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Compensating Wounded Warriors

An Analysis of Injury, Labor Market Earnings, and Disability Compensation Among Veterans of the Iraq and Afghanistan Wars

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Nearly a decade of operational combat in Iraq and Afghanistan has focused attention on meeting the needs of military service members, especially those injured in combat, following deployment. Two recent commissions—the President’s Commission on Care for America’s Returning Wounded Warriors (2007) and the Veterans’ Disability Benefits Commission (2007)—have recommended fundamental changes in how DoD and the VA evaluate, treat, compensate, and otherwise support injured service members and their families. To address this continuing issue, the President directed the Secretary of Defense to examine compensation benefits available to wounded warriors, caregivers, and survivors of those fallen service members as part of the 11th QRMC. In response to a request from the 11th QRMC, RAND performed the first comprehensive, quantitative assessment of how injury sustained while deployed in support of OEF/OIF affects subsequent labor market outcomes and the extent to which retirement and disability payments received from DoD, the VA, and SSA compensate for earnings losses attributable to injury. The findings of that assessment are presented in this monograph.

**Study Design**

The study employs data on injury, labor market earnings, and disability compensation for a large sample of Active Component (AC) and RC members deployed to Iraq and Afghanistan between September 11, 2001, and December 2006. These longitudinal, largely administrative data were obtained from DoD, the VA, and SSA and were linked by Social Security numbers. The resulting database tracks labor market earnings and disability compensation, reported in 2010 dollars, between 1998 and 2010 for nearly 700,000 service members and their spouses.

Each service member in the sample is categorized according to available self-reported and administrative data on the incidence and severity of injury sustained while deployed, as follows:
• Uninjured.
• Health worsened: The service member reported on the Post-Deployment Health Assessment (PDHA) that his or her health worsened during deployment, but the member was not referred for follow-up care.
• Referred: The service member reported on the PDHA that his or her health worsened during deployment, and the PDHA indicates that the member was referred for follow-up care.
• Non-serious casualty: The service member sustained a non–life-altering combat injury, according to official casualty data.
• Serious casualty: The service member sustained a life-altering combat injury, according to official casualty data.
• Very serious casualty: The service member sustained a life-threatening combat injury, according to official casualty data.

Approximately 18 percent of the service members in the sample reported that their health worsened during deployment; 2.7 percent sustained a non-serious combat injury; 0.2 percent sustained a serious combat injury; and 0.1 percent sustained a very serious combat injury.

We compared the labor market earnings of injured service members and their spouses in the years following deployment with the labor market earnings of uninjured service members and their spouses. Since the incidence of injury is likely to be correlated with characteristics of service members that could themselves be correlated with labor market outcomes (e.g., pay grade, military occupation, risk-taking behavior), we controlled for a rich array of individual-level characteristics, including labor market outcomes prior to deployment (i.e., we estimated such correlations in first differences). This approach eliminated the potentially confounding influence of fixed unobservable characteristics of individuals correlated with the incidence of injury and labor market outcomes, increasing the likelihood that our results can be interpreted as the causal effect of injury on earnings. However, these controls are imperfect, and the estimated correlation between injury and post-deployment labor market outcomes reported here could reflect, in part, time-varying unobserved characteristics of service members, which would undermine such a causal interpretation.

**Labor Market Earnings Effects**

Figure S.1 shows the estimated effect of injury on service member labor market earnings by year since the end of deployment and component. The figure demonstrates that (1) the estimated effect of less-serious injury (health worsened, referred, non-serious combat injury) on service member earnings is small, ranging from −$2,079 to −$6,080 four years following deployment (representing from 3 to 10 percent of service member earnings), whereas the estimated effect of serious and very serious combat
injury on service member earnings is quite large, ranging from $–11,943 to $–26,261 four years following deployment (between 19 and 41 percent of service member earnings); (2) the estimated negative effect of injury on earnings increases markedly over the first four years following injury; and (3) patterns of estimated earnings loss of AC and RC members are broadly similar. We can observe earnings effects as many as seven years following deployment for a part of our sample, and estimates including those service members suggest that earnings losses do not change significantly between years 4 and 7.

A significant driver of loss of labor market earnings among injured service members is a decline in earnings resulting from military separation. Figure S.2 shows that injured service members in all categories are substantially more likely to separate from the military in the years following the end of deployment and that this differential grows over time. By year 4, injured service members are estimated to be from 5 to 45 percentage points more likely to have separated from the military than uninjured service members. Thus, we believe that earnings losses increase over the first four years following deployment not because the injury itself worsens over time, but because injury eventually leads to separation from the military and such separation leads to lower labor market earnings. However, our estimates imply that serious and very
serious combat injury results in substantial losses in labor market earnings from civilian sources as well, especially among reservists.

The financial impact of injury may extend to the spouses of injured service members who must curtail their labor supply in order to provide care or, conversely, might increase their labor supply in an effort to offset earnings losses experienced by their injured spouses. Figure S.3 shows that serious and very serious combat injuries lower spousal labor market earnings, but the effect is quite small relative to the effect of injury on the service member’s own labor market earnings (and frequently is not statistically distinguishable from zero). Very serious combat injury lowers spousal earnings by between $2,144 and $2,755 four years following deployment (from 14 to 18 percent of earnings). Point estimates imply a positive effect of less-serious injury on spousal earnings, but these estimates are small and, for the most part, statistically indistinguishable from zero.

