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# Personality Accounts for the Connection between Volunteering and Health

Hannah Rose King
*Washington University in St. Louis*

WASHINGTON UNIVERSITY IN ST. LOUIS

Department of Psychology

# Personality Accounts for the Connection between Volunteering and Health

by

Hannah R. King

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## Introduction

Volunteering is associated with better physical and mental health outcomes in older adults (Morrow-Howell, 2010). The question of how older adults spend their time as they transition from full-time work to retirement is an important one, particularly when coupled with the knowledge that volunteering is a viable path to better health. Another important variable to consider when exploring the relationship between volunteering and health is personality. People with certain personality traits are more likely to volunteer (Carlo, Okun, Knight, & de Guzman, 2005) and also more likely to have better health outcomes (Turiano et al., 2012). Given that existing literature shows that volunteering and personality traits are related, and that both individually predict health, an open question is how personality and volunteering relate to each other to contribute to physical and mental health.

The effects of volunteering on physical and mental health outcomes have been studied extensively. In terms of physical health, volunteering is associated with reduced mortality (Ayalon, 2008; Musick, Herzog, & House, 1999), better self-rated general health (Morrow-Howell, Hinterlong, Rozario, & Tang, 2003), and fewer impairments in physical functioning (Lum & Lightfoot, 2005). Volunteering also shows a strong relationship with positive mental health outcomes such as happiness, life satisfaction, self-esteem, sense of mastery, and reduced depression (Thoits & Hewitt, 2001).

Does volunteering lead to better health? Unfortunately, while there is an established relationship between volunteering and health it is unclear how this association comes about. People with greater initial levels of health may be more physically able to seek out or be able to volunteer in the first place. Another possibility is that volunteering contributes to increases in health either directly or indirectly, possibly through the physical or social components of

volunteering. Some studies of volunteering have attempted to tease apart the direction of association. Thus far, these studies indicate that initial differences in health exist between volunteers and non-volunteers. Interestingly, however, there is still an effect of volunteering on health when initial levels of well-being are taken into account, (Hao, 2008; Thoits & Hewitt, 2001). More recently, quasi-experimental study designs have been implemented to test whether volunteering leads to increases in health. In a study of Experience Corps® (EC), a national volunteer program that matches older adults with public school students to increase academic achievement, results show that volunteers have decreased physical limitations and decreased depressive symptoms after two years of high-commitment volunteer experience while controlling for pre-test scores (Hong & Morrow-Howell, 2010).

In addition to differences in health, other important antecedents of volunteering exist – though these have yet to be included in studies of volunteering and health. One prominent difference is the personality traits that characterize those individuals who engage in volunteering. This research has been described as the search for the "prosocial personality" (Penner, 2002) and identifies two factors, Other-oriented Empathy and Helpfulness, that differentiates volunteers from non-volunteers (Penner & Finkelstein, 1998). Other-oriented Empathy signifies those individuals who care and feel responsible for the well-being of others, and is highly correlated with the personality trait of agreeableness. Helpfulness identifies those individuals who take action, and it is strongly associated with traits of dominance and assertiveness (Penner, 2002), traits associated with extraversion and agreeableness.

A conceptually similar approach has relied on the Five-Factor Model (FFM) of personality to define personality traits that characterize volunteers. The FFM domains of agreeableness, extraversion, openness, neuroticism, and conscientiousness capture broad

