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Health and Economic Outcomes in the Alumni of the Wounded Warrior Project

2010–2012

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This research was conducted within the Forces and Resources Policy Center of the RAND National Security Research Division (NSRD). NSRD conducts research and analysis on defense and national security topics for the U.S. and allied defense, foreign policy, homeland security, and intelligence communities and foundations and other nongovernmental organizations that support defense and national security analysis.
Since 2003, the not-for-profit Wounded Warrior Project (WWP) has sought to offer support for and raise public awareness of those injured during service on or after September 11, 2001. To this end, WWP gives members, or alumni, access to programs that nurture mind and body, as well as facilitate economic well-being.

Central to WWP’s success are its assessment efforts. In 2009, RAND researchers helped WWP design a web-based survey that would help the organization evaluate how well it is meeting its three primary strategic goals:

- Ensure that wounded warriors are well-adjusted in mind and spirit.
- Ensure that wounded warriors are well-adjusted in body.
- Ensure that wounded warriors are economically empowered.

The survey, designed by RAND researchers, was administered in 2010, 2011, and 2012 by the statistical research firm Westat. The firm also prepared initial interpretive reports for WWP. WWP asked RAND to utilize the survey results to provide more-detailed analysis. Specifically, WWP was interested in the way individuals from different subgroups, as defined by demographic and service characteristics, were meeting the strategic goals. WWP also wished to gain a wider view of its organizational performance by understanding how alumni outcomes compared with the outcomes of other veteran and nonveteran U.S. populations.

Who Are the Wounded Warrior Project Alumni Represented in the Survey Data?

The three web-based surveys were offered to all alumni in the WWP database. Westat fielded the 2010 survey between February 5 and March 22, 2010; the 2011 survey took place between March 29 and May 17, 2011; and the 2012 survey was fielded between February 28 and April 11, 2012. The alumnus database contained 3,464 members at the time of the 2010 survey. Of those, 1,121 completed the survey (a 32.4-percent response rate). In 2011, the database had expanded to include 5,870 alumni, of whom 5,867 were eligible to participate in the survey. Westat collected 2,312 responses for that year (a 39.4-percent response rate). At the time the 2012 survey was administered, the database had grown to 13,382 members, 5,692 of whom completed the survey (a 42.5-percent response rate).

Because not all alumni responded to the survey, it is unclear whether the respondents are ultimately representative of all WWP alumni. The data reveal some changes over time, but
outcomes are generally similar from year to year and offer information particular to those who participated in the survey, including the following:

- Relationship status: According to the 2010, 2011, and 2012 survey data, 60 to 65 percent of the respondents were married, 15 to 20 percent were never married, and roughly 14 percent were divorced. The few remaining were widowed, separated, or unknown.
- Gender: The vast majority (approximately 90 percent) of all respondents were male.
- Education: The data suggest that approximately 15 percent of the respondents had high school diplomas, slightly more than 40 percent had some college experience, and 20 percent had bachelor’s degrees or advanced degrees.
- Employment status: The data suggest that 40 percent of all WWP alumnus respondents were employed full time and that half were either unemployed or not in the labor force. Further calculations suggest that there was an unemployment rate of 21.6 percent among the 2011 respondents and 22.4 percent among 2012 respondents.
- Health insurance coverage: A small percentage of WWP alumni lacked health insurance coverage, whereas 50 percent or more had insurance through the U.S. Department of Veterans Affairs (VA) or some other government program, such as TRICARE. In addition, 15 to 20 percent of all respondents had private insurance, and another 15 to 20 percent were covered by Medicare.
- Military experience: The majority of respondents were veterans at the time they were surveyed. Two-thirds of all respondents are or were in the Army, and another 20 percent served in the Marine Corps. Approximately 90 percent of all respondents were enlisted, and only roughly 10 percent were commissioned officers. Nearly all respondents deployed at least once, with a relatively even split between those who deployed once, twice, and three or more times.
- Injury: Approximately 30 percent of all WWP respondents reported a VA disability rating of 10–70 percent, whereas 40 to 50 percent reported the highest ratings, of 80–100 percent disability.

