



**Social Cost Analysis of the Unemployment and Underemployment of  
Military Spouses**

May 25, 2016

Produced by



## Contents

Executive Summary.....	3
Introduction .....	3
Process & Key Findings .....	3
Population.....	4
Unemployment and Underemployment .....	5
General Unemployment and Labor Force Participation .....	5
Unemployment by Sub-Populations and Trends .....	8
Underemployment.....	9
Unemployment Benefits .....	11
Employment and Health .....	12
Mental Health .....	12
Physical Health .....	14
Substance Abuse .....	15
Societal Cost.....	15
Financial Model Methodology .....	15
Cost Summary .....	16
Low Scenario .....	16
High Scenario .....	17
Conclusion.....	18



*Funding for this study was provided through the generosity of our sponsor,  
the Bristol-Myers Squibb Foundation*

## Executive Summary

### Introduction

The U.S. military is a major asset to our national defense and the local communities in which they reside. Recently, active duty military members have become the focus of many studies and surveys aimed at identifying the effects of combat and the lifestyle necessitated by military service. The spouses and families of active duty military members have been much less in the spotlight but constitute an equally important population that has a direct effect on force readiness and member retention. For military spouses, difficulty finding and maintaining meaningful employment is a critical source of stress. The implications of this issue are felt far beyond the military spouse and their immediate family because it represents a large societal cost borne predominantly by the federal government.

Blue Star Families sought to better understand the extent of the problem by commissioning a study to quantify the societal cost of unemployment and underemployment among the population of military spouses. The findings of the social cost analysis estimate that adverse military spouse employment conditions cost society approximately \$710 million to \$1.07 billion per year.

The social cost analysis was produced for Blue Star Families by the Sorenson Impact Center, a division of the David Eccles School of Business at the University of Utah, in consultation and collaboration with Blue Star Families.

### Process & Key Findings

As a starting point for the social cost analysis, the Sorenson Impact Center synthesized research from a series of seminal studies on U.S. military families tracking employment trends among military spouses compared to their civilian peers. The findings, taking into consideration various studies on the topic, estimate that military spouse unemployment rates are 1.55 times higher than their civilian counterparts. For those military spouses who do have jobs, many are underemployed. Estimates of the extent of underemployment among military spouses vary widely, two of three analyses evaluated estimate underemployment rates in the range of 35-40 percent. This means that military spouses earn less than their peers with similar levels of education and experience. For instance, military spouses with a GED earn 31 percent less than their civilian peers and military spouses with a Bachelor's degree earn 40 percent less than their civilian counterparts.

Additionally, research shows that an estimated 42 percent of military spouses are not in the labor force compared to only 25.5 percent of an adjusted civilian spouse comparison group. This equates to an estimated 95,000 more military spouses who are not participating in the labor force than would have been expected based on the comparison average.

Taking all of this into consideration, the Sorenson Impact Center built a financial model to quantify the magnitude of each component of adverse employment including: lack of labor force participation, unemployment, underemployment. The financial analysis ultimately revealed that adverse military spouse employment conditions incur a social cost ranging from approximately \$710 million to \$1.07 billion per year. This estimated cost, which is primarily borne by the federal government, includes estimated costs of lost income tax, unemployment benefits paid and healthcare benefits paid.

## Defining the Population

The first step to analyzing the military spouse employment issue is to define the population and understand its characteristics. For the purposes of this analysis, a military spouse is defined as a female civilian spouse who is married to active-duty military personnel. The reasons to focus exclusively on female spouses in this analysis are the high proportion of females within the military spouse community and the relative lack of available data on male military spouses. Within the military spouse population, females represent approximately 89%<sup>1</sup> - 93%<sup>2</sup> of the entire military spouse population. As a result male spouses comprise a relatively small population that creates difficulties in conducting statistical analyses. Numerous studies reviewed for this analysis acknowledged a desire to study trends among the male spouse population but were unable to collect sufficient data to perform statistical analyses on the sample and thus had to remove the male population from their evaluations. Based on the same rationale, this analysis also removes male spouses from the evaluation and focuses solely on female civilian spouses.

