

How Helping You Helps Me: A Longitudinal Analysis of Volunteering and Pathways to Quality of Life Among Older Adults in Singapore

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Abstract

Objectives: Volunteering is known to be associated with well-being among older adults. However, less is known about the psychosocial pathways (e.g., personal mastery, social support) through which this occurs, with past studies tending to rely on cross-sectional data, which are susceptible to selection biases. This study, using longitudinal data, investigates how formal and informal volunteering may affect older adults' quality of life through personal mastery, perceived social support, and received social support.

Methods: Data are from 2 waves of a nationally representative study of older adults aged 60 years and older in Singapore, conducted between 2016 and 2019 ($N = 2,887$). We estimate indirect effects using a 2-wave mediation model, relying on bootstrapped confidence intervals for significance testing.

Results: We find indirect effects from volunteering to quality of life through perceived social support and personal mastery, but not through received social support. While any type (formal/informal) and frequency (regular/nonregular) of volunteering promotes quality of life through perceived social support, indirect effects through personal mastery are limited to regular volunteering in formal settings.

Discussion: Results provide longitudinal evidence for perceived social support as a key pathway from volunteering to quality of life. Volunteering may be an effective way to improve quality of life by helping older adults feel more supported, even if it may not affect the actual help that they receive. Further, a structured and sustainable environment may be required for volunteering to promote personal mastery (and through it, quality of life) among older volunteers.

Keywords: Informal helping, Personal mastery, Social support

Volunteering is unpaid work that is aimed at promoting the well-being of others (Morrow-Howell, 2010; Musick & Wilson, 2003). This includes visiting people, mentoring youth, aiding nonprofits in tasks such as fundraising, and more. Unlike providing other kinds of support (e.g., caregiving to family members), volunteering tends to be discretionary—the volunteer can, in theory, choose to discontinue their services at any time (Burr et al., 2021). Because volunteering not only strengthens the community but may also benefit the volunteer, many have advocated for it as a way to remain healthy and engaged in later life (Morrow-Howell, 2010). A growing body of research among older adults shows that volunteering improves a variety of health-related behaviors and outcomes (E. S. Kim et al., 2020). For instance, volunteers experience slower declines in physical (Carr et al., 2018) and cognitive function (Guiney & Machado, 2018) compared to nonvolunteers, and volunteering can lead to higher levels of social engagement in activities such as lifelong learning (Sung et al., 2023). However, research on how volunteering improves well-being through mediating factors such as social support

is often limited by cross-sectional data, making it difficult to separate the salubrious effects of volunteering from selection biases (e.g., that healthier or better-supported individuals are more likely to volunteer). This article attempts to address this gap by using longitudinal data to establish the indirect pathways through which volunteering influences quality of life among older adults.

How Volunteering Influences Quality of Life

That volunteering may improve quality of life among older adults is well-established (Milbourn et al., 2018). For instance, recent findings from England show that older volunteers' quality of life improved over time relative to that of older nonvolunteers (Matthews & Nazroo, 2021). The same analyses also revealed that the beneficial effect of volunteering seemed to stop when older volunteers ceased to volunteer, which suggests causality. Yet important questions about the nature of this relationship remain, such as the conditions under which volunteering work best (e.g., how regular

it needs to be), whom it works for, and crucially—through what mechanisms. As Burr and colleagues (2021, p. 311) point out in their review of the literature: “the accumulation of empirical evidence that a relationship exists has outpaced our understanding of the specific processes and mechanisms underlying the association.”

Volunteering is often thought to promote older adult well-being via two key pathways (amongst others)—by providing a sense of mastery, and by strengthening social support for the individual (Burr et al., 2021). First, when volunteers put in the effort to do tasks and see it correspond to better outcomes, it engenders a heightened sense of personal mastery (Thoits, 2011). Personal mastery refers to the extent to which individuals feel in control of their lives (Pearlin & Schooler, 1978)—a stronger sense of personal mastery helps individuals cope and adapt to adverse life circumstances, and is known to protect against death and disability (Latham-Mintus et al., 2018; Moreira et al., 2022). By contrast, fatalistic beliefs (i.e., beliefs that outcomes are predetermined and beyond one’s control) are associated with a reluctance to practice preventive health behaviors, and can lead to worse outcomes for health and well-being (Jimenez et al., 2020; H. K. Kim & Lwin, 2021). Volunteering can promote mastery by providing opportunities for older adults to actively shape their environments, helping them gain confidence in their ability to direct their own lives and make an impact in the lives of others (Son & Wilson, 2017).

