	0.58	-0.51	0.73
Befriending, listening, or counseling	0.82	0.57	0.20	0.34		
Male					-0.79	0.62
Female					0.76	0.59
Coaching, refereeing, or judging	1.16	1.17	-0.56	0.68	0.02	0.86
Personal care	1.87	1.14	1.10	0.67	0.70	0.85
Artistic performance/media production	-0.15	0.91			-1.06	0.67
Male			1.27	0.72		
Female			-0.71	0.80		
Other	-0.90	0.61	0.90*	0.36	-0.67	0.45

Note: *SE* = standard error.

p* < .05; **p* < .001.

13 to 15 years of education reported higher negative affect when they also reported engaging in high levels of volunteering.

Associations Between Different Domains of Volunteer Activity and Well-Being

Table 3 shows results of regression analyses used to examine the associations between different volunteer activity types and indices of well-being. The unstandardized regression coefficients represent the mean differences between volunteers engaged in each activity type and volunteers who did not report engagement in the activity, on each index of well-being (the dependent variables) adjusted for covariates and engagement in the other volunteer activities.

We also tested interactions of gender with each activity type, as men and women tended to differ in the extent to which they took part in different domains of activity. Table 4 shows bivariate

associations between gender and different domains of activity among volunteers. Women were more likely to report involvement in fundraising or sales; preparing or serving food; and befriending, listening, or counseling relative to men. Men were more likely to report taking part in management or committee work; garden repair and/or maintenance; and coaching, refereeing, or judging.

The regression analysis that included positive affect as the dependent variable revealed significant interactions between gender and engagement in management/committee work (*B* = 2.23, *SE* = 1.05, *p* = .03), and teaching or instruction (*B* = 2.65, *SE* = 1.64, *p* = .03). To facilitate interpretation, we repeated the analyses separately for men and women, with the relevant coefficients presented in Table 3. The results indicated that the association between engagement in management/committee work and positive affect was significant and positive for women only, uniquely explaining around 1% of the variance in positive affect (*sr*² = .01). The interaction between gender and teaching/instruction

Table 4. Gender Differences in Volunteer Activity Engagement

Variable	Total	Males	Females	<i>p</i> (χ^2)
N	919	480	439	
Volunteer activity type (%)				
Fundraising/sales	21.2	18.1	24.6	.016
Management/committee work	32.5	39.6	24.8	<.001
Teaching or instruction	18.6	16.7	20.7	.114
Administration or clerical	18.9	18.3	19.6	.627
Preparing/serving food	10.2	7.1	13.7	.001
Transporting people, meals, or goods	17.6	15.4	20.0	.066
Maintaining/repairing gardens	6.5	9.8	3.0	<.001
Befriending, listening, or counseling	25.1	20.2	30.5	<.001
Coaching, refereeing, or judging	4.6	6.5	2.5	.004
Personal care	4.7	4.2	5.2	.442
Artistic performance/media production	7.5	7.5	7.5	.992
Other	22.3	23.1	21.4	.533

was characterized by a positive association for women and a negative association for men, however neither coefficient was significantly different from zero. We observed no other significant relationships between activity types and positive affect.

A significant interaction between gender and engagement in artistic performance/media production emerged in the prediction of negative affect ($B = -2.15$, $SE = 1.06$, $p = .04$). Follow-up analyses revealed a positive association approaching significance for men only ($p = .08$). No other significant relationships between activity types and negative affect emerged. A significant interaction also pointed toward differential gender effects of involvement in befriending, listening, or counseling on life satisfaction ($B = 1.95$, $SE = 0.82$, $p = .02$). Engagement in this activity was associated with higher satisfaction for women and lower satisfaction for men, however the differences were not significant for either gender. The main effect of the nonspecific “other” category of activities was associated with higher negative affect, uniquely accounting for less than 1% of the variance ($sr^2 = .006$). None of the other activity types were significantly associated with life satisfaction.