Concentrating on the female spouse population, there are approximately 564,000 female civilian spouses of active duty military members nationwide as of 2015.<sup>3</sup> The population is also generally young with 85% of the population under the age of 40 and 70% is under the age of 35:

### Age Distribution of Active Duty Military Spouses

Age Group	% of Pop.
Less Than 26 Years Old	22%
26 to 30 Years Old	26%
31 to 35 Years Old	22%
36 to 40 Years Old	15%
More than 40 Years Old	15%

*Figure 1. Percentages are estimated based on a sample of 9,813 respondents. Source: 2015 Survey of Active Duty Spouses.*

The educational levels of military spouses differ from their civilian counterparts both in level of education and timing of degree attainment. The youngest group of military spouses (less than 25 years of age) lag their civilian peers in educational attainment with civilians attending college (no degree earned) at a rate more than double military spouses.<sup>4</sup> However, as they increase in age, military spouses quickly catch up to and exceed the civilian level of education. By the next age bracket (25-30 years old) the military spouse group exceeds the civilian rate of four-year degree attainment by 5% and more than doubles the civilian rate of graduate degree attainment. For spouses over 35 years of age, civilians catch back up in terms of four-year degree attainment but never match military spouses in terms of graduate degrees. A summary of education levels of both groups are displayed below.

### Educational Attainment of Active Duty Spouses vs. All Women in US

2015 Survey of Active Duty Spouses Level of Education	Age Ranges					
	< 21	21 - 25	26 - 30	31 - 35	36 - 40	41+

<sup>1</sup> "Survey of Active Duty Military Spouses" *Defense Manpower Data Center*. 2015.

<sup>2</sup> National Survey of Veterans, Active Duty Service Members, Demobilized National Guard and Reserve Members, Family Members, and Surviving Spouses" *Department of Veterans Affairs*. 2010.

<sup>3</sup> "Survey of Active Duty Military Spouses" *Defense Manpower Data Center*. 2015.

<sup>4</sup> "Survey of Active Duty Military Spouses" *Defense Manpower Data Center*. 2015.

No College	7%	32%	24%	16%	10%	12%
Some College / Vocational	3%	18%	26%	20%	13%	11%
Four Year Degree	0%	12%	31%	24%	16%	17%
Graduate / Professional Degree	0%	2%	20%	31%	22%	24%

2014 Current Population Survey (Women Only) Level of Education	Age Ranges				
	18 - 24	25 - 29	30 - 34	35 - 39	40+
No College	41%	31%	32%	32%	44%
Some College / Vocational	46%	32%	27%	29%	27%
Four Year Degree	12%	28%	25%	24%	28%
Graduate / Professional Degree	1%	9%	16%	15%	11%

Figure 2. Sources: 2015 Survey of Active Duty Spouses; 2014 US Census Bureau Current Population Survey.

## Unemployment and Underemployment

### General Unemployment and Labor Force Participation

Difficulty finding meaningful employment is a major concern among military spouses. More than half cite their spouse’s service as having a negative effect on their own employment opportunities.<sup>5</sup> There is growing evidence to support these claims and demonstrate that military spouses work and earn less than their civilian counterparts.<sup>6</sup>

Employment challenges for military spouses may begin before they even enter the labor market. Military spouses participate in the labor force at rates considerably lower than their civilian counterparts. A pair of studies by the RAND Corporation found that 42.4%<sup>7</sup> to 42.8%<sup>8</sup> of military spouses are not in the labor force compared to only 25.5%<sup>9</sup> of an adjusted civilian spouse comparison group. There are many potential reasons for the lower rate of labor force participation including frequency of moves, inability to find employment that matched skill and education levels, inability to find employment that is flexible enough to accommodate their military spouse’s schedule, child care issues, or stigmatization of the military lifestyle and the impact on employability.<sup>10</sup> Regardless of the causes, it is clear that some military spouses face enough difficulty finding employment that it is preventing some of them from even seeking employment.

<sup>5</sup> Harrell, Lim, Castaneda, Golinelli, Daniela. “Working Around the Military: Challenges to Military Spouse Employment and Education” *Rand Corporation*. 2004.

<sup>6</sup> Lim, Nelson and Schulker, David. “Measuring Underemployment Among Military Spouses”. *Rand Corporation*. 2010.

<sup>7</sup> Heaton, Paul and Krull, Heather. “Unemployment Among Post-9/11 Veterans and Military Spouses After the Economic Downturn.” *Rand Corporation*. 2012.

<sup>8</sup> Lim, Nelson and Schulker, David. “Measuring Underemployment Among Military Spouses”. *Rand Corporation*. 2010.

<sup>9</sup> Heaton, Paul and Krull, Heather. “Unemployment Among Post-9/11 Veterans and Military Spouses After the Economic Downturn.” *Rand Corporation*. 2012.

<sup>10</sup> “Military Spouse Employment Report” *Institute for Veterans and Military Families*. February 2014.