Second, volunteering provides opportunities for older adults to build new friendships and thus widens older adults’ base of social support (Pilkington et al., 2012). Social support refers either to the support an individual perceives to be available (i.e., perceived social support), or one’s actual receipt of social support (i.e., received/enacted social support). Perceived and received social support are only weakly related to one another—while higher perceived social support is consistently related to better health outcomes in most situations, researchers have found that protective effects from received social support are highly context-dependent (Ang & Malhotra, 2022; Thoits, 2011). Volunteering is often a group-based effort, creating a milieu for new social ties to be formed, especially for those more comfortable with forming friendships within the context of doing an activity together (O’Dare & del Aguila, 2023). It is thus commonly thought to be associated with higher levels of social support, but most studies tend to rely solely on measures of perceived social support (Lee et al., 2022; Lyons et al., 2021; Parkinson et al., 2010; Pilkington et al., 2012).

Is It Just Reverse Causality?

However, determining whether personal mastery and social support mediate the relationship between volunteering and older adult well-being is not simple. Personal mastery may not only result from volunteering (i.e., causation) but also precede it (i.e., selection). In other words, those who feel that they are in control of their lives may be more likely to seek out volunteering opportunities in the first place. Son and Wilson (2017, pp. 842–843) point out that “[t]o become volunteers, people must decide to take action, often uncertain as to the true costs of their altruism, whom they will encounter, or whether their efforts will make any difference.” In their cross-lagged panel analysis, they find that personal mastery predicts volunteering, but not vice versa. This brings into question prior studies

arguing that volunteering promotes personal mastery, especially those that rely on cross-sectional data (see Anderson et al., 2014, for a review).

Similarly, those who are well-supported by friends and family may be more likely to volunteer. Older adults may feel more prepared to help others through volunteering if they have a sufficient base of instrumental and emotional support to personally draw from (Pilkington et al., 2012). Related studies also show that individuals who have diverse social networks are exposed to more volunteer opportunities (Southby et al., 2019); those who spend more time with family and friends are more likely to be recruited by them in such activities (Paik & Navarre-Jackson, 2011). Yet studies investigating the relationship between volunteering and social support rely heavily on cross-sectional data, again making it difficult to disentangle the causal direction at work (Anderson et al., 2014). In this respect, Pilkington and colleagues’ (2012) study remains one of the most (if not the most) widely cited papers used to assert that volunteering improves social support. However, the authors themselves admit they cannot be certain of whether volunteering promotes social support, or if those who are more well-supported are more likely to become volunteers.

The Current Study

In this study, we rely on two waves of nationally representative data from Singapore to answer the broad research question: Do personal mastery and social support mediate the relationship between volunteering and quality of life? We contribute to the broader literature on volunteering and well-being in three ways. First, we consider the role of both perceived and received social support. Discriminating between these types of social support is critical given how they may affect well-being in different (and sometimes opposite) ways (Thoits, 2011). Second, we consider personal mastery (an intrapersonal resource) and social support (an interpersonal resource) simultaneously. Volunteering is an intrinsically social activity—understanding how it promotes well-being may help organizations best leverage and customize opportunities (e.g., providing more tasks to complete, or more space for social interaction) to attract, retain, and benefit older adult volunteers. Further, personal mastery and social support share a complex relationship with each other and can obscure their overall associations with well-being. Studies have found that under certain circumstances receiving more social support can reduce personal mastery, in turn harming overall well-being (Ang & Malhotra, 2016, 2022). Considering both mediators together can provide insight into whether volunteering is able to overcome this apparent conundrum by promoting both social support and personal mastery. Finally, we utilize longitudinal data to investigate how personal mastery and social support mediate the association between volunteering and quality of life. This approach uses temporal ordering to address inherent issues of reverse causation between volunteering and its mediating factors, for which evidence is lacking.

