



# THE Art OF Health Promotion

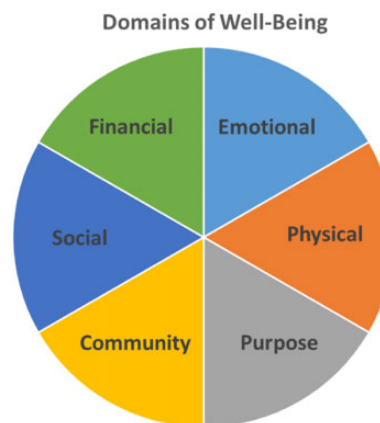
ideas for improving health outcomes

## The Opening Commentary by Sara S. Johnson, PhD

What is the essence of a good life? Aristotle tells us that it is “to serve others and to do good.” In this issue of *The Art of Health Promotion*, Dr Stephen Post supports his bold recommendation for a universal prescription to do just that with a comprehensive review of the literature on the benefits of volunteering. His G2BG Rx of 100 hours, a year of volunteer work, is indeed a win-win—as volunteering is a version of paying it forward that pays dividends back.<sup>1</sup> Dr Post asserts that no other behavioral intervention is as beneficial. Although we may not yet be able to definitively draw that conclusion, it certainly appears that volunteering—beyond contributing directly to community well-being—directly boosts well-being in numerous other domains. These findings support Gallup’s assertion that the domains of well-being are interdependent and reinforce one another.<sup>2</sup>

Dr Post’s review clearly highlights a myriad of benefits to physical and emotional well-being for individuals of all ages. The review also cites the heightened sense of purpose experienced by cardiac patients who volunteer. Fortunately, that effect is much more universal. Volunteering is routinely credited for enhancing one’s sense of purpose and meaning.<sup>1,3</sup> Perhaps that’s in part because it can also contribute to career well-being<sup>3</sup> by facilitating the exploration of new fields, the development of new skills, the accumulation of experience,<sup>1,3</sup> improvement in communication skills, and increased cultural sensitivity.<sup>4</sup> Volunteering makes it easier to build a network of contacts or find a job<sup>1,3</sup> and can help develop leadership skills.<sup>4</sup> So numerous are the benefits that some employers are finding that offering opportunities to volunteer provides a business edge by increasing employee retention.<sup>4</sup>

There are also numerous ways in which volunteering can enhance social well-being—it provides opportunities to meet new people, establish friendships, be a role model for others, and obtain more social support.<sup>1,3</sup> Volunteers report better social networks, enhanced feelings of belonging,<sup>5</sup> and better family functioning.<sup>1</sup> Horoszowski<sup>5</sup> emphasizes that volunteering increases empathy, which can enhance life satisfaction.



Barbara Fredrickson’s broaden and build theory of positive emotions and its extension, the Upward Spiral Model of LifeStyle Change,<sup>6</sup> may also provide a partial explanation for the reasons volunteering is so beneficial. It turns out that giving time actually increases one’s perception of having time (or “time affluence”)<sup>7</sup>—in part because by giving, people feel more confident, useful, and capable—which leads them to believe they can accomplish more in the future. These findings are very consistent with the notion that the relationship between positive emotions and psychological resources is in fact reciprocal, creating an upward spiral dynamic that may well increase the overall propensity for a host of other positive behaviors in addition to increasing the likelihood of continuing to volunteer. Fredrickson<sup>6</sup> saw similar effects for loving-kindness meditation—a form of mediation in which participants focus on warm and tender feelings with an open heart.

Some organizations are hopeful that volunteering may even be able to play a role in addressing racial tensions in America between police officers and the communities in which they serve. Big Brothers, Big Sisters, one of the country’s oldest mentoring volunteer programs, recently launched “Bigs in Blue” ([www.bbbs.org/bigs-in-blue](http://www.bbbs.org/bigs-in-blue)).<sup>8</sup> The program was initiated in 2016 (eg, Philadelphia) to connect elementary and middle school-aged youth in various communities with volunteer members of the local police department to build trusting relationships. Big Brothers, Big Sisters (BBBS) hopes to roll out the program nationally in 2017.

The positive effects of volunteering, however, may not be completely universal. Konrath et al,<sup>9</sup> for example, reported that the mortality risk reduction observed among volunteers was true only for those with “other-oriented” motives. Volunteers whose altruism was motivated by self-oriented reasons had mortality risk similar to that of nonvolunteers. Others have reported that the benefits of volunteering

### In This Issue

Editor’s Desk: The Opening Commentary By Sara S. Johnson, PhD .....	163
Rx It’s Good to Be Good (G2BG) 2017 Commentary By Stephen G. Post, PhD .....	164

are conferred only to those with a positive view of others.<sup>10</sup> These findings suggest that we may need to personalize the prescription to volunteer—perhaps through framing the prescription to foster positive views of others or to underscore the benefits to others.

Those caveats aside, Dr Post provides an incredibly compelling case for our field to consider the widespread prescription of volunteering. In the past, various health and health promotion experts have advocated for exercise as a prescription<sup>11</sup> or referred to patient engagement as the blockbuster drug of the century.<sup>12</sup> Based on the findings presented in the pages that follow, volunteering richly deserves a place on this short list of critical prescriptions for health and well-being. The challenge now is to follow the sage wisdom of Mahatma Gandhi who advised that “The best way to find yourself is to lose yourself in the service of others.” How might we incorporate this essential element into our personal and professional efforts to promote health and enhance well-being?

Sara S. Johnson, PhD  
Co-President and CEO, Pro-Change Behavior Systems, Inc.  
www.prochange.com

## References

1. Alspach JG. Harnessing the therapeutic power of volunteering. *Crit Care Nurse*. 2014;34(6):11-14.
2. O'Boyle E, Harter J. Why your workplace wellness program isn't working. 2014. <http://www.gallup.com/businessjournal/168995/why-workplace-wellness-program-isn-working.aspx>. Accessed December 16, 2016.
3. Segal J, Robinson L. Volunteering and its surprising benefits: how giving to others makes you healthier and happier. Available at: <http://www.helpguide.org/articles/work-career/volunteering-and-its-surprising-benefits.htm>. Accessed December 16, 2016.
4. MacArthur A, Ness AB. Skills-based volunteering: the news executive training ground. *Stanford Soc Innovat Rev*. 2013. [https://ssir.org/articles/entry/skills\\_based\\_volunteering\\_the\\_new\\_executive\\_training\\_ground](https://ssir.org/articles/entry/skills_based_volunteering_the_new_executive_training_ground). Accessed December 18, 2016.
5. Horoszowski M. Volunteering makes you happier: here's why. 2014. <http://blog.movingworlds.org/volunteering-makes-you-happier>. Accessed December 16, 2016.
6. Fredrickson BL. Positive emotions broaden and build. *Adv Exp Soc Psychol*. 2013;47:1-54. doi:10.1016/B978-0-12-407236-7.00001-2
7. Molinger C, Chance Z, Norton MI. Giving time gives you time. *Psychol Sci*. 2012;23(10):1233-1238.
8. Big Brothers Big Sisters. Connecting Youth and Police Through Mentoring. [www.bbbs.org/bigs-in-blue](http://www.bbbs.org/bigs-in-blue). Accessed December 12, 2016.
9. Konrath S, Fuhrel-Forbis A, Lou A, Brown S. Motives for volunteering are associated with mortality risk in older adults. *Health Psychol*. 2012;31(1):87-96. <http://dx.doi.org/10.1037/a0025226>
10. Poulin MJ. Volunteering predicts health among those who value others: two national studies. *Health Psychol*. 2014;33(2):120-129. doi:10.1037/a0031620.
11. Pedersen BK, Saltin B. Exercise as medicine—evidence for prescribing exercise as therapy in 26 different chronic diseases. *Scand J Med Sci Sports*. 2015;25(suppl 3):1-72. doi:10.1111/sms.12581.
12. Dentzer S. Rx for the ‘Blockbuster Drug’ of Patient Engagement. *Health Aff (Millwood)*. 2013;32(2):202. doi:10.1377/hlthaff.2013.0037.