How Are Wounded Warrior Project Goals Faring in Alumnus Subgroups?

In this summary, as in the full report, we present initial WWP goals and findings related to the 2010, 2011, and 2012 survey populations. We then present statistical analyses that explore how different groups in the population are faring in terms of meeting WWP’s goals.

Strategic Objective 1: Ensure That Wounded Warriors Are Well-Adjusted in Mind and Spirit

The Percentage of Wounded Warrior Project Alumni Who Are Accessing Health Care Is Slightly Below the Project’s Goal

Goal: Increase the percentage of alumni who visit a health care professional to get help with such issues as stress, emotional, alcohol, drug, or family problems (increase access to care).

WWP’s goal of 58 percent was met in 2011 among survey respondents, but only 57.4 percent of 2012 respondents indicated that they visited health care professionals, which is short
of the program goal of 59 percent. The results suggest that female respondents are more likely than male respondents to visit health care professionals, and older respondents are more likely to do so than those who are 26 to 30 years old. Alumnus respondents with higher disability ratings are more likely to seek care than those with disability ratings of 10 to 20 percent. Individuals suffering from burns or amputation are less likely than those without these injuries to seek care, but respondents who have experienced posttraumatic stress disorder (PTSD) or other mental health care issues are more likely to visit health care professionals.

The survey revealed that approximately 40 percent of respondents had difficulty getting mental health care. Reasons for this difficulty vary. Institutional barriers, cultural beliefs, and treatment preferences were the most frequently cited reasons.

**Alumnus Respondents Are Seeking Operation Enduring Freedom and Operation Iraqi Freedom Veterans as a Resource**

**Goal:** Increase the percentage of alumni who report talking with veterans of Operation Enduring Freedom (OEF) or Operation Iraqi Freedom (OIF) as a resource and tool to help cope with feelings of stress or emotional or mental health concerns.

WWP has a stated goal of 54.5 percent of alumni connecting with OEF and OIF veterans as a resource. This was achieved in both 2010 and 2011 among those who participated in the survey: Respondents to the 2010 survey connected at a rate of 58.1 percent, and respondents to the 2011 survey connected at 55.4 percent. In 2012, WWP’s goal was 56.5 percent, and responses indicate that the goal is being met, with 58.9 percent reporting that they connected with OEF/OIF veterans.

When responses for all survey years were pooled, the analysis shows that female respondents were less likely than male respondents to connect with other veterans and that Army respondents are less likely than those who served in the Marine Corps. In the pooled analysis, noncommissioned officers (NCOs) and commissioned officers were more likely to seek other OEF/OIF veterans as a resource than were junior enlisted. Respondents who experienced PTSD or traumatic brain injury (TBI) were more likely than those without these injuries to use other veterans as a resource, but alumni with other injury types were not consistently more or less likely to connect with other veterans.

The data from the survey also suggested that wounded warriors who report not talking to other OEF or OIF veterans make use of other resources. The most commonly sought resource is the VA Medical Center.

**Emotional Problems Still Force Many Respondents to Miss Work and Other Activities**

**Goal:** Decrease the extent to which emotional problems interfere with alumni’s work or regular activities as measured by respondents’ self-reporting of such interference in the previous four weeks.

WWP’s goal of 56.0 percent in 2011 was almost met in both 2010 (58.2 percent) and 2011 (59.3 percent) among those who completed the surveys. WWP’s goal of 54 percent in 2012 was missed by a larger amount, with 59.9 percent of respondents indicating that emotional problems caused them to miss work or other activities.