Singapore provides an especially appropriate context to explore these relationships. Volunteering rates among older adults in Singapore are relatively low. Recent national surveys show that most (approximately 85%–90%) older adults aged 60 years and older did not volunteer at all in the past 1 year (Jung et al., 2023; M. Tan et al., 2022). One

possible reason for this is that social policies in Singapore strongly emphasize the role of family (Rozario & Rosetti, 2012), leading older adults to focus most of their time and effort to build and maintain intrafamily relationships, instead of volunteering (Aw et al., 2017). At the same time, this reliance on social support from family may become untenable in the long run, as family sizes shrink and more older adults live in nonfamily-based households (Ang & Suen, 2023). Another possible reason is that older adults may not feel sufficiently empowered to make a change within their communities. The Singapore government has historically intervened in and regulated many aspects of social life—a general sense of learned helplessness (or over-reliance) vis-à-vis the state may lead some older adults to feel pessimistic about the impact they can make (Aw et al., 2020). Given these considerations, there may be skepticism about whether volunteering in fact promotes well-being, or if observations of better well-being among volunteers are driven mainly by selection mechanisms into volunteering. Our study presents longitudinal evidence to clarify these mechanisms. We test three key hypotheses.

H1: Volunteering at baseline is positively associated with personal mastery, perceived social support, and received social support at follow-up.

H2: Personal mastery, perceived social support, and received social support at baseline are positively associated with quality of life at follow-up.

H3: There are indirect effects from volunteering to quality of life through personal mastery, perceived social support, and/or received social support.

Method

Data and Sample

Data are from two waves of the Transitions in Health, Employment, Social Engagement and Inter-Generational Transfers in Singapore Study (THE SIGNS Study) conducted in 2016–2017, and 2019. A nationally representative sample of 9,736 older Singaporeans, aged 60 years and older (stratified by age group, gender, and ethnicity, based on the estimated 2015 population distribution), were approached for participation. To ensure sufficient representation of those of higher age and minority groups, those aged 75+ and those of Malay or Indian ethnicity were oversampled by a factor of 2. After excluding 814 ineligible individuals (e.g., due to institutionalization, death, invalid address, etc.), a total of 4,549 older adults (50.7% response rate) were interviewed face-to-face using a structured questionnaire with informed consent. Proxy interviews were conducted for those unable to respond for themselves due to health reasons (~8%). More details on the study can be found on the study team's website (<https://www.duke-nus.edu.sg/care/research/the-signs-study-iii-and-iv>). The analytic sample for this study consists of all respondents who participated in both the baseline and follow-up waves ($N = 2,887$, 63.5% response rate). All estimates were weighted using attrition-adjusted sample weights (estimated from a logistic regression model predicting participation in the follow-up wave) that account for the probability of respondents being lost to follow-up.

Measures

Volunteering

Both informal and formal volunteering were assessed in THE SIGNS Study. For formal volunteering, respondents were first asked if they had provided unpaid help to any groups, clubs, or organizations—such as by raising money, organizing events, visiting people, secretarial work, campaigning, and more—in the past 12 months. Respondents who said yes to any of the activities listed were asked how often they had done them in the past 12 months. We used information from both questions to categorize individuals into nonvolunteers (did not volunteer), nonregular volunteers (volunteered but less than once a month), and regular volunteers (volunteered at least once a month). We also use the same method to construct a separate measure for informal volunteering/helping to nonrelatives (which included unpaid help given to others outside of a group, club, or organization—such as doing shopping, household work, babysitting, writing letters, filling in forms, and more).