# Rx It's Good to be Good (G2BG) 2017 Commentary: Prescribing Volunteerism for Health, Happiness, Resilience, and Longevity

**Stephen G. Post, PhD**

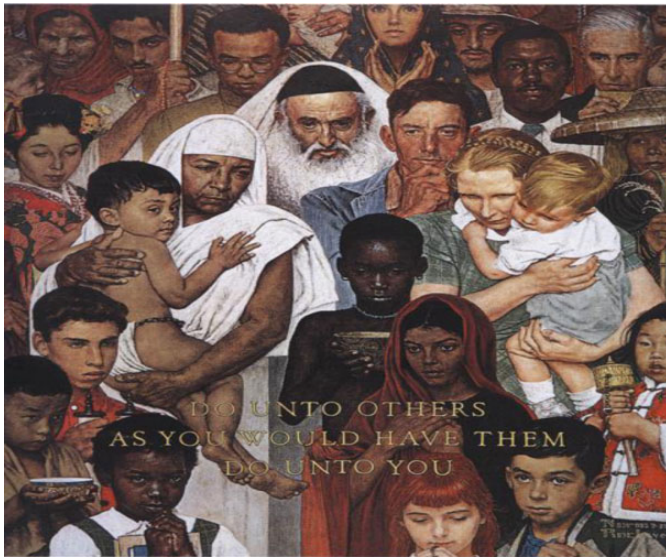
President, Institute for Research on Unlimited Love—Spirituality, Compassion, Service,  
[www.unlimitedloveinstitute.org](http://www.unlimitedloveinstitute.org) and Founding Director, Center for Medical Humanities, Compassionate Care and  
Bioethics Department of Family, Population, and Preventive Medicine Stony Brook University School of Medicine.  
Email: [stephen.post@stonybrookmedicine.edu](mailto:stephen.post@stonybrookmedicine.edu)

## Abstract

This article presents and interprets the strong evidence that helping others in meaningful ways generally results in a happier, healthier, resilient, and even longer life for the giver; based on the strength of this evidence overall and in subpopulations including patient groups, it then asserts that the time has come for health-care professionals to prescribe and recommend such behavior at sustainable levels generally in the range of 2 hours per week. The medical evidence justifies the prescribing (or recommending) of volunteerism and helping activities for individuals, schools, companies, and whole communities. This article presents this innovative claim against the backdrop Norman Rockwell's iconic image of *The Golden Rule* (1961), in which he captures the benefits of focusing our minds and actions on contributing to the lives of others. The review encompasses all age groups, many special categories of people grappling with illness, and population health generally.

## Keywords

volunteerism, prescribing, helping others, happiness, health, resilience, longevity, health care, doctors



This 2017 medical and health commentary presents and interprets the strong evidence that helping others in meaningful ways generally results in a happier, healthier, and more resilient life for the giver; based on the strength of this evidence overall and in subpopulations including patient groups, it then asserts that the time has come for health-care professionals to prescribe (or recommend) such behavior at sustainable levels generally in the range of 2 hours per week. Earlier renditions of this commentary provide systemic reviews of the scientific literature, going back to 2005 (Post),<sup>1</sup> when my article “Altruism, happiness, and health: it’s good to be good” did much to jump start this field of study. The publication of *Why Good Things Happen to Good People: How to Live a Healthier, Happier Life by the Simple Act of Giving* (2007) followed. An important book, *Alan Luks’ The Healing Power of Doing Good*,<sup>2</sup> came earlier.

Prescribing or recommending helping attitudes and actions in patients or communities is a universally valid contribution to preventive medicine and to the treatment of a wide variety of illness conditions. As a professor in a department of family, population, and preventive medicine, I can think of no other behavioral interventions that are as beneficial. Such a claim requires a careful justification written for a wide readership, both lay and professional.

Let us begin with a picture that in fact is worth a thousand words. Norman Rockwell was residing in Stockbridge, Massachusetts, in 1961, when he painted his iconic picture *The Golden Rule* for the cover of *Look Magazine*. Notice the obvious. He did not focus on the minimalist version of the rule, “Do not do unto others as you would not have them do unto you,” because it does not require much of us other than that we not inflict wanton harm on others. Rockwell focuses on the greater depth of the positive version of the rule, “Do unto others as you would have them do unto you,” a more demanding and idealistic norm that already includes the minimalist version in the same way that the Do’s generally cover the Don’ts of life.

Rockwell includes people of every age from the very young toddler to the very old. We know from the ample research of Paul Bloom at the Yale Child Studies Center that indeed toddlers as young as 18 months old demonstrate remarkable empathy and helping behavior.<sup>3</sup> Jean-Jacques Rousseau (dated 1778) had it right, science now shows, whereas the nastier images of the young child from Hobbes to Freud have failed the scientific test. Of course, we need to learn more about how to push the right buttons and raise caring children. In Rockwell’s

iconic image, the young, the old, and everyone in between are included, as are people of every religion, ethnicity, race and class, and men as well as women in equal numbers. The edges of the picture seem to spill over to encompass all humanity without exception, capturing the ideal of a global inclusivity in which everyone matters coupled with the message that we can give and live better healthier lives.

Rockwell placed a white circular halo in the middle of the image, starting with the rabbi’s white beard. He wanted to convey that whatever spirituality is worth having connects with *The Golden Rule* at its core. As a boy in New Hampshire, I heard him speak publicly about this halo, which is there because every person in the image is focusing their moral imaginations on the question of how they might use their creative gifts to contribute to the lives of others. They have a look of tranquility on their faces, a look now associated with the mesolimbic pathway of happiness, and the neurochemistry of “happiness.” These are everyday people with all the problems and ordeals of everyday life who are coping with stressors by focusing their minds not on the self or the problems of the self but on others. It is hence an image of inner freedom and happiness as the usual by-products of giving and focusing the mind on helping others.

What follows in this article is something of a footnote to Rockwell’s brilliant image, adding a bit of science and wisdom to his *The Golden Rule*—a work of art that preceded the Civil Rights Movement by at least several years and has tremendous influence on American culture. *The Golden Rule* in its positive formulation, which goes beyond the minimal requirements of the “thou shall not” version, is a norm found in every single spiritual and moral tradition going back to the ancient Indian *Upanishads*.