Discussion

This article reports results of an initial examination of nonlinear associations between time spent volunteering and psychological well-being in a sample of older adults, using a measure of volunteer hours that included those volunteering at high levels (more than 15 hr per week). The results are in keeping with those of previous studies that have demonstrated associations between good mental health and moderate levels of volunteer activity. However, consistent with the notion that engagement in extensive volunteering in older adulthood could result in compromising goals of socioemotional selectivity, the results also indicate that high

levels of volunteer activity are associated with lower levels of psychological well-being. After adjustment for gender, physical health, education, partner status, and employment status, analyses concerned with positive affect and life satisfaction revealed results in support of the hypothesized inverted U-shaped relationship between time spent volunteering and these two positive indicators of well-being. The association between volunteer hours and negative affect was characterized by a tendency for those volunteering at high levels to display higher levels of negative affect relative to nonvolunteers and those volunteering at moderate levels. High-level volunteers were more likely to engage in management or committee work than other domains of volunteering, however involvement in this activity type did not explain differences in well-being. Indeed, analysis concerned with different domains of volunteer activity did not reveal any specific activity types that were uniquely and consistently associated with well-being.

The highest well-being scores were evident among those who engaged in at least 100 hr of volunteer activity per year but fewer than 800 hr. If one assumes that volunteering promotes psychological well-being, this finding suggests that more than just occasional or nominal involvement may be required to accrue any such benefits. Previous research concerned with associations between volunteer activity and health outcomes has frequently grouped those volunteering at low levels with nonvolunteers (e.g., Luoh & Herzog, 2002) or examined linear associations, treating time spent volunteering as a continuous measure (e.g., Van Willigen, 2000), thereby potentially obscuring minimum levels of volunteer activity that may need to be reached before the benefits of volunteer activity become evident.

The relationship between volunteer hours and negative affect was moderated by partner status. High-level volunteers without partners showed a more marked increase in negative affect relative

to partnered high-level volunteers. This finding indicates that having the support of a partner could be an important protective factor against any negative psychological consequences that could arise from a high commitment to voluntary work. Improved access to emotional and financial resources that are afforded by having a partner could provide an important basis for engaging in high levels of voluntary activity without becoming overburdened.

Education level also moderated the association between volunteering and negative affect. Among high-level volunteers, those with higher education levels were more likely to report negative affect relative to those with lower education. The generalizability of this finding is limited, as the cell sizes representing the interaction at high levels of volunteering were small ($n_s = 9, 14, \text{ and } 27$ for fewer than 13 years, 13–15 years, and more than 16 years of education, respectively, among high-level volunteers). It is also evident from Figure 2 that the overall increase in negative affect with high levels of volunteering that is reflected in the volunteering main effect appears to be of substantially greater practical importance than the relatively subtle variations in the association between volunteering and negative affect that occurred with different education levels.

Among those volunteering at high levels, we anticipated that women would report lower well-being scores relative to men. However, no Gender \times Volunteer Hours interactions emerged. Our results showed a trend toward a higher proportion of men engaging in high levels of volunteering (64%, $p = .085$) relative to women. The results may indicate that those women with extensive family and social responsibilities that fall outside the domain of formal volunteering (e.g., caregiving, provision of informal social support) are less likely to engage in high levels of volunteering, thereby avoiding potential problems of overburden.

Our results provide broad support for the relevance of SST to volunteering behavior among older adults. In keeping with the tenets of SST concerned with the importance of socially oriented and emotionally meaningful goals in later life, our results indicate that older adults who engage in moderate amounts of volunteer activity express higher levels of well-being relative to nonvolunteers. The lower levels of well-being and higher total number of different voluntary activities engaged in by the high-level volunteers in our study also suggest limitations in the expression of socioemotional selectivity in this group.

Finally, we examined gender differences in engagement in different domains of activity and possible gender interactions in the associations of different domains of volunteer activities with indices of well-being. The gender differences that emerged were typically in keeping with traditional social and workplace roles, with women more likely to report

engaging in fundraising; preparing/serving food; and befriending, listening, or counseling volunteer activities, and men more likely to report involvement in management or committee work; maintaining gardens; and coaching, refereeing, or judging activities. Regression analyses revealed several gender interactions in the associations between activity types and well-being among volunteers, however follow-up analyses with the sample stratified by gender revealed just one noteworthy association, with the positive association between management/committee work and positive affect significant for women but not for men.