Quality of life

Quality of life was measured using the 11-item Control, Autonomy, Self-Realization and Pleasure Scale, recently validated for the older population in Singapore (CASP-11-SG; L. T. Tan et al., 2023). THE SIGNS Study includes this shortened version of the original 19-item scale (CASP-19), which has been validated in various older adult populations around the world (G. R. Kim et al., 2015). Respondents are asked to respond to a set of 11 statements, such as how often they “feel that [their] life has meaning” or “look forward to each day” or “feel satisfied with the way [their] life has turned out.” Possible values on this scale range from 0 to 33, with higher values indicating better quality of life (Cronbach's alpha = 0.80).

Personal mastery

Personal mastery refers to how much individuals feel in control of their lives. It was assessed using the five-item version of the Pearlin Mastery Scale (Pearlin & Schooler, 1978), which tends to have higher reliability compared to the full seven-item version (Gadalla, 2009). Responses for each item, scored on a 4-point agree–disagree format, were summed up to form a single score (possible range: 5–20; higher scores indicate a higher level of personal mastery; Cronbach's alpha = 0.84).

Perceived social support

Perceived social support was assessed through the Lubben Social Network Scale–Revised (LSNS-R; Lubben et al., 2006). The LSNS-R is a 12-item questionnaire that measures the extent of the network respondents believe they can rely on when needed, using questions such as: “How many [friends/relatives] do you feel close to such that you could call on them for help?” or “How many [friends/relatives] do you feel at ease with that you can talk about private matters?” In THE SIGNS Study, the prompt was modified slightly to assess contact and perceived closeness with family and friends *who did not live with the respondent*. Possible scores range from 0 to 60; higher scores indicate stronger perceived social support from outside the household (Cronbach's alpha = 0.87).

Received social support

Questions related to receipt of social support were asked in the following way: “In the past 12 months, have you received any of the following items or help from any of your family members [including your spouse], relatives, friends, or a migrant domestic worker?” Respondents were asked to enumerate network members from whom they received four forms of help: (1) financial assistance; (2) housework help; (3) food, clothes, or material goods; and (4) emotional support or advice. We created a variable for the total count of persons providing any of these types of help to the respondent. This variable thus assesses social support network size, which is a commonly used measure of received social support in past studies (e.g., Loprinzi & Ford, 2018; Stagg et al., 2018).

Covariates

Covariates used in the analysis (all from baseline) included sociodemographic characteristics of the older adult—age (in years), gender (men/women), ethnicity (Chinese/Malay/Indian/Others), education (none/primary/secondary/above secondary), number of surviving children, housing type (1- to 2-room government-built flat/3-room government-built flat/4- to 5-room government-built flat and private property), work status (working/not working), marital status (married/not married), living alone (living alone/not living alone), and the presence of a migrant domestic worker in the house (yes/no). We also included health-related covariates such as number of chronic illnesses (none/one illness/two or more illnesses), presence of any limitations in activities of daily living (ADLs) or instrumental activities of daily living (IADLs; yes/no), and depressive symptoms (measured using the 11-item version of the Center for Epidemiological Studies—Depression scale; Cronbach’s alpha = 0.75; Kohout et al., 1993).

Analysis

The theoretical model for the mediation analysis is shown in Figure 1. To fully utilize the longitudinal data, we estimate a two-wave mediation model (Little et al., 2007), described formally as:

$$Q_{2i} = \alpha + \delta Q_{1i} + \sum_{k=1}^3 \gamma_k M_{1ki} + \sum_{j=1}^4 \nu_j V_{1ji} + Z_{1i} \beta + \epsilon_i \quad (1)$$

$$M_{2ki} = \pi_k + \sum_{k=1}^3 \phi_k M_{1ki} + \sum_{j=1}^4 \lambda_{jk} V_{1ji} + Z_{1i} \zeta_k + \xi_{ki} \quad (2)$$

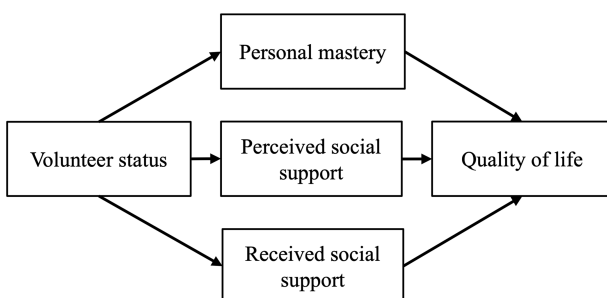


Figure 1. Theoretical model for pathways from volunteering to quality of life.