For spouses that do participate in the labor force, multiple studies have attempted to quantify the unemployment rate of military spouses relative to their civilian counterparts. The unemployment rates found vary significantly from paper to paper. According to the most recent data available, the latest survey of Active Duty Military Spouses (2015) finds that the current unemployment rate of military spouses is estimated at approximately 18%. This is compared to a seasonally adjusted current civilian unemployment rate (for women over 20) of 4.4%.<sup>11</sup> The “women over 20” figures are often used for comparison as it provides a rough approximation of the military spouse population in data easily assessable from the Bureau of Labor Statistics. For reference, the seasonally adjusted unemployment rate of the entire U.S. population is 5.0%.<sup>12</sup> Figure 4 provides a by-age comparison of unemployment rates for military spouses and civilian women.

**Unemployment Rates of Active Duty Spouses vs. All Women in US**

Age	2015 Active Duty Spouse Survey	December 2015 BLS Data (women only)	Variance
18	21%	14.7%	6.3%
19		8.5%	12.5%
20			
21			
22			
23			
24	16.0%	5.0%	15.0%
25			
26			
27			
28			
29	17%	5.0%	12.0%
30			
31			
32			
33			
34	15%	4.2%	21.2%
35			
36			
37			
38			
39	18%	4.2%	10.8%
40			
41			
42			
43			
44	13.8%	4.2%	13.8%
41			
42			
43			
44			

Figure 3. Source: 2015 Survey of Active Duty Spouses; December 2015 BLS Employment Report

<sup>11</sup> “The Employment Situation: December 2015” US Bureau of Labor Statistics. 2016.

<sup>12</sup> IBID

Another study, the Military Spouse Employment Report, used data from the American Community Survey (ACS), a nationally representative survey of approximately two million US households conducted by the Census Bureau, to estimate unemployment. Their analysis found that in 2012 the rate of unemployment for armed forces spouses aged 18-24 was 30.3%, nearly three times higher than the civilian rate of 10.5%.<sup>13</sup> For the age group of 25-44, the unemployment rates were 14.7% compared to 5.8%.<sup>14</sup>

On the lower end of the spectrum of unemployment rates are two studies by the RAND Corporation. One analysis based on 2010 data (also pulled from ACS data) found an unemployment rate of 12.04% for military spouses compared to 7.74% for a comparison group of civilian spouses adjusted for demographic characteristics.<sup>15</sup> In a slightly older analysis dating back to 2006, RAND found unemployment rates of approximately 7% for military spouses which were only slightly above the approximately 6% rate found for a look-alike civilian group.<sup>16</sup>

The results of the RAND analyses show much tighter dispersions relative to the civilian comparison groups than the findings of the other papers. A major driver of this difference is RAND's use of propensity score matching to compose a comparison group that closely resembles the military spouse population. For example, military spouses are generally younger, less experienced, and have more young children at home than civilian spouses so adjusting for differences in population characteristics explains away a portion of the difference in employment rates. The two RAND studies used propensity score matching while it appears the other papers used unadjusted comparisons. For example, the Active Duty Military Spouses report compares the military spouse unemployment rate against the broad "women over 20" rate which does not differentiate for any specific characteristics of the group aside from gender. The impact can be significant, for example, in RAND's 2006 analysis, the unadjusted civilian unemployment rate was found to be approximately 2% but when adjusted to be a "look-alike" population rate, the unemployment rate increased to approximately 6%, a much smaller gap to the military spouse rate of approximately 7%.

The findings of all the papers unequivocally identify higher unemployment rates for military spouses than civilian spouses. The magnitude of the disparity varied dramatically from a low of a .16x difference in the 2006 RAND study (7% for military spouses versus 6% for civilian spouses) to a high of 4.5x differential in the 2015 Active Duty Military Spouse survey (18% versus 4%). Each study evaluates unemployment over a different period of time and measures unemployment relative to a different comparison group so it is difficult to directly compare results. The best combination of the most recent data, a large sample size, and a rigorous evaluation of a comparison group is the Measuring Underemployment Among Military Spouses RAND paper that suggests military spouse unemployment rates that are 1.55x higher than their civilian counterparts (12.04% for military spouses compared to 7.74% for civilian spouses).

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<sup>13</sup> "Military Spouse Employment Report" *Institute for Veterans and Military Families*. February 2014.

<sup>14</sup> IBID

<sup>15</sup> Heaton, Paul and Krull, Heather. "Unemployment Among Post-9/11 Veterans and Military Spouses After the Economic Downturn." *Rand Corporation*. 2012.

<sup>16</sup> Lim, Nelson and Schulker, David. "Measuring Underemployment Among Military Spouses". *Rand Corporation*. 2010.

