Continuing Education

Take Pride in America's Health: Volunteering as a Gateway to Physical Activity

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ABSTRACT

The authors discuss the role that volunteer programs may play in increasing levels of physical activity. In some cases volunteer programs may simultaneously improve individual health, benefit the environment and increase the public's opportunities for physical activity. From a survey of 2,032 respondents, results suggest that volunteers are more likely to meet physical activity recommendations than non-volunteers. Moreover, those who volunteer on environmental issues are 2.6 times as likely to meet physical activity recommendations as those who do not volunteer for these issues. Policies that support volunteer opportunities involving environmental projects such as maintaining trails, planting trees and cleaning parks, may be important for individual fitness because of their potential for high levels of physical activity. Volunteer activities that produce personal health benefits fit well within the actions of a comprehensive health promotion effort and health educators are well positioned to partner with volunteer programs. Moreover, this promising practice serves as an opportunity for health educators to be effective consumers of health promotion research. Health educators are encouraged to seek partnership opportunities on future studies to clarify the role that volunteer programs requiring physical activity may play in promoting or maintaining health.

Regular physical activity decreases the risk of such chronic diseases as heart disease, cancer and diabetes, which are leading causes of disability and death in the United States, together claiming the lives of more than 1.7 million Americans per year.[1] Even so, in 2001 54.6% of the U.S. population did not meet the minimum level of physical activity recommended by the Centers for Disease Control and Prevention (CDC) and the American College of Sports Medicine (ACSM).[2]

One approach to solving the problem of inactivity involves volunteering and might be characterized as a "win/win/win" proposal: Volunteers who work on environmental projects (i) help protect the environment, (ii) engage in physical activity while socially integrating themselves, and (iii) may improve the physical activity habitat for others (e.g., by maintaining trails). Research has shown that "lifestyle" programs encouraging physical activity as part of daily living can be as or more effective than structured exercise programs in helping people meet recommended levels of physical activity.[3] As a means to increase physical activity levels, the Task Force on

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Community Preventive Services (Task Force), a group composed of non-federal scientists and public health professionals, strongly recommends public health interventions that increase access to trails and other recreational facilities.[4] Volunteer opportunities that increase access to and involve physical activity, such as maintaining trails, may provide an important opportunity to address the Task Force recommendation on access to physical activity. Furthermore, volunteer activities that produce personal health benefits fit well within the heath promotion actions as described by the Ottawa Charter for Health Promotion[5] and health educators are well positioned to partner with physical activity based volunteer programs.

In a review of the literature we found a dearth of research on the association between volunteer opportunities and physical activity. According to a recent report from the U.S. Bureau of Labor Statistics, between September 2002 and September 2003, 63.8 million Americans volunteered, spending a median of 52 hours per year volunteering. Volunteers aged 65 and over spent a median of 88 hours per year volunteering.[6] Of respondents who said they volunteered, about 40% reported volunteering more than 10 hours per month.[7] A study by the Canadian Fitness and Lifestyle Research Institute[8] found that those who were physically active during their volunteer work report significantly more hours per year volunteering than those who volunteered in areas that did not involve physical activity. From our review of the literature, we were unable to find a study that examined associations between volunteering and overall physical activity as an outcome. This paper adds to the limited body of literature on volunteering and physical activity by comparing volunteers to non-volunteers on whether they met the CDC/ACSM physical activity recommendations.