Limitations

It is important to emphasize that the study's cross-sectional design prevents the drawing of any causal inferences regarding the associations between volunteering and well-being. It is possible that the evidence for reduced psychological well-being associated with high levels of volunteer activity resulted not from overburden, but from some individuals experiencing significant stressors (e.g., dysfunctional family relationships) and consequently seeking respite through frequent out-of-home volunteer activity. Li and Ferraro (2006) addressed the notion of volunteer behavior as a compensatory mechanism in later life, suggesting that some older adults volunteer as a means of optimizing social and emotional capital in the face of loss. It is possible that the lower levels of well-being evident among high-level volunteers in our sample do not reflect role overload but rather a selection effect represented by those already under emotional stress seeking solace in experiences of social support, integration, and altruism potentially afforded by high levels of volunteering. Longitudinal research, including future waves of the PATH Through Life project, is likely to prove critical in disentangling issues of causality related to high-level volunteering and well-being.

We should also emphasize that the number of participants engaging in high levels of volunteering was relatively low in the context of our large sample ($n = 50$). The high-level volunteers appeared to represent a vulnerable group, however their small number indicates that volunteer overburden is not likely to be a source of significant concern for the mental health of older adults at the population level. However, we drew our sample from a predominantly metropolitan area, and Australian national statistics indicate substantially higher rates of volunteering in nonmetropolitan areas (Australian Bureau of Statistics, 2001), suggesting that overburden of older volunteers could be a more significant issue for those living in rural and regional areas in Australia. It is also true that although the number of high-level volunteers in our sample was adequate for the investigation of main effects, the relatively low

numbers may have resulted in insufficient power to detect interactions between volunteer hours and relevant covariates where smaller effect sizes were evident.

Conclusions and Implications

The present study reveals important new findings regarding nonlinearity in relationships between volunteering and psychological well-being in a large population-based sample of young-old adults. If one assumes that engaging in high levels of volunteering can have adverse effects on well-being as a result of an increased burden of responsibility, future research may be well served in identifying the specific characteristics of high-level volunteers that distinguish them from those volunteering at more moderate, and perhaps more manageable, levels. Such characteristics might include the desire to maintain social roles that were formerly linked to paid employment, or a heightened sense of civic responsibility, possibly linked to personality characteristics.

It is also possible that among volunteers, engagement in certain domains of voluntary activity promotes an enhanced awareness of unmet needs among disadvantaged groups that depend on the services provided by volunteers. This, in turn, could result in some volunteers becoming socially, emotionally, and/or financially overcommitted in attempting to better meet those needs, which could in turn have an adverse impact on their personal well-being. Li and Ferraro (2006) identified the potential issue of volunteers becoming affiliated with organizations and experiencing an ensuing degree of obligation leading to role strain and possible compromises to physical and mental health. In their recent critical analysis of the growing emphasis on civic engagement among older adults in the United States, Martinson and Minkler (2006) raised concerns over the potential consequences of a continued decline in government fiscal and administrative responsibility for human services made possible by the increasing capacities of the volunteer sector. Our results indicate that a heavy social reliance on older adult volunteers could have adverse implications for those engaged in high levels of volunteering. Social policy could be best served by working toward the optimal balance of creating opportunities for older adult volunteers while guarding against excessive burden on individuals and ensuring that human services and the voluntary sector have adequate funding support. Ultimately, an increase in the number of older adults engaging in moderate levels of voluntary work, along with the adequate provision of funding to the voluntary sector, might not only provide an important means of promoting health, psychological well-being, and delayed mortality at the population level, but also could result in

a sharing of the load and associated reduction in the burden of responsibility experienced by those engaged in high levels of volunteering.

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Received March 7, 2007

Accepted July 10, 2007

Decision Editor: William J. McAuley, PhD

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