where variables denoting quality of life (Q), k mediators (denoted M ; where $k = 3$ including variables for personal mastery, perceived social support, and received social support), j dummy variables for volunteer categories (V), and covariates (Z) for individuals i are subscripted 1 or 2 according to whether the data are from baseline or follow-up wave, respectively. All residuals—including ϵ_i and the three ξ_{ki} terms—are allowed to covary within a 4 by 4 unstructured variance–covariance matrix. The indirect effect for predictor j through mediator k in the two-wave mediation model is derived as:

$$\eta_{jk} = \gamma_k * \lambda_{jk} \quad (3)$$

This means that two-wave indirect effects are the product of two associations: (1) the association of baseline volunteer status with each mediator at follow-up; and (2) the association of each baseline mediator with quality of life at follow-up. This approach to assess mediation in two-wave data is well-established in the literature (Cole & Maxwell, 2003; Newsom, 2015). It uses prospective (instead of concurrent) associations between predictor, mediator, and outcome to avoid bias from reverse causality. This strategy to test for indirect effects relies on the main assumption of stationarity (i.e., that associations between predictors, mediators, and outcomes are consistent across time).

Because sampling distributions of indirect effects may be nonnormal, 95% confidence intervals for indirect effects were derived using 1,000 bootstrap samples. Full information maximum likelihood (FIML) was used to address missingness across all variables. Missingness for covariates was trivial, at most constituting 0.2% of the sample. About 1.2% of the sample had missing volunteer status. At baseline (but not at follow-up), THE SIGNS Study assessed received social support and personal mastery for only a random half of the sample to reduce respondent fatigue. However, given that missingness is missing completely at random by design, the FIML procedure provides unbiased parameter estimates and standard errors. Missingness across mediator and outcome variables at follow-up constituted approximately 8% of the sample. All analyses were conducted using STATA 16.1.

Results

Sample characteristics are described in Table 1. Respondents were 69 years of age on average, were mostly women (53.5%), and of Chinese ethnicity (83.2%). A majority had primary school education or below (55.3%), stayed in 4- to 5-room government-built flats or larger (69.5%), had an average of 2.4 children, were married (74.7%), and were not working (57.8%). A minority lived alone (7%), and about 11.7% had a migrant domestic worker in their household. Most respondents had two or more chronic illnesses (58.7%), and about 10.9% had limitations in ADLs or IADLs.

Table 2 shows results from fully adjusted models predicting quality of life and the hypothesized mediators (personal mastery, perceived social support, and received social support) at follow-up (specified as per Equations 1 and 2). Of interest from these results are the paths that constitute the longitudinal indirect effect, which are: (a) the effects of mediators at baseline on quality of life at follow-up; and (b) the effects of volunteering at baseline on the mediators at follow-up. Note that (c) the effects of volunteering at baseline on quality of life at follow-up (shown in Model 1) play an ancillary

Table 1. Sample Characteristics, at Baseline ($N = 2,887$)

Variable	Weighted %	Mean (SD)
Volunteer status		
Formal volunteering		
Nonvolunteer	84.0	
Nonregular volunteer	7.3	
Regular volunteer	8.8	
Informal volunteering		
Nonvolunteer	77.6	
Nonregular volunteer	14.2	
Regular volunteer	8.2	
Mediators		
Personal mastery		14.4 (2.2)
Perceived social support		27.4 (11.4)
Received social support		0.9 (1.4)
Outcome		
Quality of life		25.2 (5.7)
Covariates		
Age		69.0 (7.4)
Gender		
Men	46.5	
Women	53.5	
Race		
Chinese	83.2	
Malay	9.6	
Indian	6.1	
Others	1.1	
Education		
No education	24.0	
Primary school education	31.3	
Secondary school education	29.0	
Above secondary school education	15.7	
Number of children ^a		2.4 (1.6)
Housing		
1- to 2-room government-built flat	7.3	
3-room government-built flat	23.3	
4- to 5-room government-built flat/private	69.5	
Number of chronic illnesses		
None	19.1	
One	22.2	
Two or more	58.7	
Working	42.2	
Married	70.7	
Living alone	7.0	
Living with migrant domestic worker	11.7	
Any ADL or IADL difficulties	10.9	
CES-D score		2.9 (3.1)