personality patterns of thoughts, feelings, and behaviors (Costa & McCrae, 1992). Carlo et al. (2005) argued that the two traits that are theoretically linked to volunteering are agreeableness and extraversion. Agreeableness can be conceptualized by the facets of altruism, straight-forwardness, trust, tendermindedness, modesty, and compliance (Costa & McCrae, 1992). Several studies have demonstrated that trust plays a critical role in the decision to volunteer and that individuals who score high on trust are more likely to volunteer (Musick & Wilson, 2007). Extraversion, subdivided into warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotion (Costa & McCrae, 1992), is linked to volunteering through the social nature of volunteering (Carlo et al., 2005). The theoretical implication that extraversion is related to volunteering is confirmed by Penner's (2002) findings that people who are assertive, a facet of extraversion, are more likely to volunteer. Also, research shows that people with higher levels of the broad trait of extraversion are more likely to volunteer (Musick & Wilson, 2007; Okun, Pugliese, & Rook, 2007). Finally, people who volunteer score higher on the traits of conscientiousness and openness (Carlo et al., 2005). People high in conscientiosuness are likely to volunteer, especially during retirment given their proclivity to keep busy and accomplish tasks (Jackson et al., 2010). Openness may be related to volunteering because people high on openness tend to seek out new activities with novel people (McCrae & Sutin, 2009), experienes they are likely to find through volunteering.

Personality traits not only play an important role in identifying those individuals who are more likely to volunteer, but also show a relationship with health. Personality trait levels predict health outcomes (Turiano et al., 2012). Most research in this area has focused on the role of high neuroticism (also known as negative emotionality) predicting onset of illness and mortality, and the relationship between conscientiousness in both longevity and disease onset (Friedman, Kern,

Hampson, & Duckworth, 2012; Lodi-Smith et al., 2010; Mroczek & Spiro, 2007). However, research has also shown links between the traits of agreeableness and extraversion and mortality (Turiano et al., 2012). Additionally, positive affect is one facet in the domain of extraversion, and there is a well-documented relationship between positive affect and mortality, illness onset, and self-reported pain (Cohen & Pressman, 2006). Personality traits are also related to mental health outcomes. A robust literature shows that higher levels of extraversion and lower levels of neuroticism are associated with better mental health and well-being (Lamers, Westerhof, Kovács, & Bohlmeijer, 2012).

In sum, research shows a similar initial personality profile of those individuals who volunteer and those who have better health outcomes. Both groups have higher levels of extraversion, agreeableness, and conscientiousness. Neuroticism has been shown to be an important trait in health research and openness is related to volunteering. The evidence is also clear that individuals who volunteer have better physical and mental health outcomes than those who do not. Given the connection between personality characteristics, volunteering, and health, it is still unclear if volunteering contributes to better health when personality differences are taken into account. There are at least two reasons why personality has not been studied in relation to volunteering and health, and these elucidate the importance of this study. Historically the literatures have been separate; personality researchers have studied the relationship between personality and health outcomes, while social and public health researchers have studied volunteering and health. Another reason is that longitudinal studies of volunteering have been drawn from large nationally representative studies that often do not have comprehensive personality data. This study is uniquely positioned to integrate these separate literatures and has comprehensive information on personality, health, and volunteering.

The goal of our study is to examine if personality traits and volunteering are individual predictors of physical and mental health, see Figure 1 for the theoretical model we are testing. One question that we intend to answer is if volunteering is related to health because people who volunteer share personality characteristics with those people with better health outcomes? Or are personality characteristics and volunteering both separate and significant predictors of health? Another goal of our study is to explore the FFM personality characteristics of volunteers as there is little research detailing the traits of volunteers. Our study of personality and health in older adults will allow us to explore how personality traits add to our knowledge about the relationship between volunteering and health.

## Methods

### Design

The current study utilizes data from the St. Louis Personality and Aging Network (SPAN), a representative sample of community-based adults from the ages of 55-64. The SPAN study is an investigation of personality, health, and aging. Participants were recruited from the St. Louis area using listed phone numbers that had been cross-checked for age using census data. African American households were oversampled to more accurately represent the demographics of the St. Louis area (Spence & Oltmanns, 2011). For a full description of recruitment and other procedures see Oltmanns and Gleason (2011). All data included in these analyses are from the baseline assessment, a 3-hour battery of interviews and questionnaires.