If Rockwell’s *The Golden Rule* is the visual *locus classicus* of our subject, the classic population survey was the 2010 online survey of a national sample of 4582 American adults 18 years and older, produced by United Healthcare/Volunteer Match Do Good Live Well ([www.dogoodlivewell.org/UnitedHealthcare-VolunteerMatch-DoGoodLiveWell-Survey.pdf](http://www.dogoodlivewell.org/UnitedHealthcare-VolunteerMatch-DoGoodLiveWell-Survey.pdf)) for which I was able to provide some consultation. The survey indicated that 41% of Americans volunteered in the year 2009 for an average of 100 hours per year (males 39%, females 42%; Caucasians: 42%, African Americans: 39%, Hispanics: 38%). Sixty-nine percent of the participants reported donating money in addition to volunteering. This 41% figure was up a little from the usual 35% perhaps because the economic downturn of 2008 left more people with time to engage in helping activities. The results of the survey showed:

- Ninety-six percent of volunteers agree that volunteering “makes people happier.”
- Sixty-eight percent of volunteers agree that volunteering “has made me feel physically healthier,” 92% that it “enriches my sense of purpose in life,” 89% that it “has improved my sense of well-being,” 73% that it “lowers my stress levels,” 77% that it “improves emotional health,” and 78% that it helps with recovery “from loss and disappointment.”
- Volunteers have less trouble sleeping, less anxiety, less helplessness and hopelessness, better friendships and social networks, and sense of control over chronic conditions.
- Twenty-five percent volunteers through workplace, and 76% of them feel better about employer as a result.

What shall we make of these numbers? Let me highlight the following:

*First*, Rx G2BG (“Good to be Good”) dosage: 100 hours per year spread out to about 2 hours per week, which is time enough to get fully immersed in an activity on a regular and sustainable basis. Individuals differ psychologically and physically, and they must balance their varying commitments to the nearest and the neediest. Thus, there is no particular dose of volunteering to be prescribed for every individual, other than to state that a couple of hours per week seems to make an impact on well-being. Going far beyond this threshold does not necessarily increase benefits.<sup>4</sup> I refer to this as the “2-hour shift effect.” But a caveat is in order: as will be indicated later herein, the Rx 2 h/wk is a composite figure, and in fact, adolescents may just need 1 hour a week, whereas older adults in retirement may benefit most from 4.

To reiterate, it is not the case that *the more one gives the better one feels*. Such a linear model is untrue. The model is curvilinear—in other words, one achieves the “shift effect” through a couple of hours of helping actions that transform one’s mode of being and feeling (the well-established James-Lange theory of emotional change through action). In Rockwell’s image, everyone appears devoid of the hostile and destructive emotions that so adversely impact emotional and physical health. Perhaps they achieved this in part purely by focusing their minds on the *Rule*, which is known to increase altruistic activity<sup>5</sup> and bring calmness, or by also getting into the habit of active helping. The benefits begin to tail off once this emotional and behavioral shift occurs, and it is possible overdose at a point where helping becomes stressful and potentially harmful. This will be determined by individual constitution, circumstance, and meaning system.

*Second*, many Americans are struggling with unhappiness and depression, so any activity that makes 96% of participants feel happier is worth taking seriously. The people in Rockwell’s image have a sublime happiness about them, something more meaningful and deep than the superficial notion of happiness as a big grin smiley.

*Third*, 68% of volunteers indicate that it makes them feel “feel physically healthier.” This is a robust finding. Many of these volunteers are doing work that requires ambulation or other forms of activity, and this frees them from a more sedentary culture.

*Fourth*, 73% of volunteers report lowered stress. So many of us are completely caught up in the pressures of making ends meet, paying the bills, running from point A to B, or just handling challenging relationships and responsibilities of families and at work. No wonder everyone in Rockwell’s image looks so serene. They get free of self-centered chronological time and move into the *Now* of helping. Getting the mind off the self and the problems off the self through focusing on the needs of others, they break free preoccupation with *chronos*.

*Fifth*, 78% report that volunteering helps with recovery “from loss and disappointment.” A few weeks after the December 14, 2012, shootings at the Sandy Hook Elementary School in Newtown, Connecticut, I drove up there to reflect on the scene. There was anguish on every face, and the people in Starbucks were still tearing up. But, already there was a bumper sticker all around the town created by those who had suffered through this disaster. It said, “WE ARE SANDY HOOK. WE CHOSE LOVE.” There, in the depths of loss and anguish, the people of Newtown found resilience and hope in affirming love. Indeed, much medical evidence now points out that especially in hard times, helping others consistently predicts resilience.

*Sixth*, 25% of volunteerism occurred through the workplace. A very broad literature underscores that companies can and do

encourage employee volunteerism, which is associated with positive relationships, better attitudes toward companies and employers, greater job satisfaction, strengthened work teams, greater competency and creativity, lower need for mental health care, easier employee recruitment, employee retention, and elevated interactions with customers leading to a better bottom line after about 6 weeks.

The survey was conducted by Taylor Nelson Sofres, the world’s largest custom survey agency, from February 25, 2010, to March 8, 2010. So helping others remains among the most effective ways for the average individual to get happier, although this is hopefully more a by-product rather than a direct goal because the true motive should always be to benefit others. The association between giving and happiness has become so widely accepted that the *World Happiness Report 2016* (<http://WorldHappinessReport.com>) includes generosity as 1 of 6 categories measured, along with others such as life expectancy, political freedom, and health.

## **Rx: It’s Time to Prescribe (or Recommend) “G2BG” Volunteerism and Helping Across the Life Span. Why Not Get People in Touch With What Could be Termed “The Giver’s Glow”?**

### *Young People*

Rockwell understood that people of any age can benefit from giving, and he included many youngsters in his image. This was scientifically sound. For example, a significant 2013 investigation on happiness and health examined volunteering in adolescents.<sup>6</sup> One hundred six 10th grade students in an urban Vancouver high school were split into 2 groups. One group volunteered regularly for 10 weeks, and the other group was placed on a waiting list for volunteer opportunities. Researchers measured body mass index, inflammation, and cholesterol levels before the study and afterward. They also assessed the students’ mental health, mood, and empathy. Volunteers spent 1 hour per week helping school children in after-school programs (such as homework club, cooking, cards, science club, and sports programs). After the 10 weeks, the study found lower levels of inflammation and cholesterol and lower body mass index in the volunteering students. The volunteers who reported the greatest increases in empathy, altruistic behavior, and mental health saw the greatest reductions in the biological markers. These markers, when elevated, are the first signs of cardiovascular disease, which is spreading in adolescents and as they enter adulthood limits their life expectancy. In accordance with this study, we can assert that perhaps for adolescents a mere 1 hour of volunteering per week will bring benefits.

It is well documented that volunteering in adolescence prevents teen pregnancy and academic failure, enhances social competence and self-esteem, and protects against antisocial behaviors, alcohol abuse, and substance abuse.<sup>7</sup>

Michele Dillon and Paul Wink present novel findings based on longitudinal data (2007).<sup>8</sup> Do generative qualities in adolescents predict better mental and physical health in adulthood? The authors address this question by examining data gathered from 2 adolescent research cohorts that were first interviewed in California in the 1930s and subsequently interviewed every 10 years until the late 1990s. Generativity, defined as behavior indicative of intense positive emotion extending to all humanity, was measured in 3 dimensions: givingness, prosocial competence, and social perspective. The results of the study indicated that generative adolescents indeed do become both

psychologically and physically healthier adults and that this health effect is more pronounced in the psychological realm. The authors discuss the limitations of the study in terms of sample size and demographic makeup caused by the relative homogeneity of the sample living in San Francisco's East Bay Area in the 1930s. Despite these limitations, Wink and Dillon's study lends crucial support to the notion that it is good to be good and that the benefits of altruism accrue across the entire life span.