For this strategic objective, the analysis made use of a measure of the extent to which emotional well-being has a negative impact on daily activities. The results suggest that male respondents are less likely than female respondents to report a negative impact of emotional well-being on work or other activities, and those who are currently married are less likely than
their previously married counterparts to report such an impact. Older respondents are more likely to report that their daily activities are negatively affected by their emotional well-being. The higher the respondent's disability rating, the more likely he or she is to be negatively affected by his or her emotional health. Interestingly, although some injuries, such as PTSD, spinal cord, TBI, and other mental injuries, are related to more interference with daily activities, other injuries, such as amputation and burns, are less likely to be associated with emotional health having a negative impact on the respondent’s well-being.

**The Program Goal of Fewer Upsetting Memories Among Alumni Is Not Being Met**

**Goal:** Decrease the percentage of alumni whose military experiences were so frightening, horrible, or upsetting that, in the past month, they have not been able to escape from memories or effects of them, as measured by self-report.

The percentages of individual respondents thinking about events when they did not want to were higher than WWP’s 76.0-percent goal. In 2010, 76.6 percent of WWP alumnus respondents reported doing so, growing to 77.8 percent in 2011 and 76.1 percent in 2012, when WWP’s goal was 75.5 percent.

For the analysis of this strategic objective, we again relied on a metric in the literature, a positive screen for PTSD called the Primary Care PTSD Screen (PC-PTSD). When responses to all three surveys were pooled into one analysis, they show that the percentage of respondents who screened positively for probable PTSD was higher in both 2011 and 2012 than it was in 2010; similarly, in these analyses, individuals with higher disability ratings were more likely to screen positive than those with the lowest range of disability ratings. Respondents who were 36 to 45 years old were more likely than 26- to 30-year-olds to screen positive for probable PTSD. Respondents who reported experiencing PTSD, TBI, and other mental health conditions were more likely than those without these injuries to screen positive for probable PTSD. Results did not differ significantly by gender.

**The Rate at Which Alumni Report Being Able to Adapt Is Just Short of the Wounded Warrior Project's Goal**

**Goal:** Increase the percentage of alumni who can adapt when change occurs or can bounce back after illness, injury, or hardship (resilience), as measured by self-report.

WWP’s reporting of this outcome measures only the percentage of respondents who reported adapting often or nearly all of the time when changes occur. Survey results suggest that the rate at which alumni are able to adapt falls just below WWP’s goal of 57 percent: The results were 55.9 percent and 53.8 percent for 2010 and 2011, respectively. Similarly, WWP’s goal increased to 58 percent in 2012, but only 55.3 percent of respondents reported being able to adapt to change.

Because WWP is interested in the ability to both adapt to change and bounce back from illness, injury, or hardship, the analysis relied on a metric in the data, the two-item Connor-Davidson Resilience Scale (CD-RISC 2), a measure specifically designed to quantify an individual's resiliency. An analysis of the CD-RISC 2 indicates that women are less resilient than men, middle-aged respondents are less resilient than those ages 26 to 30, and alumni with higher disability ratings are less resilient than those with lower ratings. The ability to adapt and bounce back is positively correlated with rank. Respondents with burns or amputation are more resilient than those who do not report having these injuries; those with PTSD, spinal-
cord injuries, TBI, or other mental health conditions are reportedly less resilient than respondents without.

**Strategic Objective 2: Ensure That Wounded Warriors Are Well-Adjusted in Body**

**2012 Respondents Are Closer to Achieving the Goal of Fewer Interruptions to Work and Other Activities Because of Physical Health Problems**

*Goal:* Decrease the percentage of alumni whose physical health problems have interfered with work or regular activities in the past four weeks, as measured by self-report.

WWP’s target for this goal was to have only 64.0 percent of alumni suggest that they were facing disruptions due to health challenges. Survey results indicate that the program did not meet this goal in either 2010 (65.8 percent) or 2011 (64.5 percent). In 2012, WWP’s goal had fallen to 62.0 percent, and 62.5 percent of respondents reported that their physical health was interfering with work and other activities.