### Participants

A total of 1,630 participants completed the baseline assessment. Participants were 55% female (n = 890), and 65% Caucasian (n = 1060). The average age of the participants was 59.5 (SD = 2.7). The majority of the participants had some secondary education (M = 14.93, SD = 2.70), and the median household income was between $40,000 and $59,000.

### Measures

**Volunteering** was assessed at baseline with a series of questions developed specifically for this study. Volunteer status was assessed with the question "Do you currently participate in community service or volunteer activities?" To gain insight into the type and duration of current volunteer experiences, information was collected on up to three volunteer organizations. Participants were asked to record the number of places they volunteered, the names of the volunteer organizations, and the number of years and hours per week spent at each organization.

**Personality traits** were assessed at baseline using the NEO-PI-R (Costa & McCrae, 1992). The NEO-PI-R is a self-report measure that assesses the Five-Factor Model of personality as well as six facets within each of five domains, resulting in 30 total facets. Participants were asked how much they agree with 240 items on a five-point scale ranging from 0 (*Strongly disagree*) to 4 (*Strongly agree*). The NEO-PI-R is a commonly used measure that has been shown to have good reliability and validity (Costa & McCrae, 1992).

**Health** was assessed at baseline with the RAND-36 *Health Status Inventory* (RAND-36 HSI (Hays, 1998). The RAND-36 HSI is a 36 item measure that assesses eight domains of health: physical functioning, role limitations caused by physical health problems, role limitations caused by emotional problems, social functioning, emotional well-being, energy/fatigue, pain, and general health perceptions. The physical functioning scale is composed of 10 items that assess health limitations in everyday physical activities. Physical functioning is often used as an outcome in volunteering studies and our scale is similar to the scale used in the Experience Corps® study (Hong & Morrow-Howell, 2010). A mental health composite (MHC) score is computed that combines the four scales of role limitations caused by emotional problems, social functioning, emotional well-being, and energy/fatigue. Higher scores on the scales indicate better health. The RAND-36 HSI has been shown to be a reliable measure in older adults and to discriminate between patients with different severities of physical and mental health problems (Hays, 1998).

**Covariates** of gender and education were included in the analyses. Previous research has shown that these demographic variables distinguish between those who volunteer and those who do not, i.e. women and people with more education are more likely to volunteer (Morrow-Howell et al., 2003). For education, the nine categorical response options were transformed to a

continuous variable with a possible range of 6.5–20 years of education. Response options were as follows (years of education in parentheses): Elementary or Junior High (6.5); GED (12); H.S. Diploma (12); Vocational Tech Degree (14); Associate Degree (14); R.N. Diploma (15); Bachelor Degree (16); Master Degree (18); and Doctorate: M.D., Ph.D., J.D., and so forth (20). Years of education and household income were strongly correlated, $r(1550) = .48$, $p < .001$, and therefore education was used as a general proxy for socioeconomic status and household income was not included as a covariate. Race and age were not significantly predictive of volunteer status when gender and education were controlled for and were also dropped as covariates.

**Analytic Plan**

Our overall analytic plan was to begin by analyzing the volunteering data, then determine the individual relationships between the variables (e.g. volunteering and health), and finally to test a model with all variables included. Differences between volunteers and non-volunteers were examined using independent sample t-tests and chi-squares. A binomial logistic regression predicting volunteer status was conducted to examine the relationship between personality and volunteering. A linear regression was run to test the relationship between personality and health. Finally, a series of hierarchical regressions were conducted to examine the relationship between volunteering and health, while including personality variables in the model. Figure 1 shows the model we are testing with the hierarchical regressions. Analyses were conducted using SPSS software.