Over the past 8 years, our primary research has been focused on adolescent alcohol and substance abuse. We all know teen opioid overdose is epidemic and teen alcoholism and alcohol abuse are at sky high levels. Our team, led by Maria E. Pagano of Case Western Reserve University, has shown in more than 40 peer-reviewed articles that the key to overcoming alcoholism in teens lies in service to others. Helping others through service predicts reduced recidivism, reduced relapse, and greater character development.<sup>9-12</sup>

Helping others has been shown to predict fewer social and behavioral problems in teens when they are helping family and strangers, while the same cannot be said for helping friends.<sup>13</sup> (Indeed, sometimes teens need to break away from negative peer pressures through helping in their families and assisting the neediest, a pattern that the United Health survey indicated leads to deeper and more meaningful friendships for most people.) Five hundred teens from a northwestern city in the United States were assessed for 3 consecutive years from 2009 to 2011. The average age at time 1 was 13.32 years; the sample included equal numbers of girls and boys, with 67% European American and 33% from single-parent families. Helping behavior toward family and strangers was predictive of fewer problem behaviors (eg, aggression and delinquency) 2 years later, while results for friends were mixed, as would seem reasonable.

This finding is not surprising because we know from studies in the 1990s that the third of adolescents who identified their primary motive as helping others were 3 times happier than those who lacked such motives.<sup>14</sup>

## Adults

In an important study conducted in the British population drawing on the British Household Panel Survey,<sup>15</sup> researchers asked if the association between volunteering and high well-being found in older people holds true across the life course. They found that the association became most apparent at age 40 years and above, continuing through old age. But mental well-being is also associated with volunteering in early adults, and they had no data whatsoever on teens. It may be that volunteering has stronger effects at some ages than others, but an abundance of research indicates that as with Rockwell's image, the benefits occur across the life course and are especially meaningful when certain helping behaviors are engrained in youth as we try techniques for raising a caring child. The "how to" of raising a caring child has been the focus of Nancy Eisenberg's important work since the early 1990s.<sup>16</sup>

In 1 impressive study that began in 1956, 427 wives and mothers who lived in Upstate New York were followed for 30 years by researchers at Cornell University. The researchers were able to conclude that, regardless of number of children, marital status, occupation, education, or social class, those women who engaged in volunteer work to help other people at least once a week lived longer and had better physical functioning, even after adjusting for baseline health status.<sup>17</sup>

In another study, volunteers who volunteered for 100 hours or more in 1998 were approximately 30% less likely to experience limitations in physical functioning when compared with nonvolunteers or those volunteering fewer hours per year, even after adjusting for smoking, exercise, social connections, paid employment, health status, baseline functional limitations, socioeconomic status, and demographics.<sup>18</sup> In an extensive study, after making all the same adjustments, researchers who analyzed data from 1500 adults between 1986 and 1994 found that volunteering predicted less functional disability 3 to 5 years later.<sup>19</sup>

## Older Adults

In a study published in 2013, 1100 older adults aged 51 to 91 years were interviewed about their volunteering and had their blood pressure checked in 2006, with a follow-up interview 4 years later in 2010. Those participants who were volunteering at least 200 hours (estimated 4 hours per week) in the year before their 2006 interview were 40% less likely to have developed hypertension 4 years later than nonvolunteers. Perhaps then 4 hours of volunteerism is a good idea in those who are older and perhaps mostly retired and therefore have the time. The researchers suggested that this impact was due to the stress-reducing effects of being both active and altruistic.<sup>20</sup> This study counters any claims that volunteering has effects on mental health and mood but not on medical conditions. Obviously, protracted high blood pressure contributes to morbidity and mortality.

More evidence to support the relationship between giving and longevity comes from a 1976 study. Nursing home residents were given more responsibility for everyday decision-making and were also able to pick out and care for a plant for their room (rather than having the nurses do it). The control group did not have this increased responsibility. The health of the plant-caring participants improved, as assessed by doctors who were unaware of the study. In addition, the death rate among the caring participants was half that of the control group.<sup>21</sup> In the context of the old-old (people aged 85 years or more), researchers studied 366 participants living independently in a retirement community. After controlling for age, gender, marital status, and chronic illness, those with higher levels of altruism (determined by questions such as "I place the needs of others ahead of my own") were happier and had fewer symptoms of depression than those who scored low in these attitudes.<sup>22</sup>

Altruism is associated with substantial reduction in mortality rates, even after differences in socioeconomic status, prior health status, smoking, social support, and physical activity are accounted for. In a large prospective study using a longitudinal survey of older adults, authors from the Buck Center for Research and Aging and Berkeley University tested the hypothesis that volunteerism may reduce mortality risk.<sup>23</sup> After adjusting for multiple covariables, the authors found that volunteering was significantly associated with reduced mortality. These results could only be partly explained by health habits, physical functioning, and social integration and support. The study population included 2025 community-dwelling residents of Marin County, California. All participants were aged 55 years or older at the time of the first interview in 1990 to 1991; 95% were non-Hispanic white, and 58% were female. The amount of volunteering was measured by the total number of organizations for which the participants volunteered. High volunteerism was defined as involvement with 2 or more organizations. Moderate volunteerism was defined as involvement with only 1 organization. The median number of hours volunteered per week by these older adults was 4, and

participants were dichotomized into less than or more than 4 hours a week. Covariates included physical health and functioning status (chronic diseases, self-reported functioning, observed physical performance measures, etc), health habits (exercise, amount of sleep, alcohol and smoking habits, body mass index, etc), sociodemographic factors (income, years of education, employment status, ethnic group), social functioning and support (marital status, religious service attendance, living arrangements, social activity attendance, etc), and psychological variables (East Boston Memory test, self-rated mental health, etc). Mortality was measured using local obituaries and attempts at reinterview. The National Death Index was consulted for the period from the first interview in 1990 to 1991 to the end of the second examination in November 1995.

The main results were that high volunteers had the lowest mortality rate for both genders ( $P < .02$ ) even after controlling for health and other relevant factors. The older the people were, the greater the difference in mortality rate between nonvolunteers and volunteers. For women, the highest mortality rate was among nonvolunteers, and there was a near linear trend from nonvolunteerism to moderate volunteerism, to high volunteerism. There was a threshold effect among men for high volunteers versus moderate volunteers to nonvolunteers. A statistically significant association between high volunteerism and decreased mortality rate remained after correction for health status, resulting in an overall 44% reduction in mortality. When volunteering was dichotomously coded, it remained significantly protective after controlling for baseline health, chronic conditions, health habits, and socioeconomic variables.