METHODS

Data were obtained from the Greenstyles survey, a volunteer survey conducted by DDB Needham for Porter-Novelli in the winter of 1998-99.[9] The Greenstyles survey examined adult (age ≥ 18) Americans' values, attitudes and behaviors relevant to media use, general health and lifestyle, social, political and personal attitudes and beliefs, environmental sustainability, environmental concerns, civic participation and volunteering, and green products use. Greenstyles was designed to identify target audiences and to plan communications to effectively reach these audiences. The Greenstyles sample was drawn from respondents to the Lifestyle consumer mail panel survey that was also conducted by DDB Needham in April 1998. The Lifestyle survey uses quota sampling to draw a panel of 5,000 respondents who are representative of all U.S. adults on key demographic variables (gender, race/ethnicity, age, income and education). 3,350 people completed the Lifestyle survey, yielding a response rate of 67%. The Greenstyles survey was mailed out to the 3,350 people who had completed the Lifestyles survey. Of these, 2,181 completed and returned the Greenstyles survey, yielding a response rate of 63%. 149 respondents did not answer the physical activity questions and were removed from analysis, resulting in a final sample size of 2,032. Because the panel surveys are designed to be representative of the U.S. population, and have demographic information on all participants, there were no non-responses to the demographic questions. The Greenstyles survey was weighted using post-stratification to reflect the composition of the 1998 U.S. population. The dependent variable, leisure-time physical activity, was a dichotomous variable categorized as meeting or not meeting the CDC/ACSM recommendation for physical activity. The CDC/ACSM recommendation is moderate physical activity at least 5 days/week at 30 minutes per day or vigorous physical activity at least 3 days/week at 20 minutes per day.[10] The dependent variable was based on responses to the following questions: During a usual week in the past month, how many days did you do each of the following? What is the average number of minutes you spent on these activities each day? A) Moderate activities, including things like fast walking, cycling for pleasure, dancing and yard work that cause some increase in breathing or heart rate; B) Vigorous activities, including things like running, aerobics, fast bicycling, competitive sports or heavy yard work that cause large increases in breathing and heart rate.

The first main exposure variable of interest was whether respondents reported volunteering in any of the following activities during the past year: 'Get out the vote,' local charities, local political campaigns, neighborhood improvement projects, church or temple activities, neighborhood watch or other crime prevention programs. The second exposure variable was whether respondents reported they currently volunteer in any of the following activities: youth issues, poverty issues, local political groups and issues, state or national political groups and issues, religious issues, health issues, environmental issues. Respondents were identified as volunteers if they answered yes to any of the volunteer activities listed above. To examine volunteer activities that may have more physical activity, two subanalyses were performed on people who volunteered on neighborhood improvement projects in the past year or environmental issues currently.

Proportions of respondents meeting and not meeting physical activity recommendations by demographic characteristics were calculated. Logistic regression was used to analyze the relationship between meeting physical activity recommendations and the main volunteering exposure variables. We calculated unadjusted odds ratios (ORs) and adjusted ORs, which controlled for variables significant in the unadjusted analysis (employment status, race/ethnicity, annual income). SAS software v 8.2 (SAS Institute, Cary, NC) was used for the analysis.

RESULTS

Thirty-nine percent of the respondents met physical activity recommendations, 48% reported currently doing volunteer work and 67% reported doing volunteer

Table 1. Demographic Characteristics for Sample and Unadjusted Odds Ratios for Meeting Physical Activity Recommendations[a]

			Physical Activity Level [c]		
			Meets PA Recommendations[d]	Less than Recommended	
	Total[b]	%	%	%	OR[e]
Total	2,032		38.7	61.3	
Physical activity level					
Meets recommendations	803	39.5	—	—	—
Less than recommended	1,229	60.5	—	—	—
Current volunteering					
Any	968	47.6	46.7	53.3	1.9 (1.6 - 2.3)
None	1,064	52.4	31.5	68.5	1.0
Volunteering in the past year					
Any	1,368	67.3	43.1	56.9	1.8 (1.5 - 2.1)
None	664	32.7	30.0	70.0	1.0
Sex					
Female	1,094	53.8	39.0	61.0	1.0 (0.9 - 1.2)
Male	938	46.2	38.3	61.7	1.0
Employment status					
Employed or self-employed	1,091	53.7	35.3	64.7	0.8 (0.7 - 1.0)
Retired	420	20.7	505	49.5	1.5 (1.1 - 2.0)
Other	521	25.6	40.3	59.7	1.0
Race/ethnicity					
White	1,631	80.3	39.0	61.0	1.0
Black	186	9.2	32.6	67.4	0.8 (0.6 – 1.0)
Hispanic	145	7.1	40.9	59.1	1.1 (0.8 – 1.5)
Other	70	3.4	43.5	5.5	1.2 (0.8 – 1.9)
Age group					
18-34	341	16.8	38.6	61.4	1.0
35-54	849	41.8	34.7	65.3	0.8 (0.7 - 1.0)
55-64	322	15.8	40.9	59.1	1.1 (0.8 - 1.5)
65+	520	25.6	47.4	52.6	1.4 (1.1 - 1.9)
Income $					
<20,000	491	24.2	41.3	58.7	1.0
20,000-39,999	569	28.0	39.9	60.1	0.9 (0.7 - 1.2)
40,000-59,999	421	20.7	37.0	63.0	0.9 (0.8 - 1.0)
60,000-74,999	241	11.9	32.8	67.2	0.7 (0.5 - 1.0)
75,000+	310	15.3	38.8	61.2	0.9 (0.7 - 1.2)