## Unemployment by Sub-Populations and Trends

Within the military spouse community are several distinct sub-populations. Looking more closely at the unemployment rates of these subpopulations reveals some interesting trends. Perhaps not surprisingly, unemployment rates are strongly associated with levels of education obtained. Increasing levels of education are generally associated with decreasing rates of unemployment. The chart below from the Military Spouse Unemployment Report displays two unemployment rate estimates by level of education within the military spouse population.

<b>Educational Attainment</b>	<b>Military Spouse Employment Survey Unemployment Rate (%)</b>	<b>ACS 2012 Unemployment Rate – Military Spouses (%)</b>
High School Diploma	40.43	21.23
Some college credit, but less than 1 year of college credit	33.33	22.37
1 or more years of college, no degree	36.36	16.69
Associate's Degree	46.53	16.25
Bachelor's Degree	29.07	13.07
Master's Degree	30.95	13.52
Professional Degree	28.57	3.16
Doctoral Degree	1.56	3.40
<b>Total</b>	<b>31.90</b>	<b>16.58</b>

Figure 5. Source: Military Spouse Employment Report.

A similar trend exists relating pay grades for the military service member and the corresponding spouse rate of unemployment. In general, a lower pay grade of the military member is correlated with a higher unemployment rate of their spouse. Figure 6 displays a Department of Defense (DOD) wide comparison of unemployment rates.

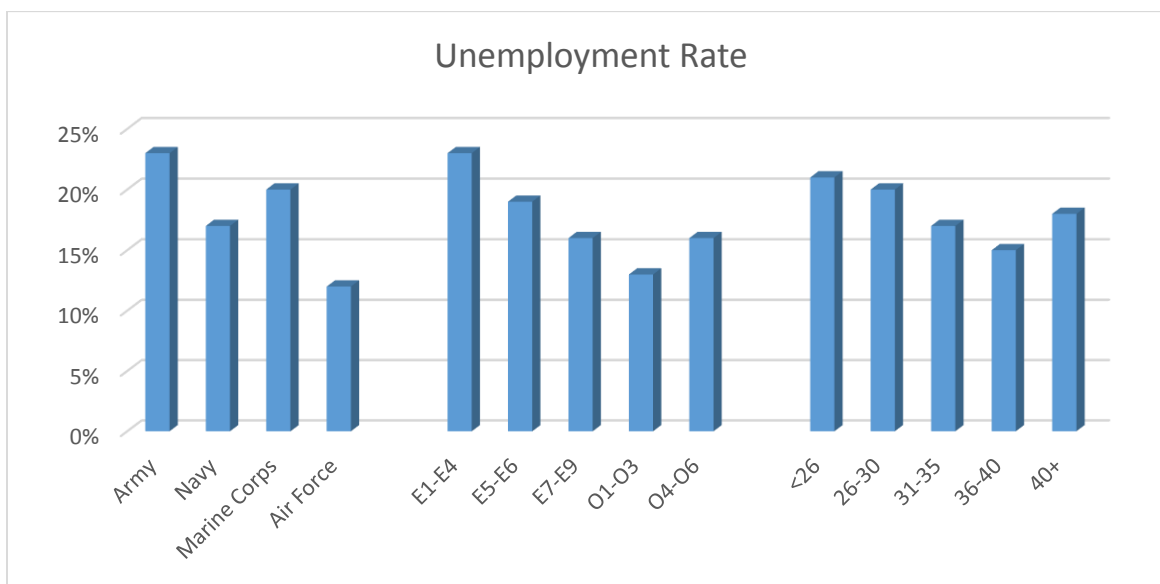


Figure 6. Source: 2015 Survey of Active Duty Spouses.



There are also notable differences between the branches of service regarding unemployment rates. The Army is the branch with the highest rate of spouse unemployment across the Department of Defense (DOD). Among Army spouses, the range of unemployment rates extend from 15% - 29%.<sup>17</sup> Conversely, the Air Force has the lowest rates with spousal unemployment ranging from 11% - 16%.<sup>18</sup>

The Military Spouse Employment Report also provides historical unemployment rates dating from 2000 to 2012. This historical perspective provides the ability to evaluate the relative trends over time. The graph below depicts the relative unemployment rates of two age brackets, 18-24 year olds and 25-44 year olds. In general, the relative difference between military spouses and civilian spouses is fairly steady over the time period. The lowest rate of disparity for both groups occurred in 2003 that was immediately followed by a spike in military unemployment in 2004. Since the 2004 spike, the relative rates have remained fairly constant, however, it appears the rates have begun to further diverge since 2008 among the 25-44 age bracket. Despite small variances year to year, the relative differences in unemployment rates have remained relatively constant over the period from 2000 to 2012 suggesting that differences in rates of employment are not a short-term anomaly but rather a sustained trend.