A common metric found in the literature was used to analyze the percentage of survey respondents whose physical problems created problems with work and other activities. The data suggest that female respondents are more likely than male respondents to report that physical health has a negative impact on work or other activities. Never-married respondents report health having less of a negative impact on activities than married respondents do, and 26- to 30-year-olds report less negative impact than older respondents do. VA rating and injuries were also important predictors of the effect of physical health on work and other daily activities: The higher the VA rating, the worse the impact of physical health on work and activities; moreover, those with PTSD, spinal-cord injuries, TBI, or other physical and mental conditions reported that physical injuries had a greater impact on daily activities than those without these injuries.

**Obesity Among Alumnus Respondents Is Proportionate to That of the U.S. Population**

*Goal:* Decrease the percentage of alumni who are overweight or obese as measured by self-reported body mass index (BMI).

Each WWP respondent reported his or her height and weight in the surveys. This information was used to calculate the BMI of each member. An individual with a BMI in the range of 25 to 30 is considered overweight, and one with a BMI in excess of 30 is considered obese.

Survey results show that, in both years, approximately 40 percent of all respondents were obese; the 2011 percentage of 40.5 and the 2011 percentage of 41.6 were both higher than WWP’s goal of 39.0 percent. WWP’s goal in 2012 was 38.0 percent or less of respondents being obese; in actuality, that percentage was 41.5. For context, it should be noted that 35.7 percent of all U.S. adults age 20 and over are considered obese by the BMI measure (Ogden et al., 2012).

For this analysis, we examined only the percentage of respondents who had BMIs in excess of 30 percent (obese) and excluded those whose BMIs fall in the overweight range. Results show that female alumni are less likely to be obese, while individuals who are married are consistently more likely to be obese than are previously or never-married respondents. Across rank groups, junior enlisted are generally more likely than NCOs and commissioned officers to be obese. Alumni in the Marine Corps and Air Force are less likely to be obese than alumni in the Army. Age is positively correlated with obesity: Respondents age 31 and older...
are more likely than 26- to 30-year-olds to be obese. Respondents who reported having PTSD are also more likely to be obese.

**Strategic Objective 3: Ensure That Wounded Warriors Are Economically Empowered**

**The Wounded Warrior Project Goal for Increasing Attainment of Higher Education Was Met Among Survey Respondents**

**Goal:** Increase the percentage of alumni completing associate’s degrees, bachelor’s degrees, or higher.

Survey respondents were asked to report the highest degree or level of school they had completed. WWP’s goal of 34.0 percent of alumni completing a degree was met among 2011 survey respondents at 36.0 percent, up from 32.7 percent among 2010 respondents. WWP’s goal increased to 36.0 percent in 2012, and 37 percent of respondents for that year reported having associate’s degrees, bachelor’s degrees, or higher.

Female respondents are more likely to earn associate’s, bachelor’s, or higher degrees than male respondents are. The 2010 and 2011 surveys reported higher rates of completion of associate’s degrees, bachelor’s degrees, or higher than the 2010 survey. Differences in education level across marital-status groups point to higher education among those married than those previously married. Commissioned-officer respondents are more likely than junior enlisted to have earned associate’s degrees or higher, and this result is consistent with entrance requirements. Respondents who suffer from PTSD and TBI are less likely to have completed associate’s degrees, bachelor’s degrees, or higher.

**The Wounded Warrior Project Goal for Increasing Alumnus Attainment of Business, Technical, and Vocational Training Was Met Among Survey Respondents**

**Goal:** Increase the percentage of alumni completing business, technical, or vocational school.

WWP’s goal of 3.7 percent of alumni achieving a certificate or diploma from a business, technical, or vocational school was not met according to the surveys in 2010, at a rate of 3.4 percent, but it was met in 2011, with 4.3 percent. WWP had an increased goal of 3.9 percent in 2012, which was met, with 4.3 percent of respondents reporting having business, technical, or vocational degrees. Older respondents are more likely to have completed this kind of degree than 26- to 30-year-olds are. Additionally, alumni in the Navy or Coast Guard are more likely than Army respondents to hold business, technical, or vocational degrees.