Estimated Income Replacement Rates

Injured service members can potentially receive disability compensation from a number of sources, including DoD disability retired pay, VA disability pay, Combat-Related
Special Compensation (CRSC), and Social Security Disability Insurance (SSDI). In addition, some injured service members are eligible to receive one-time payments from the Traumatic Servicemembers Group Life Insurance (TSGLI) program. Many of these disability payments are received tax free, which we account for in our estimates. Figure S.4 shows that, on average, these sources of compensation fully, if not more than fully, offset the estimated effect of injury on labor market earnings. The estimated effect of injury on total household income—by which we mean the sum of service member and spousal labor market earnings and disability compensation—in the fourth year following deployment is always positive among RC members (ranging from $167 to $27,780) and is positive for all but the less seriously injured AC members (from −$1,354 to $19,976). The decline in the positive effect of injury on household income between years 1 and 2 reflects the fact that one-time TSGLI payments, which range from $25,000 to $100,000, are typically made in the first year following deployment.

Table S.1 shows actual household earnings including disability payments as a percentage of expected household earnings (the replacement rate), by component, injury type, and years since deployment. Estimated replacement rates in the fourth year following deployment range from 98 to 154 percent among injured AC members and from 107 to 183 percent among injured RC members. The higher replacement rates
among injured reservists reflect their somewhat higher propensity to receive VA disability compensation and SSDI. Replacement rates are generally higher in years 1 and 2, reflecting the influence of lump-sum TSGLI payments made in those years.

Discussion

Among the many hardships of military deployment is the possibility of injury; 18 percent of deployed service members in our sample returned home feeling that their health worsened over the course of deployment, and another 3 percent were wounded in combat. This study found that combat injuries, about half of which, in our sample, resulted in a VA disability rating, decrease household labor market earnings by an average of 11 percent four years following deployment. Although estimated earnings losses are considerably lower among the less seriously injured (health worsened/referred), about 5 percent, the large numbers of service members with such injuries add significantly to the social cost of conducting the wars in Iraq and Afghanistan. Service members in our sample deployed to Iraq and Afghanistan between 2001 and 2006 and returning home with these less-serious injuries experienced aggregate labor market
Table 5.1
Estimated Replacement Rates, by Injury Type, Type of Disability Compensation, and Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Injury Type</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health Worsened</td>
<td>Referred</td>
<td>Non-Serious Casualty</td>
<td>Serious Casualty</td>
<td>Very Serious Casualty</td>
</tr>
<tr>
<td>Household earnings loss in year 4</td>
<td>2,693</td>
<td>4,651</td>
<td>5,787</td>
<td>11,943</td>
<td>22,555</td>
</tr>
<tr>
<td>(2010 dollars)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of of average earnings</td>
<td>4</td>
<td>7</td>
<td>9</td>
<td>19</td>
<td>36</td>
</tr>
<tr>
<td>Replacement rate (percentage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>101</td>
<td>100</td>
<td>114</td>
<td>165</td>
<td>280</td>
</tr>
<tr>
<td>Year 2</td>
<td>100</td>
<td>97</td>
<td>105</td>
<td>146</td>
<td>181</td>
</tr>
<tr>
<td>Year 3</td>
<td>99</td>
<td>98</td>
<td>105</td>
<td>124</td>
<td>159</td>
</tr>
<tr>
<td>Year 4</td>
<td>99</td>
<td>98</td>
<td>105</td>
<td>122</td>
<td>154</td>
</tr>
</tbody>
</table>

| Household earnings loss in year 4         | 2,079             | 3,614    | 6,080    | 14,755   | 26,261   |
| (2010 dollars)                           |                   |          |          |          |          |
| Percentage of of average earnings         | 3                 | 4        | 10       | 22       | 41       |
| Replacement rate (percentage)             |                   |          |          |          |          |
| Year 1                                   | 101               | 110      | 128      | 186      | 442      |
| Year 2                                   | 97                | 108      | 115      | 188      | 213      |
| Year 3                                   | 107               | 109      | 113      | 142      | 182      |
| Year 4                                   | 107               | 109      | 114      | 143      | 183      |

earnings losses of $1.6 billion through 2010. Official casualties, by comparison, experienced $556 million in aggregate earnings losses, according to our estimates.\(^1\) Disability compensation paid to injured service members (over and above that paid to uninjured service members) in our sample over this same period totaled $2.3 billion—107 percent of estimated lost household earnings.

We have not attempted to answer the difficult normative question of whether the replacement rates reported here, which are well above 100 percent for those with serious combat injuries, are appropriate. Disability compensation can be viewed as a form of insurance against the possibility of injury, and elementary economic models suggest

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\(^1\) We compute aggregate household earnings loss by multiplying model parameter estimates by number of observations in the corresponding injury, post-deployment year, and component cell and summing over components and post-deployment years. It is important to recognize that estimated aggregate earnings losses are almost certainly a lower limit on the actual aggregate earnings losses. Although our sample is large and comprehensive, it probably omits some fraction of the individuals who were injured while deployed to Iraq and Afghanistan; thus our aggregate analysis will omit their income losses from the totals.
that risk-averse individuals demand full insurance for potential losses, which would argue for a 100-percent replacement rate. But injured service members potentially lose more than just capacity in the labor market; they may incur considerable out-of-pocket costs in adapting to their injuries, and nonpecuniary losses such as pain and suffering or loss of consortium can be significant. Economic theory also suggests that replacement rates above 100 percent can be justified for occupations in which calculated risk-taking is desirable (e.g., policing, firefighting, military service). In addition, individuals typically enjoy real wage growth, particularly early in their careers, while disability payments are indexed for inflation but typically do not otherwise increase over time. Taking a life-cycle perspective, it may be logical to provide benefits above full replacement initially to account for the fact that those with permanent disability will not enjoy the earnings growth their uninjured peers can expect.