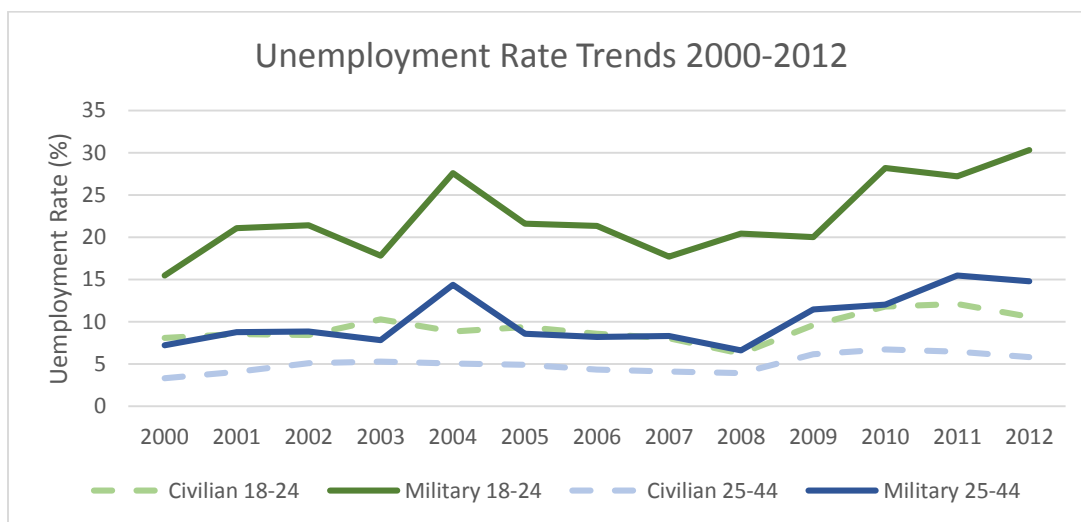


Figure 7. Source: Military Spouse Employment Report.

## Underemployment

In addition to unemployment concerns, underemployment is believed to be a serious challenge for military spouses due to a combination of issues associated with the military lifestyle.<sup>19</sup> There is less available literature evaluating the underemployment of military spouses compared to studies of unemployment. This could be due to difficulties defining and measuring rates of underemployment. Generally, underemployment is defined as a function of employment that is not commensurate with levels of experience or education, employment in a field different from the one in which they received

<sup>17</sup> "Survey of Active Duty Military Spouses" Defense Manpower Data Center. 2015.

<sup>18</sup> IBID

<sup>19</sup> "Military Spouse Employment Report" Institute for Veterans and Military Families. February 2014.

formal education, involuntary part-time work, or earning less than 20% of the average of the graduating cohort with the same major or occupation.<sup>20</sup>

The Measuring Underemployment Among Military Spouses paper has the most robust evaluation of underemployment rates in the available literature. The paper found 38% of military spouses were underemployed per their educational level compared to 6% of civilian spouses with another 9% who were involuntarily part-time, compared to a rate of 2% for civilians.<sup>21</sup> Interestingly, applying the same propensity matching criteria to form a look-alike comparison group as with the unemployment evaluation further exacerbated the disparity between the groups, although only slightly (rather than explaining away a portion of the difference as it did with unemployment rates).

The 2014 Military Spouse Employment Report also evaluates underemployment both with respect to education and years of experience and they find higher rates of underemployment with regard to both elements than the earlier papers. Specifically, the Military Spouse Employment Report found that underemployment with respect to education applied to over 53% of employed female spouses and underemployment with respect to experience applied to more than 80% of the same.<sup>22</sup> One important caveat to these findings is that the underemployment analysis in this section of the paper is based on self-selected survey response data and respondents may have a bias toward overemphasize their job qualifications.

The 2014 Military Spouse Employment Report also uses reported wage earning data to assess underemployment rates. The data for this analysis was sourced from the 2012 ACS database and not self-reported data. The table below represents total personal income by levels of education for military and civilian spouses. In all categories, military spouses earn at least 30% less than their civilian counterparts and as high as 47% less among those with Master’s degrees.<sup>23</sup>

<b>Educational Attainment</b>	<b>Military Spouses</b>	<b>Civilian Spouses</b>	<b>% Variance</b>
High School Graduate or GED	15,826	22,912	-31%
Some College, no Degree	19,549	30,366	-36%
Associate Degree	22,116	34,131	-35%
Bachelor's Degree	27,391	45,784	-40%
Master's Degree	30,257	57,551	-47%
Professional Degree	53,982	97,438	-45%

*Figure 8. Source: Military Spouse Employment Report*

In summary, the findings suggest underemployment, especially with regard to levels of education, is widespread among military spouses. Estimates of the extent of the underemployment vary widely, however, two of three analyses present findings of underemployment rates in the range of 35-40%. Another interesting finding is the effect of education on both rates of unemployment and

<sup>20</sup> Scurry, Tracy and Blenkinsopp, John. “Underemployment Among Recent Graduates: A Review of the Literature” *Personnel Review*. 2011.