Notes: ADL = activities of daily living; CES-D = Center for Epidemiological Studies—Depression scale; IADL = instrumental activities of daily living; SD = standard deviation. Figures might not add up to 100% due to rounding. Sample size for individual covariates may vary, with missingness going up to approximately 8%.

^aAbout 12.2% of older adults reported having no surviving children.

role—while they do provide some evidence for temporal ordering (i.e., earlier volunteering influencing later quality of life), they should not be interpreted as direct effects (Cole & Maxwell, 2003; also see Supplementary Material). The coefficients showed that both personal mastery (Coef. = 0.225, $p < .01$) and perceived social support (Coef. = 0.036, $p < .001$) at baseline were positively associated with quality of life at follow-up. There was no evidence, however, that received social support was associated with quality of life.

Further, results showed that regular formal volunteering was associated with personal mastery (Coef. = 0.515, $p < .01$) and perceived social support (Coef. = 2.924, $p < .001$), but not received social support. Nonregular formal volunteering was only associated with perceived social support (Coef. = 2.144, $p < .05$). For informal volunteering, both regular (Coef. = 1.249, $p < .05$) and nonregular volunteers (Coef. = 2.092, $p < .01$) at baseline reported higher perceived social support at follow-up (compared to nonvolunteers), but evidence for associations with personal mastery and received social support were lacking. Notably, both formal and informal nonregular volunteering were negatively associated with personal mastery in the sample, although these associations were not statistically significant.

Table 3 provides the indirect effects (derived as per Equation 3), including bias-corrected confidence intervals derived from bootstrapping the model. Results showed that perceived social support was a consistent pathway through which volunteering improved quality of life. Informal and formal volunteering—whether nonregular or regular—were associated with a higher quality of life through a higher level of perceived social support. Indirect effects through perceived social support were generally stronger for formal (vs informal) volunteering, but these differences were not found to be statistically significant. None of the indirect paths through received social support were statistically significant. Results also provided evidence for personal mastery as a pathway through which volunteering improved quality of life, but this was only observed for formal volunteering, and only among regular volunteers. All model results were robust to a range of sensitivity analyses, such as including variables for changes in health across the two waves.

Discussion

Using two waves of data from a large, nationally representative sample of older Singaporeans, this study examined indirect pathways from volunteering to quality of life. Relying on longitudinal data in our mediation analysis to account for reverse causality, we examined three interrelated pathways—personal mastery, perceived social support, and received social support. Broadly, our findings showed that volunteering promotes quality of life through both personal mastery and perceived social support, although more consistently so for the latter. There was no evidence that volunteering promotes quality of life through received social support. Below, we situate these findings in the literature.

First, we find that volunteering is associated with higher levels of perceived social support, which in turn is associated with better quality of life. These findings provide longitudinal evidence to build upon the virtually exclusively cross-sectional findings of past research (see Anderson et al., 2014; Pilkington et al., 2012), confirming the intuition that volunteering helps older adults feel more supported; it is not just

Table 2. Results From Multivariable Models Predicting Quality of Life, Personal Mastery, Perceived Social Support, and Received Social Support at Follow-Up