## Results

### Volunteering

Thirty-nine percent of participants (n = 637) reported volunteer or community service participation. Table 1 presents descriptive statistics for volunteering, and shows that on average the volunteer experience in our sample was substantial both in terms of years volunteered and number of hours per week volunteered. For example, participants who volunteered at three organizations reported volunteering a combined average of 10 hours a week for 11 years at these organizations. Differences between volunteers and non-volunteers are shown in Table 2. Significantly more women, Caucasians, participants with more education, and participants with higher household income volunteer. Household income was assessed with an ordinal scale ranging from 1 (under $20,000) to 8 ($140,000 or more), with an average for non-volunteers of 3.61 indicating they fall in the income range of $40,000 to $59,000, while volunteers average 4.34, indicating a range of $60,000 to 79,000. Also, participants who are currently married and employed volunteer more than those who are not married or not employed.

### Volunteering and Personality

Table 2 also shows personality differences between volunteers and non-volunteers. On average, volunteers are more extraverted, agreeable, conscientious, and open, and they are also less neurotic. This personality profile has been hypothesized to reflect maturity and is consistent with normative personality change in aging (Roberts, Walton, & Viechtbauer, 2006). The correlations between volunteering and personality traits were small but significant and ranged from .20 for extraversion to .10 for conscientiousness (all $p < .01$). Using a logistic binomial regression to simultaneously predict volunteer status by the five personality factors, while controlling for years of education and gender, higher levels of extraversion (OR = 2.54, $p < .001$)

and agreeableness (OR = 1.75, p = .01) significantly predicted volunteer status, $R^2$ = .10, $\chi^2$ (7, *N* = 1333) = 135.98, *p* < .001. In terms of the facets of extraversion, higher levels of assertiveness, activity, and positive emotions (ORs = 1.40, 1.35, 1.30, respectively, p's <.05) predict volunteer status, while lower levels of activity seeking predict volunteer status (OR = .71, p =.003), $R^2$ = .10, $\chi^2$ (8, *N* = 1610) = 173.67, *p* < .001. Higher levels of the agreeableness facets of trust, altruism, and compliance significantly predict volunteer status (ORs = 1.37, 1.87, 1.30, respectively, p's <.05), $R^2$ = .09, $\chi^2$ (8, *N* = 1610) = 148.47, *p* < .001.

**Volunteering and Health**

The relationship between volunteering and health was analyzed with independent-sample t-tests. Participants who volunteer have significantly higher scores on physical functioning and the mental health composite of the RAND-36 HSI (see Table 2), indicating better physical, t(1580) = -5.41, p <.001, d = -.27, and mental health, t(1580) = -4.86, p <.001, d = -.24. Furthermore, on the remaining scales of the measure, volunteers have significantly better general health perceptions, and less role limitations caused by physical health problems.

**Personality and Health**

Next the relationship between personality and health was examined. A linear regression predicting physical functioning from the five personality domains was conducted, while controlling for gender and education. Lower levels of neuroticism (stand. b= -3.92, *p* < .001) were associated with better physical functioning, $R^2$ = .15, F(1, 1314) = 32.45, p < .001. Another linear regression was conducted to examine the relationship between personality and mental health, while controlling for gender and education. Higher levels of extraversion ($\beta$ = 2.36, *p* < .001) and lower levels of neuroticism (stand. b = -10.31, *p* < .001) were significantly associated with better mental health, $R^2$ = .35, F(1, 1303) = 101.00, p < .001.

**Volunteering, Personality, and Health**

Finally, two hierarchical linear regressions predicting physical and mental health were conducted with both volunteering and personality traits in the model as predictors. Table 3 displays the hierarchical linear regression for physical functioning, and table 4 describes the regression for mental health. In both regressions, volunteering is a significant predictor of health in step 1 and 2, even when controlling for gender and years of education ($p < .01$), but is no longer significantly predictive of health when personality traits are added to the model. In terms of physical functioning, lower levels of neuroticism are associated with better health. For mental health, higher levels of extraversion and lower levels of neuroticism were significantly associated with better mental health. These analyses were rerun using both number of hours volunteered and number of volunteer organizations as the volunteer variable. These results were consistent with the dichotomous yes/no volunteer variable so for ease of interpretation only these results are reported.