Oman's<sup>5</sup> research over a decade has focused on volunteering through a formal organization and thus does not treat informal helping behavior. He argues that the physical benefits of volunteerism are not attributable to the volunteers being more physically active because many forms of volunteerism do not have a physical component. He states that there are health benefits for paid workers, but volunteering is free from the stress and pressures of the work environment, generally involves more meaning, and has unique benefits associated with a clearer altruistic grounding. These findings hold true after adjusting for prior health status as well as social support and other identifiable variables. Oman's research shows that the benefits of volunteerism are consistently complimented by a reframing of life's purposes and that there is a related synergy between volunteering and religious involvement that provides more health benefits than either alone. In other words, a deep sense of the meaning of doing "unto others" adds benefits to volunteering.

In a study<sup>24</sup> from the Center for Health Care Evaluation and Stanford University, the researchers used a large national sample of older adults from the Longitudinal Study of Aging to test their hypothesis that frequent volunteering is associated with decreased mortality risk when the effects of sociodemographics, medical status, physical activity, and social integration are controlled. They found support for their hypothesis. This retrospective study used a nationally representative sample ( $n = 7527$ ) of community-dwelling older people ( $\geq 70$  years). Volunteering data were available on 7496 respondents. Mean age (standard deviation) was 76.8 (5.60) years, and the sample was 62.1% female. Participants were asked if they had engaged in different forms of volunteer work in the past 12 months, and if so, how frequently. Covariates included sociodemographic variables (age group, sex, income, ethnic group, years of education, etc), health (self-reported health, body mass index, medical history items, etc), physical activity (exercise levels), and social functioning and support (marriage, living arrangements, frequency of social activities, church or temple attendance, etc). Mortality information was obtained from

death certificates in the National Death Index. Survival times were calculated to the nearest month for those who died between January 1984 and December 1991 ( $n = 2866$ ). The remaining participants were presumed to be alive at the end of the 96-month screening period. When health and disability variables were included, those who sometimes volunteered had a 25% reduction in mortality risk and those who frequently volunteered had a 33% reduction. When physical activity variables were included, those who sometimes volunteered had a 23% reduction in mortality risk and those who frequently volunteered had a 31% reduction. When social functioning and support variables were included, there was a 19% reduction in mortality for those who volunteered frequently. The authors conclude, "We found that more frequent volunteering is associated with delayed mortality even when the effects of sociodemographics, medical and disability characteristics, self-ratings of physical activity, and social integration and support are controlled. The effect of volunteering on mortality appears to be more than a proxy for the well-known effects of social support, health, age, and other variables."

An early study compared retirees over age 65 years who volunteered with those who did not.<sup>25</sup> Volunteers scored significantly higher in life satisfaction and will to live and had fewer symptoms of depression, anxiety, and somatization. Because there were no differences in demographic and other background variables between the groups, the researchers concluded that volunteer activity helped explain these mental health benefits. Although nonvolunteers spent more days in the hospital and were taking more medications, which may have prevented them from volunteering, the mental health benefits persisted after controlling for disability. Other similar studies confirm similar benefits.<sup>26,27</sup> Volunteering can provide a sense of purpose among older adults who have experienced a loss of major role identities, such as being wage earners or parents,<sup>28</sup> and is more strongly correlated with well-being for retirees than for those who continue to hold paying jobs.<sup>29</sup>

### A Sample of Specific Illness Populations

The therapeutic benefits of helping others have long been recognized by everyday people. The concept was first formalized in a widely cited and often reprinted article by Frank Riessman that appeared in 1965<sup>30</sup> in *Social Work*. Riessman, a distinguished social psychologist and founding editor of the journal *Social Policy*, defined the "helper therapy" principle on the basis of his observations of numerous self-help groups, in which helping others is deemed absolutely essential to helping oneself. These are grassroots groups that today involve tens of millions of Americans. The saying goes, "If you help someone up the hill, you get closer yourself." Riessman observed that the act of helping another heals the helper more than the person helped. In the early 1970s, the "helper therapy" principle was noted in a few premier psychiatry journals as professional researchers found that helping others was beneficial in a variety of contexts—including teens tutoring younger children.<sup>31</sup>

We have already touched on children and adults of all ages in the foregoing discussion. The following section summarizes the impact of volunteering on individuals with 5 chronic illnesses.

**Alcoholics.** Alcoholics Anonymous (AA)<sup>32</sup> is the oldest and largest self-help group in the United States. Earlier, Pagano and colleagues<sup>33</sup> examined the relationship between helping other alcoholics and relapse in the year following treatment. The data were derived from a prospective study called Project MATCH, which examined different treatment options for alcoholics and evaluated their efficacy in

preventing relapse. Two measures of helping other alcoholics in AA (being a sponsor and having completed the Twelfth Step) were isolated from the data. The authors found that “those who were helping were significantly less likely to relapse in the year following treatment.” Among those who helped other alcoholics (8% of the study population), 40% avoided taking a drink in the year following treatment; only 22% of those not helping had the same outcome. Helping others doubles the likelihood of recovery from alcoholism in a 1-year period. Helping fellow sufferers in AA begins immediately upon involvement, from day 1, because the Twelfth Step is not implemented chronologically after preceding steps are accomplished. It is immediate upon joining and recorded as such.

**Chronic pain sufferers.** Individuals suffering from chronic pain experienced decreased pain intensity, levels of disability, and depression when they began to serve as peer volunteers for others suffering from chronic pain.<sup>34</sup> This suggests that the dynamic between helping actions and the experience of pain is considerable and requires further investigation. Pain is widely understood to be highly dependent on psychological states, both negative and positive. It is probably the case that helping others shifts the attention of person away from their pain, but there may also be a biochemistry involved that engages the endorphins, the body's natural chemicals that blunt pain.

**MS patients.** A small number of MS patients in a study of chronic illness were trained to provide compassionate, unconditional, positive regard for other Multiple Sclerosis (MS) sufferers through the venue of monthly supportive telephone calls that lasted 15 minutes. Over 2 years, the helpers showed “pronounced improvement in self-confidence, self-esteem, depression, and role functioning.”<sup>35</sup> The helpers especially benefited in terms of protection against depression and anxiety. The researchers posit that providing peer support to others allows the helpers to break away from patterns of self-reference, allowing a shift in quality of life and personal meaning.

**Cardiology patients.** At the Duke University Heart Center Patient Support Program, researchers concluded that former cardiac patients who make regular visits to help inpatient cardiac patients have a heightened sense of purpose and reduced levels of despair and depression, which are linked to mortality.<sup>36</sup> The Corporation for National and Community Service, which provides 2 million Americans of all ages and backgrounds with volunteer opportunities through Senior Corps, AmeriCorps, and Learn and Serve America, conducted a study using health and volunteer data from the US Census Bureau and the Center for Disease Control. It found that states with high volunteer rates also have lower rates of mortality and incidences of heart disease.<sup>37</sup> These findings resonate with those of Robert Putnam who found a strong correlation between level of social capital and good health in his study *Bowling Alone*.<sup>38</sup>

Further research on hostility and coronary disease was conducted by Redford B. Williams, the distinguished cardiologist at Duke University.<sup>39</sup> It turned out that only one of the several components of type A behavior leads to coronary artery disease—*hostility*. Williams used 50 questions pertaining to hostile emotions, attitudes, and actions from the Minnesota Multiphasic Personality Inventory (MMPI), a widely used psychological test, to form the Hostility Scale. Participants responded to statements such as “someone bumps into me in a store” or “life is full of little annoyances.” The group studied 255 doctors who had taken the MMPI in 1950 while in medical school at the University of North Carolina (UNC). As they aged from 25 to 50 years, those whose hostility scores were in the upper half were

4 to 5 times more likely than those with lower scores to develop coronary disease and nearly 7 times more likely to die of any disease. A group of UNC law students took the MMPI in the same year, and fully 20% with hostility scores in the highest quarter of their class had died by age 50 years, in contrast with only 4% of those in the lowest quarter. Eventually, the Hostility Scale was refined to 27 questions about cynical mistrust of others, frequent angry feelings, and overly aggressive behavior that were more predictive of higher mortality rates.