<sup>21</sup> Lim, Nelson and Schulker, David. “Measuring Underemployment Among Military Spouses”. *Rand Corporation*. 2010.

<sup>22</sup> “Military Spouse Employment Report” *Institute for Veterans and Military Families*. February 2014.

<sup>23</sup> IBID.

underemployment. The research demonstrates that increasing levels of education are associated with a reduced chance of unemployment, however, increasing levels of education are also associated with a higher likelihood of underemployment.

## Unemployment Benefits

There are many costs associated with unemployment; the most direct originates from unemployment benefits paid by the federal government. As of 2015, 46 states allowed general unemployment benefits to extend to military spouses who had been forced to leave their previous employment because of the active duty member’s Permanent Change of Station (PCS).<sup>24</sup> The level of unemployment benefits vary by state and are based on a variety of metrics tied to the previous job’s wages and were also subject to minimum and maximum thresholds.<sup>25</sup> The mean compensation of the 46 states that offer post-PCS benefits is \$245 per week with a range that extends from a minimum average threshold of \$70 per week up to an average maximum amount of \$457 per week. Nearly all states that allow for benefits give unemployment benefits for up to 26 weeks.<sup>26</sup> Military personnel are highly concentrated in select states, with ten states comprising approximately two thirds of the military population. Computing a weighted average of the benefits among these ten states results in a mean of \$247 per week, a difference of only \$2 from the 46 state average. The table below summarizes the benefit ranges for the 10 states with the largest military populations.

<b>\$ per week</b>	<b>Lower Cap</b>	<b>Upper Cap</b>	<b>Avg. Compensation</b>	<b>% of Military Pop</b>
VA	\$60.00	\$378.00	\$219.00	14%
CA	\$40.00	\$450.00	\$245.00	12%
NC	\$15.00	\$350.00	\$182.50	8%
TX	\$64.00	\$465.00	\$264.50	7%
FL	\$32.00	\$275.00	\$153.50	6%
WA	\$151.00	\$637.00	\$394.00	5%
GA	\$44.00	\$330.00	\$187.00	5%
MA	\$41.00	\$872.50	\$456.75	4%
HI	\$5.00	\$551.00	\$278.00	4%
SC	\$42.00	\$326.00	\$184.00	2%
<b>Weighted Average</b>	<b>\$51.38</b>	<b>\$427.61</b>	<b>\$246.80</b>	

Figure 9. Source: US Department of Labor.

<sup>24</sup> “MilSpouses – Unemployment Benefits May Apply to YOU!” *National Military Family Association*. 2015. [link](#)

<sup>25</sup> “Chapter 3: Monetary Entitlement” *United States Department of Labor*. 2015. [link](#)

<sup>26</sup> “Maximum Potential Weeks of UI Benefits for New Claimants” *United States Department of Labor*. [link](#)

## Employment and Health

Unemployment and underemployment are standalone areas of concern. Additionally, there is a large body of research that also connects unemployment and underemployment with degraded mental and physical health. These associations are of particular interest to the military spouse community given the high rates of unemployment and underemployment in this population. Despite the relative large body of research in the field, limited information was found that specifically focused on linkages between unemployment/underemployment and health within the military spouse community. Therefore, much of the analysis below relies on studies of the general population that are extrapolated to the military spouse community.

## Mental Health

The connection between negative employment changes and the corresponding effect on health is strongest in regards to mental health. One recent example is a study by Greenberg et al. (2015)<sup>27</sup> that evaluated data from both 2005 and 2010 that found a strong positive links between unemployment and several mental health indicators. Specifically the 2005 data demonstrated that full-time employed persons had a depression prevalence rate of 5.4% while unemployed persons had a rate of 7.8%. This equates to an unemployed person being 1.48x more likely to suffer from depression than an employed person. In the 2010 data, the disparity in levels of mental health prevalence increased. Depression rates for full-time employed persons was 5.5%, essentially unchanged from 2005, while the rate of depression among unemployed persons increased to a rate of 8.5%. This equates to an unemployed person being 1.60x more likely to suffer from depression than an employed person.