## Discussion

The primary purpose of this study was to address an open question in the literature about the relationship between volunteering and personality traits in predicting both physical and mental health. Previous research has shown that volunteering predicts physical and mental health (Morrow-Howell, 2010), and that personality characteristics predict better mental and physical health outcomes (Lamers et al., 2012; Turiano et al., 2012). However, no study has studied personality and volunteer status as simultaneous predictors. The lack of representation of personality traits in studies of volunteering and health is problematic because there is a theoretical reason to believe that personality traits could be driving the relationship between volunteering and health given existing literature. Our results show that when both volunteer status and personality traits are in the model, volunteer status is no longer significantly predictive of either mental or physical health. In other words, when controlling for personality traits, volunteering is not predictive of better health outcomes. In both physical and mental health, lower levels of neuroticism predicted better health, and for mental health higher levels of extraversion predicted better outcomes. These results are consistent with the personality literature as neuroticism and extraversion have been shown to be important traits in health outcome studies (Lamers et al., 2012; Mroczek & Spiro, 2007).

These results provide insight into the questions posed in the introduction. In our large community-based sample, volunteering is related to health outcomes because of the personality characteristics of volunteers, not the volunteering experience in and of itself. These results indicate that volunteers have a specific personality profile, i.e. a personality profile that reflects greater maturity (Roberts et al., 2006), that is driving the relationship with better health outcomes. These results are an important first step in exploring health outcomes in older adults.

Previous research that has studied the relationship between volunteering and health has neglected to take personality traits into account. However, it is important to note that these analyses do not show that volunteering is not an important pathway to health. More so, it appears people who volunteer are those who would have better health outcomes due to already established personality characteristics.

These findings raise an important question about the use of interventions that focus on increasing volunteering in older adults. More recent volunteering research has focused on teasing apart under which conditions volunteering produces the most positive results for older adults. Questions have been raised about the characteristics of individuals who will benefit the most from volunteering, i.e. identifying subgroups to target like those with limited resources, the type of volunteer experience that is most beneficial for the individual, and identifying the mechanisms of volunteering that promote well-being (Morrow-Howell, 2010). These results highlight that personality psychology is another critical area to take into account with intervention research. If people who volunteer have a specific personality profile and are more likely to have better health outcomes, then it is possible that interventions should target those individuals who are high on neuroticism and low on extraversion. Would the benefits of volunteering be increased for those individuals who do not have an initial inclination to volunteer? Also, how would interventions target these individuals based on personality characteristics? Future studies should also explore whether personality characteristics are related to the type of organization that a person volunteers at or the motivation for volunteering.

Furthermore, another goal of our study was to analyze the volunteering experiences in our sample and also to replicate previous findings on the bivariate relationships between personality, volunteering, and health. First, we established that the volunteer experience in our

sample was both substantial in hours per week and years volunteered. Our results also show that, consistent with past research (Morrow-Howell et al., 2003), the profile of volunteers differs from those individuals that do not volunteer. Volunteers are more likely to be female, have more education, higher income, and are more likely to be employed. We replicated past research when we found that extraversion and agreeableness are the strongest personality predictors of volunteer status (Carlo et al., 2005), neuroticism and extraversion are related to better health outcomes (Lamers et al., 2012; Turiano et al., 2012), and volunteers have better physical and mental health (Morrow-Howell, 2010).

**Limitations**

The main limitation of this study is that these data are cross-sectional and the direction of this relationship is unclear. Our interpretation of the results is that personality characteristics preceded the volunteer experiences and that the personality traits were the driving force behind both volunteer status and better health outcomes. However, an argument could be made that the volunteer experience contributed to personality change and this in turn related to better health outcomes. This interpretation is plausible because research has consistently shown that personality change is normative, but it is more likely that personality characteristics preceded both volunteering and better health outcomes for two reasons. First, a meta-analysis has shown that personality change is relatively small in effect size in general, and secondly, that personality is more stable in middle to older age adults with less change found in those samples than in younger adults (Roberts et al., 2006).