Many studies using the Hostility Scale have concluded that hostility is truly a health-damaging personality trait, while being in a rush and hurry is not. Moreover, as a group, people with high hostility scores are also unhappy. Most researchers explain the increased mortality in hostile individuals with coronary disease and cancer on elevated stress hormones cortisol and adrenaline (also known as epinephrine).

**Mental illness.** Many state offices of mental health, including that of New York State, emphasize the role of helping others through involvement in self-help groups. They recommend this activity to persons recovering from depression and schizophrenia.<sup>40</sup> This kind of state initiative is reminiscent of the famous “moral treatment” era in the American asylums of the 1820s and 1830s; persons with melancholy and other ailments were treated with compassion and also, whenever possible, directly engaged in prosocial activities.<sup>41</sup>

Increasingly, this connection has been taken seriously, even by government think tanks. For example, on October 22, 2008, the leading British governmental scientific group, *Foresight* (headed by the government's chief scientist Professor John Beddington and comprised of over 400 distinguished researchers) issued a major report entitled *Mental Capital and Wellbeing*, in which a campaign for the improvement in mental well-being and health was described. One of the 5 key elements of enhanced well-being and prevention of mental illness was “giving to neighbors and communities.”<sup>42</sup>

The mental health benefits of giving in the form of volunteerism—a wider form of giving than charitable donation—include fewer depressive symptoms. Research on volunteering and depression, conducted from 1986 to 1994 with 3617 adults aged 25 years and older, assessed depression using a self-report scale. Consistent volunteering was associated with reduced depression in all age groups but particularly in those aged 65 or older.<sup>43</sup> These results were significant after adjusting for baseline levels of depression, demographics, employment, socioeconomic status, health and functioning, health behaviors, and religious attendance.

Many studies described herein assert that helping others is causal. Helping behavior appears causative, for example, in a study of data from the *Americans' Changing Lives Survey*, which found that those who volunteered in 1986 reported in 1989 that they had higher levels of happiness, life satisfaction, self-esteem, physical health, and lower rates of depression than nonvolunteers.<sup>44</sup> An analysis of the *Assets and Health Dynamics Among the Oldest Old Study* found that persons aged 70 years or older who volunteered at least 100 hours during 1993 had less decline in self-reported health and functioning and lower levels of depression and mortality in 2000.<sup>45</sup> The argument that people who are depressed tend not to volunteer and that therefore the psychological benefits of volunteering really reflect the more elevated prior condition of the volunteer is not compelling. Although depression may be a barrier to volunteering in some cases, it is actually a *catalyst* for volunteering in older adults, who engage in such behaviors to offset the depression associated with role losses and loss of relationships.<sup>46,47</sup> Older adults who volunteered in 1986 had lower rates of

depression in 1994.<sup>43</sup> Progress in this evolving field builds on a decade of investigation, as was initiated in a single edited volume, *Altruism and Health Empirical Perspectives*.<sup>48</sup>

### **Health-Care Professionals and Burnout: The Big Caveat**

Briefly stated, for people who are already heavily engaged in the helping professions, and who each day are empathically engaged, the need is not for volunteering so much as for balance and care of self and family. This applies to doctors, nurses, clinical social workers, pastors, teachers, and many others who give professionally. It is important to realize that the threshold studies referred to above apply generally to everyday people who are not involved in compassionate helping as their day job and are therefore not subject to “compassion fatigue.”

We have an absolute crisis in health care. Half of doctors and equal numbers of nurses would quit if they could afford to. Many would prefer outpatient care to hospital care. The pace, grind, “task” mentality, late night paperwork, and money pressures of the hospital system make them feel like cogs in the wheel. The system denies them the opportunity they wanted to connect with the patient subjectively at the level of the illness experience. They have no venues to process emotions and disappointment at modern medical practice.

The problem is in part loss of professional autonomy, and time is the scarce resource. Professionals struggle to connect empathically with patients, and they find their work empty of meaning as a result. In addition, they do not take adequate care of themselves because they are expected to be extreme altruists and unlimited in their energy. The American College of Physicians recommends steps to avoid physician burnout, including balance between work and family, boundary setting, and good care of the self, including having fun.<sup>49</sup>

As a general rule, all health-care professionals of any variety who are routinely involved in helping and healing others should abide by the following guidelines:

- Be empathic, but the patient’s suffering is not your suffering (let it go).
- Realize that you cannot fix everything.
- Entrust your friends and colleagues.
- Step back from your initial emotional reactions.
- Have some sort of “spiritual” practice.
- Keep in mind the meaning and privilege of being a healer.
- Have a balanced life.

### **Does Giving Money Have the Same Benefits as Face-to-Face Helping?**

In general, the benefits of helping others are more pronounced in direct person-to-person “hands-on” activities because a social interaction engages psychological and biological systems more extensively. But there *is* a benefit to making a donation! A moments reflection suggests that while we will have a fuller experience of personal transformation when we actively engage in helping others through hospice work or innumerable other venues, there can be great delight in making a meaningful financial contribution to a charity. Indeed, I believe that I experience benefits in living a thrifty life so that I can support my children’s education and give to various global programs like Compassion International. Thrift makes financial giving possible.

Researchers at the National Institute of Neurological Disorders and Stroke are working with the National Institute on Mental Health and the National Institute on Aging on a new collaborative project entitled Cognitive and Emotional Health Project—The Healthy Brain. They have discovered that there is a physiological basis for the warm glow that seems to accompany giving, even when this occurs only in the form of philanthropy. The goal of this research was to uncover the neurology of unselfish actions that reach out beyond kin to strangers. Nineteen participants were each given money and a list of causes to which they might contribute, ranging from support for abortion to opposition to the death penalty. The functional magnetic resonance imaging revealed that making a donation activated the mesolimbic pathway, the brain’s reward center, which is responsible for dopamine-mediated euphoria.<sup>50</sup>

### **Which Comes First: The Happiness or the Giving?**

Sonja Lyubomirsky and colleagues<sup>51</sup> randomly assigned students to a control group and an experimental group in which they were asked to perform 5 random acts of kindness a week for 6 weeks. The students who engaged in acts of kindness were significantly happier than the controls at the end of the 6 weeks. This intervention demonstrates causality—giving generates happiness.

This is not to state that positive mood does not also *cause* acts of kindness. There is evidence that a positive mood elevates helping behaviors that goes back to 1972. After experiencing positive events (such as receiving cookies or finding a dime left in a payphone), people were more likely to help others.<sup>52</sup> It makes sense that inducing positive mood might slightly elevate giving. But giving itself is clearly mood elevating and hence creates its own internal circuit of enhanced happiness, which in turn feeds back into more giving. This follows the well-accepted fact that activities affect mood and emotion. In other words, 1 way to elevate happiness is to reach out in helping behaviors and contribute to the lives of others. That happiness in turn elevates giving, which in turn elevates happiness. The 2 fuel each other in a circular fashion—a classic feedback loop.