Variable	(1) Quality of life at follow-up	(2) Personal mastery at follow-up	(3) Perceived social support at follow-up	(4) Received social support at follow-up
Volunteer status at baseline				
Formal volunteering				
Nonvolunteer	Ref.	Ref.	Ref.	Ref.
Nonregular volunteer	0.009	-0.330	2.144*	-0.165
Regular volunteer	0.847*	0.515**	2.924***	0.102
Informal volunteering				
Nonvolunteer	Ref.	Ref.	Ref.	Ref.
Nonregular volunteer	-0.020	-0.228	1.249*	-0.062
Regular volunteer	0.163	0.035	2.092**	0.102
Mediators at baseline				
Personal mastery	0.225**	0.147***	-0.060	0.042
Perceived social support	0.036**	0.009*	0.415***	0.008*
Received social support	0.078	0.037	-0.129	0.013
Outcome at baseline				
Quality of life	0.151***	—	—	—

Notes: * < .05. ** < .01, *** < .001. Models are adjusted for all covariates.

that more well-supported older adults tend to volunteer. This may be because volunteering can lead to more social interaction and facilitate the formation of new relationships (Nichol et al., 2023), providing a wider base of friends and acquaintances to potentially draw from in a time of need. What is notable here is that the positive indirect effect of volunteering on quality of life through perceived social support holds regardless of the type (i.e., formal or informal) or frequency (i.e., regular or nonregular) of volunteering undertaken. That we consistently see a positive association suggests that volunteering may be an effective way to improve quality of life by improving the perception of support—even informal and nonregular volunteering, which have low barriers of “entry,” can lead to better outcomes in the context of perceived social support.

Second, we find evidence that volunteering works through personal mastery to promote quality of life, but this is limited to formal volunteering, and to regular volunteers (compared to nonvolunteers). Completing meaningful tasks and helping others can provide a sense of confidence to individuals; volunteering can also expand the range of one’s socioemotional and practical skills (Nichol et al., 2023). However, our findings suggest that whether one can benefit from volunteering in this way may depend on the nature of the tasks assigned and the time one invests in completing them. This is in line with past studies demonstrating that the association between volunteering and mastery tend to be conditional—they may depend on a variety of other factors such as the type of organization or whether the cause is religious (Anderson et al., 2014). Indeed, as Tierney and colleagues (2022, p. e343) point out, “although the reviewed literature highlights that volunteering can augment, restore or transform individuals’ sense of self, certain conditions are required for such benefits to transpire.” Unlike informal volunteering/helping which are often episodic, formal volunteering opportunities tend to be more structured and purpose-driven—conditions that may be necessary for cultivating personal mastery. This is perhaps

why nonregular volunteering (whether formal or informal) is negatively associated with personal mastery in our sample. However, there is also the possibility that volunteers’ confidence may take a hit if they fail to complete the tasks given to them (Handley et al., 2022). This means that unlike the cultivation of social relationships and social support (which are largely incidental to volunteering), volunteering tasks may need to be intentionally designed for them to improve older adults’ quality of life through personal mastery.

Finally, there is insufficient evidence to show that there is an indirect effect of volunteering on quality of life through received social support. While it is widely recognized that volunteering can promote social interactions and expand volunteer’s social networks (Anderson et al., 2014; Nichol et al., 2023), few studies examine the actual support that older volunteers receive from other volunteers and/or organizations they volunteer with. Yet support between volunteers (and from organizations) may be necessary for volunteering to be sustainable, especially in situations where care work is involved (Handley et al., 2022; Vanderstichelen et al., 2019). Our study attempted to provide some insight into how volunteering affects volunteers’ received social support networks. That we do not observe an association between volunteering and received social support (and in turn, quality of life) here may be due to prevailing norms of providing and receiving help. Within the Singapore context, the responsibility to provide social support and meet the needs of older adults falls primarily on their children (Rozario & Rosetti, 2012). Few older adults in fact receive support from nonchild sources (Ang & Malhotra, 2022). The policy milieu also tends to privilege help coming from family sources, especially those who live together with older adults (Ang & Suen, 2023). Therefore, while volunteering may expand the range of potential sources from which older adults can draw support from, long-standing norms around the propriety of providing help to (and receiving from) nonfamily members may hinder translation into actual support.