The findings of Greenberg, et al. are corroborated by a broad research base that includes two large meta-analyses that show even higher rates of increased depression and other mental health indicators. In the first meta-analysis, Paul and Moser (2008)<sup>28</sup> found that unemployed persons were 2.52x (d=0.51) as likely to experience mental distress as employed persons. Further, they found that unemployed persons were 2.48x as likely to suffer from depression and 2.07x as likely to suffer from anxiety compared to employed persons. Specifically looking at unemployed females, Paul and Moser found that these numbers were slightly lower. Unemployed females were found to be 2.06x as likely to experience mental distress, 2.03x as likely to suffer from depression, and 1.69x as likely to suffer from anxiety as were the average unemployed person (gender non-specific).

The second meta-analysis authored by Mckee-Ryan, et al. (2005)<sup>29</sup> found an even higher rate of impaired mental health with unemployed persons being 2.81x as likely to experience poor mental health (which includes depression and anxiety disorders) and 2.39x as likely to have poorer life satisfaction as employed persons. Mckee-Ryan, et al. did not elaborate specifically on gender rates.

The above papers find a clear correlation between unemployment and mental health disorders but demonstrating causality, that unemployment is the cause of the mental health issue (and not the other

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<sup>27</sup> Greenberg, Paul, Andree-Anne Fournier, Tammy Sisitsky, Crystal Pike, and Ronald Kessler. "The Economic Burden of Adults with Major Depressive Disorder in the United States (2005 and 2010)." *J Clin Psychiatry* 76. 2015. Web.

<sup>28</sup> Paul, Karsten, and Klaus Moser. "Unemployment Impairs Mental Health: Meta-Analyses." *Journal of Vocational Behavior* 74. 2009. Web.

<sup>29</sup> McKee-Ryan, Frances, Zhaoli Song, Connie Wanberg, and Angelo Kinicki. "Psychological and Physical Well-Being During Unemployment: A Meta-Analytic Study." *Journal of Applied Psychology* 90. 2005. Web.

way), is more difficult to establish. Both sets of meta-analyses attempt to test causality and are able to suggest, although not definitely prove, that causation between unemployment and impaired mental health exists. To evaluate this claim, the analyses relied on longitudinal studies that followed workers through unemployment and subsequent reemployment. In both analyses, the findings show that mental health deteriorated due to unemployment but generally improved after becoming reemployed, suggesting the lack of employment was a cause of the decline in mental health.

The above studies analyze the general population. Although no studies were found that explicitly study the connection of employment and mental health within the military spouse community, there is some available data on general mental health problem prevalence and treatment rates of military spouses. These two sets of data can be used in combination to extrapolate unemployment related mental health problems within the military spouse community.

Regarding general prevalence rates of mental health problems, Eaton, et al. found that military spouses have similar rates of mental health problems to the active duty members themselves and often display greater symptoms of depression and anxiety following separation from their spouse due to deployment.<sup>30</sup> Their study found that 12.2% of military spouses screen positive for major depression and 17.4% screened positive for generalized anxiety.<sup>31</sup> It should be noted that the Eaton, et al. paper sampled people at primary care facilities and the authors acknowledge this population is likely to have higher rates of mental health issues than the general population and thus not likely to represent the general military spouse community.<sup>32</sup> For a comparison measure, Breslau and Brown found military spouses showed rates of past-year major depression of 6.81% compared to 5.93% for the comparison group.<sup>33</sup>

Another important consideration is the rate at which patients seek treatment. According to the study produced by Breslau and Brown, military spouses were more likely to receive any kind of treatment for behavioral health, 19.5% vs 15.1% than civilian comparisons.<sup>34</sup> Additionally, military wives were slightly more likely than their civilian counterparts to seek specialty treatment for their behavioral health problems (7.4% vs 6.8%) and more likely to use prescription drugs to treat their behavioral health issues (18.1% vs 12.6%). Eaton, et al also measured rates of treatment and found that of the total sample, 13.8% received specialty mental health care and of the spouses that screen positive for a mental health issue, 40.5% received specialty mental health care.<sup>35</sup>

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<sup>30</sup> Eaton, et al. "Prevalence of Mental Health Problems, Treatment Need, and Barriers to Care among Primary Care-Seeking Spouses of Military Service Members Involved in Iraq and Afghanistan Deployments. *Military Medicine*. 2008.

<sup>31</sup> Eaton, et al. "Prevalence of Mental Health Problems, Treatment Need, and Barriers to Care among Primary Care-Seeking Spouses of Military Service Members Involved in Iraq and Afghanistan Deployments. *Military Medicine*. 2008.