A second limitation of this study is that we are not able to contribute knowledge to the question of whether selection effects or causation processes contributed to the better health outcomes we found. Without a longitudinal study, we are unable to answer the question of

directionality. However, these data did allow us to contribute to the literature with the initial starting point that personality clearly is important in understanding the relationship between volunteering and health. And importantly, these two limitations direct the focus of future research. These findings necessitate a focus on longitudinal studies of volunteering, health, and personality.

Finally, these results focus on a limited age range of adults from the ages of 55-64. Other research on volunteering usually focuses on a broader-range of older adults, and these results may not be consistent across different age ranges. Specifically, the studies cited in the introduction all have a mean age above the one in this study. It is plausible that the role of personality characteristics may differ at older ages. Volunteering may have a greater impact on physical and mental health for adults over the age of 65. Again, this limitation highlights the importance of a comprehensive longitudinal study.

**Conclusions**

This study first replicates then integrates three robust literatures on volunteering, personality, and health. We found that volunteers are more likely to exhibit certain personality traits, i.e. volunteers are more extraverted and agreeable, volunteers are more likely to have better physical and mental health outcomes, and finally that certain personality traits, neuroticism and extraversion, are also related to better physical and mental health. We have added to the literature by showing that volunteering is no longer related to health when personality traits are taken into account. These results highlight the importance of accounting for personality traits when examining important outcomes, particularly health in older adults.

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## Tables and Figures

Figure 1

*Model of Analytic Plan.*

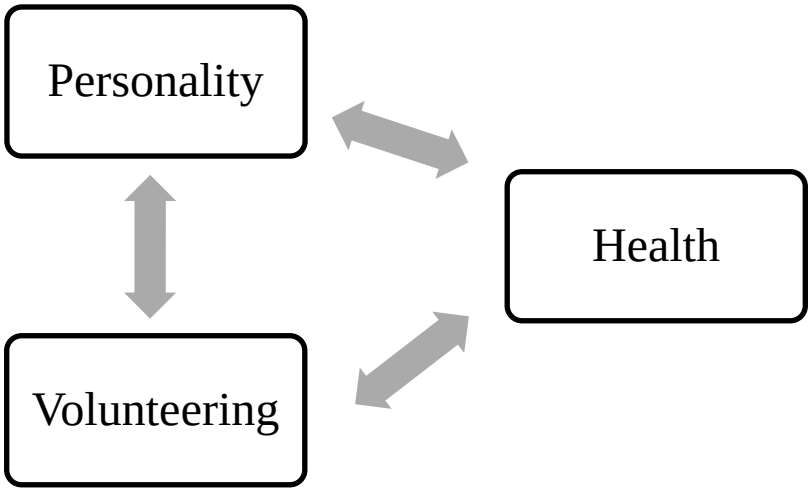


Figure 1. Model showing the hierarchical linear regressions conducted to test whether personality and volunteering are individual predictors of both physical functioning and mental health.

Table 1

*Volunteering characteristics by number of organizations*

| # of organizations | Participants, %(N) | Years, M(SD) | Hours per week, M (SD) |
|---|---|---|---|
| 1 organization | 51.96(331) | 9.90(10.64) | 4.62(6.23) |
| 2 organizations | 26.06(166) | 10.44(8.21) | 8.78(10.39) |
| 3 organizations | 21.98(140) | 10.67(6.86) | 10.43(12.07) |