Table 3. Mediation Pathways From Volunteering at Baseline to Quality of Life at Follow-Up

Path	Indirect effect	Bias-corrected 95% confidence interval
Formal volunteering		
Nonregular volunteer → Personal mastery → Quality of life	-0.074	[-0.210, 0.002]
Nonregular volunteer → Perceived social support → Quality of life	0.078*	[0.019, 0.174]
Nonregular volunteer → Received social support → Quality of life	-0.013	[-0.069, 0.008]
Regular volunteer → Personal mastery → Quality of life	0.116*	[0.035, 0.259]
Regular volunteer → Perceived social support → Quality of life	0.107*	[0.044, 0.223]
Regular volunteer → Received social support → Quality of life	0.008	[-0.007, 0.101]
Informal volunteering		
Nonregular volunteer → Personal mastery → Quality of life	-0.051	[-0.148, 0.005]
Nonregular volunteer → Perceived social support → Quality of life	0.045*	[0.007, 0.118]
Nonregular volunteer → Received social support → Quality of life	-0.005	[-0.036, 0.008]
Regular volunteer → Personal mastery → Quality of life	0.008	[-0.064, 0.099]
Regular volunteer → Perceived social support → Quality of life	0.076*	[0.022, 0.166]
Regular volunteer → Received social support → Quality of life	0.008	[-0.005, 0.053]

Notes: Reference category for volunteering is nonvolunteer, across both informal and formal volunteering.

*Indicates 95% bootstrapped confidence interval does not contain zero. Models include all covariates.

We acknowledge several limitations in our study. First, the two-wave mediation model allows us to test mediation longitudinally, but the method does not allow us to determine the proportion of the total effect being mediated by each factor, because the direct effect cannot be estimated (Cole & Maxwell, 2003). The effect of volunteering at baseline on quality of life at follow-up, in Table 2 Model 1, does not represent the longitudinal direct effect (which can only be estimated with a minimum of three waves) and should not be interpreted that way. We therefore make no conclusions about the extent of mediation occurring in relation to the total effect. The current model also relies on the assumption of stationarity, but this again requires at least three waves of data to test. Nonetheless, we do not expect this assumption to be severely violated, because studies estimating associations between similar constructs across

three waves have typically found these associations to be relatively stable across time (Li & Ferraro, 2005; Zhu & Chou, 2022). Future studies should rely upon more waves of data, and with different time lags, to further clarify these mechanisms. Second, we did not observe mediation through received social support, but this may be a result of the measure not capturing the types of support available through volunteering. For instance, we did not assess informational support or appraisal support, which volunteers are likely to receive from each other or from the organization (Tierney et al., 2022). Beyond this, received social support is often dependent on the needs of the older person, and is most effective when it matches such needs optimally (Melrose et al., 2015). Need may be a moderator of relationships between volunteering, received social support, and quality of life—however, THE SIGNS Study does not assess respondents' needs. Future studies should seek to more comprehensively capture the kinds of received social support older adults may receive as a direct consequence of volunteering, as well as if these are meeting some kind of need. Third, while we did find statistically significant pathways from volunteering to quality of life, the effect sizes are relatively small. To conclude that volunteering has negligible effects on older adults' quality of life and thus neglect it, however, would be premature. Instead, policymakers and practitioners should consider improving and optimizing the volunteering experience (e.g., opportunities, environment, tasks) to leverage on the salubrious pathways identified in this study.

In sum, our study investigated the pathways through which formal and informal volunteering affects quality of life among older adults in Singapore. We considered perceived social support, received social support, and personal mastery as mediators. Our findings contribute to the literature by providing longitudinal evidence that volunteering promotes perceived social support, a finding that has thus far relied on cross-sectional data. Volunteering may thus be especially beneficial for quality of life among older adults by improving their perception of the social networks they rely on for help. Improved perceived social support can itself lead to a positive impact on many other well-being outcomes for older adults (Thoits, 2011). However, normalizing the receipt of help from nonfamily members may be needed before volunteers feel comfortable providing actual help to one another. Further, we show that volunteering can improve quality of life through personal mastery, but this is limited to regular volunteering in formal settings. What this means is that a sustained and structured environment may be necessary for older adults to fully benefit from completing tasks related to volunteering, although such an environment is not vital for promoting social support.

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.

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