**Respondent Rates of Employment Are Reaching Wounded Warrior Project Goals**

**Goal:** Increase the percentage of alumni employed full time or part time or self-employed.

Survey results suggest that approximately 40 to 42 percent of respondents were employed full time and that 5 to 7 percent, each, are employed part time or are self-employed (with the remainder unemployed or not in the labor force). In almost all cases and years, WWP’s employment goals were met.

We combined the full-time, part-time, and self-employment responses into one employment outcome, which had a value of 1 if the respondent was working and 0 otherwise. Respondents were more likely to indicate that they were working part or full time or were self-employed in 2011 and 2012 than in 2010. Those who are currently married are more likely to be working
than those respondents who were previously or never married. The youngest and oldest respondents are less likely to be employed than are 26- to 30-year-olds. Rank is positively correlated with the probability of working; NCOs and commissioned officers are more likely than junior enlisted respondents to be employed. Finally, individuals with higher disability ratings are less likely to be working, and respondents with mental health conditions or spinal-cord injuries are consistently less likely to be employed than those without these injuries.

**The Wounded Warrior Project’s Home-Ownership Goal Was Met in 2010 and 2011 but Not in 2012**

**Goal:** Increase the percentage of alumni owning homes (with or without mortgages).

In the 2011 survey, the 56.0-percent rate of home ownership among survey respondents met WWP’s goal of 55 percent. However, in 2012, WWP had a goal of 57.0-percent home ownership among alumni, and only 51.5 percent of survey respondents indicated that they own homes. Results of the analysis indicate that respondents in the Navy or Coast Guard are less likely to own homes than Army respondents are. Moreover, married and higher-ranking respondents are also more likely to be homeowners. Home ownership is also strongly related to age: The older the respondent, the higher the probability that he or she owns a house.

**The Percentage of Alumni with Debt Exceeding $20,000 Is Higher Than Program Goals**

**Goal:** Reduce the total amount of outstanding debt, excluding mortgage, that is greater than $20,000.

WWP’s goal of 41 percent of alumni carrying more than $20,000 in debt was not met in either 2010 or 2011, with rates of 42.9 percent and 43.0 percent, respectively. The goal decreased to 39.0 percent in 2012, and 43.2 percent of respondents indicated debt in excess of $20,000, again not meeting WWP’s goal.

Results of the statistical analysis show that respondents who were previously or never married are less likely than those who are currently married to have debt in excess of $20,000. Younger respondents are less likely, and middle-aged respondents more likely than those age 26 to 30, to have accumulated debt; NCOs and officers are more likely than junior enlisted respondents in the analysis that includes all responses from all three years.

**Recommendations**

Overall, many of WWP’s goals were met in 2010 and 2011 among individuals who completed the surveys, but new goals were more frequently not met in 2012. There are some ways in which WWP can improve its outcomes, and we offer those here:

- WWP should use different scales to generate a better measure of alumnus challenges. Results in the report suggest that WWP alumni have experienced higher rates of screening positive for PTSD and depression than those in other studies (involving different populations, usually veterans more generally). These higher rates may be due in part to the fact that WWP alumni, by definition, have experienced service-connected disabilities.
- We recommend that WWP consider adding to its strategic objectives the eight-item Patient Health Questionnaire (PHQ-8) depression scale. Further, some of the questions in WWP’s survey were derived from other instruments for the purposes of comparison
with other populations and studies (e.g., deployment combat exposure, alcohol use, smoking prevalence, sleep adequacy). Future revisions to the strategic objectives may include goals for the results of those questions.

- Create programs that can benefit specific alumnus population subgroups.

These patterns suggest that different subgroups of wounded warriors may be in need of more or different kinds of support from WWP. The organization’s decisionmakers can use the information from this report to determine the degree to which strategic objectives are met for each subgroup and to set new goals and the means by which the organization—and its alumni—may reach those goals.