[a]Greenstyles 1998
[b]Unweighted Greenstyles population.
[c]Weighted to reflect the 1998 U.S. population.
[d]Leisure-time moderate physical activity at least 5 times/week at 30 minutes/time or leisure-time vigorous physical activity for at least 3 times/week at 20 minutes/time or both.
[e]Unadjusted odds ratios with 95% confidence intervals.

work in the past year (Table 1). Of those who currently volunteered, 47% met physical activity recommendations, versus 32% of those who did not currently volunteer. Of those who volunteered within the past year, 43% met physical activity recommendations versus 30% of those who did no volunteer work. In unadjusted analyses, those who currently volunteered (OR=1.9, 95% confidence interval [CI] 1.6-2.3) and those who volunteered in the past year (OR=1.8, 95% CI 1.5-2.1) had greater odds of meeting physical activity recommendations than those who did not currently volunteer or did not volunteer in the past year.

After adjusting for race/ethnicity and income, those who currently volunteered were 2.0 times as likely (95% CI 1.7-2.4) to

meet physical activity recommendations as non-volunteers (Table 2). After adjusting for employment status, race/ethnicity and income, those who volunteered in the past year were 1.8 times as likely (95% CI 1.5-2.2) to meet physical activity recommendations as non-volunteers. In addition, after adjustment for the same variables, those who were retired were 1.5 times as likely (95% CI 1.2-2.1) to meet physical activity recommendations as those who were not retired.

Versus those not volunteering on environmental projects (including respondents who do not volunteer and respondents who volunteer on other types of projects), those who currently volunteered on environmental projects (Table 3) were 2.6 times (95% CI 2.0-3.5) as likely to meet physical activity recommendations after adjusting for employment and income. Furthermore, those volunteering for neighborhood improvement volunteer work in the past year were 1.6 times (95% CI 1.3-2.0) as likely to meet physical activity recommendations versus those not volunteering on neighborhood improvement projects.

Table 2. Adjusted Odds Ratios for Meeting Physical Activity Recommendations, Current and Past Year Volunteer Work

Variable	OR[a] for Meeting PA Recommendations, Current Volunteer Work	OR[b] for Meeting PA Recommendations, Past-Year Volunteer Work
Current volunteering		
Any	2.0 (1.7 - 2.4)	1.8 (1.5 - 2.2)
None	1.0	1.0
Employment status		
Employed or self-employed	—	0.8 (0.7 - 1.0)
Retired	—	1.6 (1.2 - 2.1)
Other	—	1.0
Race/ethnicity		
White	1.0	1.0
Black	0.7 (0.5 – 1.0)	0.7 (0.6 – 1.0)
Hispanic	1.1 (0.8 – 1.5)	1.1 (0.8 – 1.5)
Other	1.3 (0.8 – 2.1)	1.5 (0.9 – 2.4)
Income $		
<20,000	1.0	1.0
20,000-39,999	0.9 (0.7 - 1.2)	1.0 (0.7 - 1.2)
40,000-59,999	0.9 (0.8 - 1.0)	0.9 (0.8 - 1.1)
60,000-74,999	0.6 (0.4 - 0.8)	0.7 (0.5 - 0.9)
75,000+	0.8 (0.6 - 1.1)	0.9 (0.7 - 1.3)

[a]Odds ratios are adjusted for race/ethnicity and income with 95% confidence intervals.
[b]Odds ratios adjusted for employment status, race/ethnicity and income with 95% confidence intervals.

DISCUSSION

The results suggest that volunteers are more likely to meet physical activity recommendations than non-volunteers. This finding held true for current volunteers as well as those who had volunteered within the past year. Of particular interest is the finding that those who volunteered on environmental projects were 2.6 times as likely to meet physical activity recommendations as those not volunteering on these projects (including those not volunteering). This finding supports the idea that specific volunteer opportunities may play an important role in maintaining or promoting physical activity. Volunteer opportunities that involve environmental projects, such as maintaining trails, planting trees, eradicating invasive plants and cleaning up parks may be important for individual fitness because of their potential role requiring high levels of physical activity. These findings suggest that volunteer programs may offer opportunities to promote an active, healthy lifestyle.