Table 2

*Differences in volunteers and non-volunteers*

| | Volunteers (39%) | Not (61%) | Statistic |
|---|---|---|---|
| Gender, %(N) | | | |
| Male | 35.9(265) | 64.1(473) | $\chi^2$ (1, $N$ = 1626) = 7.73, |
| Female | 42.7(379) | 57.3(509) | $p$ = .005 |
| Race, %(N) | | | |
| White | 42.7(452) | 57.3(606) | $\chi^2$ (1, $N$ = 1584) = 10.59, |
| Black/Other | 34.2(180) | 65.8(346) | $p$ = .001 |
| Education, M(SD) | 15.76(2.64) | 14.39(2.98) | t(1595) = -9.44, p <.001 |
| Household Income, M(SD) | 4.34(2.26) | 3.61(2.10) | t(1551) = -6.50, p <.001 |
| Employment Status, %(N) | | | |
| Employed | 42.3(427) | 57.7(582) | $\chi^2$ (1, $N$ = 1600) = 6.12, |
| Not Employed | 36.0(213) | 64.0(378) | $p$ = .013 |
| Current Marital Status, %(N) | | | |
| Married | 44.3(344) | 55.7(433) | $\chi^2$ (1, $N$ = 1626) = 13.55, |
| Not Married | 35.3(300) | 64.7(549) | $p$ = .001 |
| Extraversion, M(SD) | 2.35(.37) | 2.19(.38) | t(1501) = -8.03, p <.001 |
| Agreeableness, M(SD) | 2.76(.31) | 2.66(.32) | t(1499) = -6.09, p <.001 |
| Conscientiousness, M(SD) | 2.62(.35) | 2.54(.36) | t(1503) = -3.96, p <.001 |
| Openness, M(SD) | 2.40(.39) | 2.30(.37) | t(1497) = -4.58, p <.001 |
| Neuroticism, M(SD) | 1.43(.43) | 1.55(.43) | t(1504) = 5.60, p <.001 |
| Physical Functioning, M(SD) | 51.26(8.62) | 48.48(10.82) | t(1580) = -5.41, p <.001 |
| Mental Health, M(SD) | 61.73(7.74) | 59.56(9.21) | t(1580) = -4.86, p <.001 |

Note: Number of participants varies by amount of complete data available

Table 3

*Hierarchical Linear Regression Predicting Physical Functioning from Volunteer Status (Step 1), Demographic Characteristics (Step 2), and Personality Traits (Step 3)*

| Predicting Physical Functioning | $R^2$ | Stand. b | Δ R2 | Sig. Change |
|---|---|---|---|---|
| Step 1: Volunteer Status | .02 | **.13** | .02 | .001 |
| Step 2: Demographics | .11 | | .09 | .001 |
| Gender | | **-.06** | | |
| Education | | **.30** | | |
| *Volunteer Status* | | **.07** | | |
| Step 3: Personality | .15 | | .04 | .001 |
| Extraversion | | .03 | | |
| Openness | | .03 | | |
| Agreeableness | | .02 | | |
| Neuroticism | | **-.17** | | |
| Conscientiousness | | -.01 | | |
| *Volunteer Status* | | .04 | | |

Note. Bold = $p < .01$

Table 4

*Hierarchical Linear Regression Predicting Mental Health from Volunteer Status (Step 1), Demographic Characteristics (Step 2), and Personality Traits (Step 3)*

| Predicting Mental Health | $R^2$ | Stand. b | Δ R2 | Sig. Change |
|---|---|---|---|---|
| Step 1: Volunteer Status | .01 | **.11** | .01 | .001 |
| Step 2: Demographics | .03 | | .02 | .001 |
| Gender | | -.03 | | |
| Education | | **.14** | | |
| *Volunteer Status* | | **.08** | | |
| Step 3: Personality | .35 | | .32 | .001 |
| Extraversion | | **.10** | | |
| Openness | | -.04 | | |
| Agreeableness | | -.01 | | |
| Neuroticism | | **-.52** | | |
| Conscientiousness | | -.03 | | |
| *Volunteer Status* | | .01 | | |

Note. Bold = $p < .01$