In a 2008 study published in *Science*, researchers from Harvard University and The University of British Columbia<sup>53</sup> showed that the ways in which people spend their money can make a difference in their happiness. The researchers were struck by the fact that doing something for others makes people feel happy. They studied 632 Americans, 55% of whom were women, and asked them to rate their happiness on a scale of 1 to 5, with 5 being the highest. Then, they asked the participants to report their annual income and estimate how much they spent on paying bills, buying gifts for themselves, buying gifts for others, and giving to charities. The first 2 items were termed “personal spending,” and the second 2 were termed “prosocial spending.” Personal spending was unrelated to happiness, but prosocial spending was associated with significantly higher happiness. Not quite content with that, the researchers studied 16 employees of a company in Boston. They asked about their happiness 1 month before and 6 to 8 weeks after each received a bonus. In the second interview, the employees were asked about personal and prosocial spending. They concluded that “the manner in which they spent that bonus was a more important predictor of their happiness than the amount of the bonus itself.” Prosocial spending resulted in more happiness than personal spending. Finally, 46 Canadian students were given a random envelope containing \$5 to \$20. Some were told to spend the money on themselves, and others were told to spend it on others in the form of a gift. At 5 PM that day, they reconvened and were asked to rate their



happiness. The amount of money had no impact on happiness. Those who had been assigned to buy something for another reported greater happiness.

Perhaps small positive other-regarding actions, even in the form of making a donation, displace the negative self-centered emotions that appear to have adverse consequences, thereby preventing stress-related physical harms. Indeed, focusing on helping others does turn off neural circuits associated with hostile emotions. After all, it is hard to be angry at the world when you are actively caring for people. The connection between destructive emotions, stress, and adverse physical health is well documented.<sup>54-56</sup>

### Rx Good to be Good and the Grain of Human Nature

Charles Darwin, later in his life, in his classic work *The Descent of Man*, wrote “Those communities which included the greatest number of the most sympathetic members would flourish best, and rear the greatest number of offspring.” Implicit in this observation is that helping others goes with rather than against the grain of human nature, at least within in-groups, and is a powerful aspect of our flourishing. The dominant human social reality is mutual aid. One would expect evolved health benefits to be associated with such activities. Of course, there is still the flip side of the coin—in-group versus out-group depersonalization, dehumanization, and hatred. Here, the human future depends on marshalling the moral and spiritual resources to achieve a stronger sense of a shared humanity in which everyone matters.

Of course helping others is not all there is to leading a happy and healthy life. Exercise makes a difference, as does a good night's sleep. A good diet helps (blueberries have large amounts of antioxidants; green tea includes flavonoids, which can protect blood vessels and fight inflammation). Whole grain cereals appear to decrease the risk of developing heart disease. Keeping a circle of friends and having a lasting low conflict marriage are important. Staying hopeful is also critical because optimists are less likely to die of heart-related causes than those who are very pessimistic. All of these recommendations are sound, but the focus here is on the scientific support for our central claim that sincerely contributing to the lives of others is premier way to live a happier, healthier, resilient, and longer life, on average.

*Proverbs* 11:15 reads, “those who refresh others will be refreshed.” Martin Buber<sup>57</sup> described the moral transformation of shifting from “I-It” to “I-Thou,” from a life centered on self as the center of the universe around whom, like the sun, all others revolve. This “I” relates to others only as means to its own ends. But the spiritual and moral self of “I-Thou” discovers “the other as other” and relates to them in compassion and respect. There is still an “I” of course, but a deeper and better I; science now shows a happier and healthier “I” as well. Every major religion recommends the discovery of a deeper and more profound human nature, designated in various ways as the “true self.” In *Acts* 20, we find the words, “Tis better to give than to receive,” and these echo down into the *Prayer of St. Francis*. Now science says it's so.<sup>58</sup>

The scientific story is now more or less complete, so with attention to the specifics of physical and psychological capacity in each individual, the time has come to prescribe helping others within limits of comfort and convenience. Rx: G2BG!

### Acknowledgments

The authors wish to acknowledge the Institute for Research on Unlimited Love, the John Templeton Foundation grant awarded to Maria E.

Pagano, and the Stony Brook University School of Medicine's Department of Family, Population, and Preventive Medicine.

### References

1. Post SG. Altruism, happiness, and health: it's good to be good. *Int J Behav Med*. 2005;12(5):66-77.
2. Luks A. *The Healing Power of Doing Good: The Health and Spiritual Benefits of Helping Others*. New York, NY: Fawcett Columbine; 1991.
3. Bloom P. *Just Babies: The Origins of Good and Evil*. New York, NY: Broadway Books; 2014.
4. Windsor TD, Anstey KJ, Rodgers B. Volunteering and psychological well-being among young-old adults: how much is too much? *Gerontologist*. 2008;48(1):59-70.
5. Oman D. Does volunteering foster physical health and longevity? In: Post SG, ed. *Altruism and Health: Perspectives from Empirical Research*. New York, NY: Oxford University Press; 2007: 15-32.
6. Schreier MC, Schonert-Reichl KA, Chen E. Effect of volunteering on risk factors for cardiovascular disease in adolescents: a randomized controlled trial. *JAMA Pediatr*. 2013;167(4):327-332.
7. Allen JP, Philliber S, Herrling S, Kuperminc GP. Preventing teen pregnancy and academic failure: experimental evaluation of a developmentally based approach. *Child Dev*. 1997;68(4): 729-742.
8. Dillon M, Wink P. *In the Course of a Lifetime*. Berkeley, CA: University of California Press; 2007.
9. Johnson BR, Lee MT, Pagano ME, Post SG. Positive criminology and rethinking the response to adolescent addiction: evidence on the role of social support, religiosity, and service to others. *Int J Criminol Sociol*. 2016;5:75-85.
10. Johnson BR, Pagano ME, Lee MT, Post SG. Alone on the inside: the impact of social isolation and helping others on AOD use and criminal activity. *Youth Soc*. 2015;1-22. doi:10.1177/0044118X15617400.
11. Lee MT, Pagano ME, Johnson BR, Post SG. Love and service in adolescent addiction recovery. *Alcohol Treat Q*. 2016;34(2): 197-222.
12. Post SG, Pagano ME, Lee MT, Johnson BR. Humility and 12-Step Recovery: a prolegomenon for the empirical investigation of a cardinal virtue in alcoholics anonymous. *Alcohol Treat Q*. 2016; 34(3):262-273.
13. Padilla-Walker LM, Carlo G, Nielson MG. Does helping keep teens protected? Longitudinal bidirectional relations between prosocial behavior and problem behavior. *Child Dev*. 2015;86(6): 1759-1772.
14. Magen Z. Commitment beyond self and adolescence: the issue of happiness. *Soc Indicators Res*. 1996;37:235-267.
15. Tabassum F, Mohan J, Smith P. Association of volunteering with mental well-being: a lifecourse analysis of a national population-based longitudinal study in the UK. *Br Med J Open*. 2016;6(8): e011327. doi:10.1136/bmjopen-2016-011327.
16. Eisenberg N. *The Caring Child*. Cambridge, MA: Harvard University Press; 1992.
17. Moen P, Dempster-McClain D, Williams RM. Social integration and longevity: an event history analysis of women's roles and resilience. *Am Soc Rev*. 1989;54(4):635-647.
18. Luoh MC, Herzog AR. Individual consequences of volunteer and paid work in old age: health and mortality. *J Health Soc Behav*. 2002;43(4):490-509.