In comparison with non-volunteers, people who volunteer have been associated with increased life satisfaction and well-being,[11-14] better physical health in older age,[15] higher levels of functional ability,[16,17] decreased psychological distress and depression,[17-19] better physical health and lower mortality.[12,16,20-23] However, the causal pathways between volunteering and physical activity remain unclear. Volunteers may achieve physical activity recommendations through their volunteer work, but those who are healthy and physically active may be more inclined to volunteer. In addition, good health may be preserved by volunteering.[24] Similarly, volunteers may need to reach or maintain minimum levels of physical activity,[24] thus positively influencing adherence to physical activity. Longitudinal studies might seek to identify causal pathways and thus create a focus for future intervention studies of physical activity and volunteering.

The Greenstyles survey has several limitations. As previously discussed, the role of volunteering in creating opportunities for physical activity is unclear. These data are cross-sectional, and respondents may have self-selected into a volunteer program because they were already active (i.e., their existing activity level may have made them more likely to volunteer). Second, the survey respondents were a subset of respondents to a panel survey and thus may be different from the general U.S. population. Third, the questions pertaining to volunteer activities were not specifically designed to study volunteer activities as they relate to physical activity and health outcomes. Further, physical activity status was determined from self-report. Sallis and Saelens[25] point out that self-reports are useful in

Table 3. Odds Ratios for Meeting Physical Activity Recommendations for Current Volunteers for Environmental Issues and Past Year Volunteers for Neighborhood Improvement Projects

Classification	Weighted % Meets Physical Activity Recommendations	Weighted % Less Than Recommended Physical Activity	Odds Ratios[a]
Environmental issues			
Currently volunteers	59.5	40.5	2.6 (2.0 - 3.5)
Does not currently volunteer for these issues	36.0	64.0	
Neighborhood improvement			
Volunteered in the past year	47.8	52.2	1.6 (1.3 - 2.0)
Did not volunteer in the past year for neighborhood improvement	36.3	63.7	

[a]Odds ratios adjusted for employment and income with 95% confidence interval shown.

studies of association of activity with health outcomes, and self-reports can classify groups of people into activity levels (i.e., meeting or not meeting recommendations). However, when absolute amounts of physical activity are needed, such as in studies that are determining a dose-response relationship, objective measures of activity are appropriate.

Finally, the Greenstyles survey response rate was 63%. Although this response rate is considered acceptable for publication,[26] consideration of external validity issues are warranted. For instance, volunteers may be more likely to complete mail surveys than non-volunteers. To address external validity issues, in part, the analysis was weighted to reflect the composition of the U.S. population on age, race, gender, income, and education. Future studies might address these limitations by 1) clarifying whether volunteer programs are effective in pro-moting physical activity and the role that such programs may play related to physical activity adherence and 2) improving the general breadth of the survey by conducting stratified random sampling of specific groups of interest (i.e., volunteers and non-volunteers).

CONCLUSION

This study suggests the potential for a win/win/win situation arising from environmentally based volunteer programs, as conceivably they could simultaneously improve individual health, increase access to physical activity for the community, and improve the environment. Purpose of activity such as branch cutting for ecological restoration has been described as a way to increase physical activity adherence rates.[27] Findings from this preliminary research show the potential to have a significant impact on health education practitioners in the form of a comprehensive health promotion effort addressing actions such as building personal skills, strengthening community actions, creating and supporting healthy environments, and building healthy public policy. Volunteer programs that have the potential to produce personal health benefits fit well within these actions and health educators are well positioned to partner with volunteer programs to promote the health aspects of volunteering. Moreover, as noted by Golver,[28] to be effective practitioners, health educators must also be effective consumers of health promotion research. Because these findings serve as the base for a promising practice, health educators should seek partnership opportunities on future studies to clarify the role that volunteer programs requiring physical activity may play in promoting or maintaining health. While a significant body of literature exists related to motives and demographics for volunteering,[29,30] there has been minimal research examining the health benefits of volunteering for the individual[24] and even less research into the causal pathways between volunteer activities and health outcomes. Although we report a relationship between volunteering and physical activity, health educators should partner with volunteer programs to initiate studies to clarify the role that volunteer programs requiring physical activity may play in promoting or maintaining the psychological, physiological and social pathways that have been found for volunteering.[31]

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