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# Volunteering is prospectively associated with health care use among older adults

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#### ABSTRACT

*Rationale:* Although observational and experimental studies have shown that volunteering is linked with better mental health, physical health, and health behaviors, no studies have examined whether volunteering is associated with patterns of health care use.

*Objective:* The purpose of this study was to prospectively examine whether volunteering was associated with a greater use of preventive health care services, but fewer doctor visits and nights spent in the hospital.

*Methods:* Participants (n = 7168) were drawn from the 2006 wave of the Health and Retirement Study, a nationally representative panel study of American adults over the age of 51, and tracked for one wave (2 years). Logistic regression and generalized linear models were used for analyses.

*Results*: In analyses that adjusted for sociodemographic factors and baseline health, volunteers were 30% more likely to receive flu shots (OR = 1.30, 95% CI = 1.16-1.47), 47% more likely to receive cholesterol tests (OR = 1.47, 95% CI = 1.24-1.74); female volunteers were 53% more likely to receive mammograms/x-rays (OR = 1.53, 95% CI = 1.28-1.83) and 21% more likely to receive Pap smears (OR = 1.21, 95% CI = 1.03-1.41); male volunteers were 59% more likely to receive prostate exams (OR = 1.59, 95% CI = 1.29-1.95). In a model that adjusted for sociodemographic factors, volunteers spent 38% fewer nights in the hospital (RR = 0.62, 95% CI = 0.52-0.76), however volunteering was not associated with frequency of doctor visits (RR = 0.94, 95% CI = 0.87-1.02). The association between volunteering and number of nights spent in the hospital was minimally affected after adjusting for potential confounding (baseline health) and explanatory variables (health behaviors, social integration, stress, positive psychological factors, personality).

*Conclusion:* This is the first known study to examine the association between volunteering and health care use. If future studies replicate these findings, the results may be used to inform the development of new strategies for increasing preventive health screenings, lowering health care use and costs, and enhancing the health of older adults.

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#### 1. Introduction

The United States has a rapidly aging population. People over the age of 65 currently represent 13.7% of the population, and by the year 2050, this is estimated to double (Vincent and Velkoff,

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2010). The average annual health expenditure is \$3931 for people under the age of 65 and \$10,082 for people over the age of 65 (Kashihara and Carper, 2012). As the number of older adults continuously increases, our aging population will likely put a significant strain on our health care system. Therefore, it is important to identify feasible and low cost interventions to help alleviate this strain.

Among the more expensive health care costs are hospital stays. Older adults (65+) account for 34% of hospital stays and 41% of hospital expenditures (Pfuntner et al., 2013). Each hospital stay for an adult aged 65–84 costs approximately \$12,300 (Pfuntner et al.,







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2013). Physician visits also represent non-trivial expenses, averaging \$218 per visit (Davis and Carper, 2012). A related issue is the underuse of preventive health care services among older adults. Less than 30% of adults aged 50–64 and less than 50% of adults over the age of 65 are up-to-date with core preventive services that could help improve health (Center for Disease Control, 2011; Department of Health and Human Services, 2010; Maciosek et al., 2010).

#### 1.1. Volunteering and health

Volunteering, or donating time to nonprofit organizations (Wilson, 2000), may be an ideal low-cost strategy to help improve health among older adults. In 2012, 64.5 million volunteers in the US (26.5% of the population) provided 7.9 billion hours of service, worth an estimated \$175 billion (Corporation for National & Community Service, n.d.). As summarized in recent reviews, volunteering is associated with better physical health outcomes (Konrath, 2014; Konrath and Brown, 2013). For example, compared to non-volunteers, volunteers report engaging in fewer health risk behaviors (e.g., smoking, drinking, sedentary lifestyles; Harris and Thoresen, 2005; Musick et al., 1999; Shmotkin et al., 2003). Volunteers also have better subjective health (Lum and Lightfoot, 2005; Musick and Wilson, 2003; Piliavin and Siegl, 2007) and randomized trials designed to increase people's volunteering behavior demonstrate causal effects of volunteering on increased physical activity, fewer functional limitations, and a healthier profile of cardiovascular biomarkers (e.g., inflammatory markers and cholesterol; Fried et al., 2004; Hong and Morrow-Howell, 2010; Schreier et al., 2013; Tan, Xue, Li, Carlson and Fried, 2006). Ultimately, volunteers have a lower mortality risk in prospective studies, even when controlling for plausible confounds such as prior health status (Harris and Thoresen, 2005; Konrath et al., 2012; Musick et al., 1999; Okun et al., 2013). There is much research on volunteering and health, however, we know of no research that has examined how volunteers use health care services, both as preventive measures (health behaviors) and as responses to illnesses (health outcomes). We address these questions in the current study.

Why might volunteering be associated with healthier lifestyle choices and better physical health? Scholars have a number of theories, ranging from psychological to social to physiological (see Fig. 1). There is currently no consensus in the literature about which explanation is best, and of course, each of them likely works together with the others in complex ways to promote healthy choices and better physical health outcomes.

#### 1.2. Potential psychological explanations

There may be internal characteristics of volunteers themselves, or psychological experiences that result from volunteering, that can help to explain why volunteering predicts better health outcomes. For example, people with relatively fewer stressful events in their lives may find it easier to make the time to volunteer in the first place, and those with more stressful events may be so depleted from trying to deal with them that they do not have extra psychological resources to devote to nonprofit organizations. These stressed out people may also have poorer health outcomes.

Another potential psychological explanation is that volunteers experience more positive emotions, psychological well-being, and less depression, when compared to non-volunteers (Meier and Stutzer, 2008; Windsor et al., 2008; Wheeler et al., 1998). Since positive emotions are associated with stronger immune systems (Dillon et al., 1985), better cardiovascular health (Boehm and Kubzansky, 2012; Fredrickson and Levenson, 1998), and a lower mortality risk (Chida and Steptoe, 2008), positive psychological states could be one potential explanations for the health benefits of volunteering.

In particular, volunteering appears to buffer against a low sense of purpose in life, especially among older adults who lack social positions in society or "role-identities" (Greenfield and Marks, 2004). Higher purpose in life has been linked with an array of health advantages such as increased longevity, decreased risk of heart attacks and strokes, and increased use of preventive health services and less use of illness-based health services (Boyle et al., 2009; Kim et al., 2014b; Kim et al., 2013a; Kim et al., 2013b). If volunteering increases a person's purpose in life, this increase in purpose may lead to a higher will to live, which in turn may lead to healthier lifestyle choices and better health.

Finally, people who choose to volunteer have different personalities than those who do not; volunteers score higher on agreeableness and extraversion than non-volunteers (Carlo et al., 2005; Elshaug and Metzer, 2001). In addition, although some studies find null or minimal associations between conscientiousness and volunteering (Carlo et al., 2005; Elshaug and Metzer, 2001), studies of older adults find that the relationship between conscientiousness and volunteering becomes larger during retirement, when conscientious people channel their energies outside of the workplace (Mike et al., 2014). It is thus possible that the health effects of volunteering are to some extent, explained by personality differences between volunteers and non-volunteers (King et al., 2014).

#### 1.3. Potential social explanations

Volunteering may also affect health by enriching people's social



Fig. 1. Potential explanations for how volunteering may affect physical health outcomes.

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