19. Morrow-Howell N, Hinterlonh J, Rozario PA, Tang F. Effects of volunteering on the well-being of older adults. *J Gerontol B Psychol Sci Soc Sci*. 2003;58(3):S137-S145.
20. Sneed R, Cohen H. A prospective study of volunteers and hypertension risk in older adults. *Psychol Aging*. 2013;28(2):578-586.
21. Rodin J, Langer E. The effect of choice and enhanced personal responsibility for the aged: a field experiment in an institutional setting. *J Pers Soc Psychol*. 1976;34(2):191-198.
22. Kahana E, Feldman K, Fechner C, Midlarsky E, Kahana B. Altruism and volunteering: effects on psychological well-being in the old-old. Paper presented at: the Gerontological Society of America Meetings, November 12, 2004; Washington, DC.
23. Oman D, Thoresen E, McMahon K. Volunteerism and mortality among the community-dwelling elderly. *J Health Psychol*. 1999;4(3):301-316.
24. Harris AH, Thoresen CE. Volunteering is associated with delayed mortality in older people: analysis of the longitudinal study of aging. *J Health Psychol*. 2005;10(6):739-752.
25. Hunter KI, Linn MW. Psychosocial differences between elderly volunteers and non-volunteers. *Int J Aging Hum Dev*. 1980-1981;12(3):205-213.
26. Lawler KA, Youner JW, Piferi RL, et al. A change of heart: cardiovascular correlates of forgiveness in response to interpersonal conflict. *J Behav Med*. 2003;26(5):373-393.
27. Liang J, Krause NM, Bennett JM. Social exchange and well-being: is giving better than receiving? *Psychol Aging*. 2001;16(3):511-523.
28. Greenfield EA, Marks NF. Formal volunteering as a protective factor for older adult's psychological well-being. *The J Gerontol B Psychol Sci Soc Sci*. 2004;59(5):S258-S264.
29. Harlow R, Cantor N. Still participating after all these years: a study of life task participation in later life. *J Pers Soc Psychol*. 1996;71(6):1235-1249.
30. Riessman F. The 'helper' therapy principle. *Soc Work*. 1965;10(2):27-32.
31. Rogeness GA, Badner RA. Teenage helper: a role in community mental health. *Am J Psychiatry*. 1973;130(8):933-936.
32. Alcoholics Anonymous. *Twelve Steps and Twelve Traditions*. New York, NY: Alcoholics Anonymous World Services; 1952.
33. Pagano ME, Friend KB, Tonigan JS, Stout RL. Helping other alcoholics in Alcoholics Anonymous and drinking outcomes: findings from Project MATCH. *J Stud Alcohol*. 2004;65(6):766-773.
34. Arnstein P, Vidal M, Well-Federman C, Morgan B, Caudill M. From chronic pain patient to peer: benefits and risks of volunteering. *Pain Manag Nurses*. 2002;3(3):94-103.
35. Schwartz CE, Sendor M. Helping others helps oneself: response shift effects in peer support. *Soc Sci Med*. 1999;48(11):1563-1575.
36. Sullivan GB, Sullivan MJ. Promoting wellness in cardiac rehabilitation: exploring the role of altruism. *J Cardiovasc Nurs*. 1997;11(3):43-52.
37. Corporation for National and Community Service. The Health Benefits of Volunteerism: A Review of Recent Research. 2007. www.nationalservice.gov. Accessed December 15, 2007. Updated January 25, 2017.
38. Putnam R. *Bowling Alone: The Collapse and Revival of American Community*. New York, NY: Simon & Schuster; 2000.
39. Williams R, Williams V. *Anger Kills: Seventeen Strategies for Controlling the Hostility that Can Harm Your Health*. New York, NY: HarperPerennial; 1994.
40. New York State. Self-help and peer support. 2006. www.omh.state.ny.us/omhweb/ebp/adult\_selfhelp.htm. Accessed December 5, 2006.
41. Clouette B, Deslandes P. The Hartford retreat for the insane: an early example of the use of "moral treatment" in America. *Conn Med*. 1997;61(9):521-527.
42. Foresight Project on Mental Capital and Wellbeing (July 2006-October 2008). Mental capital and wellbeing: making the most of ourselves in the 21st century—final project report. www.foresight.gov.uk. Accessed November, 2008.
43. Musick MA, Wilson J. Volunteering and depression: the role of psychological and social resources in different age groups. *Soc Sci Med*. 2003;56(2):259-269.
44. Thoits PA, Hewitt LN. Volunteer work and well-being. *J Health Soc Behav*. 2001;42(2):115-131.
45. Lum TY, Lightfoot E. The effects of volunteering on the physical and mental health of older people. *Res Aging*. 2005;27(1):31-55.
46. Li Y, Ferraro KF. Volunteering in middle and later life: is it a health benefit, barrier, or both? *Soc Forces*. 2006;85(1):497-519.
47. Van Willigen M. Differential benefits of volunteering across the life course. *J Gerontol B Psychol Sci Soc Sci*. 2000;55(5):S308-S318.
48. Post SG, ed. *Altruism and Health: Perspectives from Empirical Research*. New York, NY: Oxford University Press; 2007.
49. Maguire P. Five strategies for physicians to overcome burnout. *Am Coll Phys Observ*. 2001. www.acponline.org/journals/news/mar01/burnout.htm. Accessed March 2001. Updated January 25, 2017.
50. Moll J, Krueger F, Zahn R, Pardini M, Oliveiri-Souza R, Grafman J. Human fronto-mesolimbic networks guide decisions about charitable donation. *Proc Natl Acad Sci*. 2006;103(42):15623-15628.
51. Lyubomirsky S. *The How of Happiness: A New Approach to Getting the Life You Want*. New York, NY: Penguin; 2007.
52. Isen AM, Levin PF. The effect of feeling good on helping: cookies and kindness. *J Pers Soc Psychol*. 1972;21(3):384-388.
53. Dunn EW, Aknin LB, Norton MI. Spending money on others promotes happiness. *Science*. 2008;319(5870):1687-1688.
54. Edwards JR, Cooper CL. The impacts of positive psychological states on physical health: review and theoretical framework. *Soc Sci Med*. 1988;27(12):1447-1459.
55. Sapolsky RM. *Why Zebras Don't Get Ulcers: The Acclaimed Guide to Stress, Stress-related Diseases, and Coping*. 2nd ed. New York, NY: Henry Holt and Company; 2004.
56. Sternberg EM. *The Balance Within: The Science Connecting Health and Emotions*. New York, NY: W.W. Freeman; 2001.
57. Buber M. *I and Thou*. New York, NY: Scribner's; 1923.
58. Post SG, Underwood LG, Schloss JR, Hurlbut WB, eds. *Altruism and Altruistic Love: Science, Philosophy and Religion in Dialogue*. New York, NY: Oxford University Press; 2002.