<sup>32</sup> IBID

<sup>33</sup> Breslau, Joshua and Ryan Andrew Brown. "Behavioral Health and Service Use Among Civilian Wives of Service Members and Veterans: Evidence from the National Survey of Drug Use and Health." Santa Monica, CA: RAND Corporation, 2015.

<sup>34</sup> IBID

<sup>35</sup> Eaton, et al. "Prevalence of Mental Health Problems, Treatment Need, and Barriers to Care among Primary Care-Seeking Spouses of Military Service Members Involved in Iraq and Afghanistan Deployments. *Military Medicine*. 2008.

From these results, it is clear there is a linkage between mental health problems and unemployment with moderate evidence to support causality that the unemployment leads to higher rates of mental health issues. The range of magnitudes vary from a low of 1.48x to a high of 2.03x more likely for unemployed persons to have depression. While it should be noted these analyses did not focus on the military spouse population, it is reasonable to assume similar trends are likely to exist in the military spouse community which is heavily female dominated (who tend to have higher rates of depression generally) and has higher baseline rates of mental health concerns than the general population.

## Physical Health

In addition to mental health issues, numerous researchers have evaluated the connection between unemployment and physical health. Although a causal link may exist, there is less rigorous evidence to support the connection of unemployment and physical health problems. The lack of consensus is due in part to the wide range of findings from different evaluation, including not only the magnitude of the association but also the direction. Some studies have found that negative employment changes correspond to negative changes in physical health while other studies have found the exact opposite correlation indicating loss of employment can actually result in improved physical health.<sup>36</sup>

Although no clear consensus exists for the relationship between unemployment and physical health, there is moderate evidence linking underemployment and general health. Friedland and Price found that status underemployment, defined as employment of lower socioeconomic status than would be predicted by the level of educational attainment, is associated with higher rates of chronic disease (Arthritis, rheumatism, lung disease, hypertension, heart attack or heart trouble, diabetes, cancer/malignant tumor, foot problems, stroke, fracture or broken bones, and loss of urine beyond one's control).<sup>37</sup> Specifically, the authors find a 7.6% higher incidence of chronic disease among the status unemployed which is statistically significant at the  $p < .001$  level.<sup>38</sup> Interestingly, the authors also evaluated the association between unemployment and health but found both lower rates of association and lower statistical power. Specifically, the authors found 6.1% higher rates of chronic disease among unemployed populations but the results were only significant at the  $p < .05$  level.<sup>39</sup>

The linkage between physical health and negative employment conditions is less strong than in regard to mental health. The strongest piece of evidence is the correlation between underemployment and increased levels of chronic conditions. Although this study did not directly evaluate the military spouse population and the increased incidents of physical health is only slightly higher (7.6% more physical health problems), this finding is still of particular interest to the military spouse community because of the high rates of underemployment within this population.

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<sup>36</sup> Catalano, et al. "The Health Effects of Economic Decline." *Annu Rev Public Health*. 2011.

<sup>37</sup> Friedland, Daniel and Price, Richard. "Underemployment: Consequences for the Health and Well-Being of Workers." *American Journal of Community Psychology*. September 2003.

<sup>38</sup> IBID

<sup>39</sup> IBID

## Substance Abuse

Many studies have also tied unemployment to substance abuse, including studies that specifically include the military community. First looking at the general population, a large meta-analysis by Henkel (2011)<sup>40</sup> encompassing studies from 1990 to 2010 looked at the association between unemployment and substance use. The US-based studies found that between 3.7% and 5.0% of employed people would be classified as alcohol dependent by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), while between 8.0% and 13.2% of unemployed people would be classified as alcohol dependent. The prevalence rates for heavy or binge drinking were also similarly elevated among unemployed persons. Turning specifically to the military population, Eaton et al. (2008) looked at spouses of military members deployed to Iraq and Afghanistan and found that 4.3% of those spouses reported having used alcohol more than they had intended in the past four weeks.<sup>41</sup> As an interesting comparison finding, Breslau and Brown found military spouse substance use disorder prevalence rates of 2.89% among military spouses which was lower than the 5.15% prevalence within the comparison group.<sup>42</sup>

Unemployed persons were also found to be more than twice as likely to be active drug users as employed persons with prevalence rates of 17.0% and 8.0%,<sup>43</sup> respectively. Unemployed persons were also twice as likely to have used prescription drugs in a nonmedical way in the past year as were employed persons, with respective prevalence rates of 12.5% and 6.1%.<sup>44</sup>

## Societal Cost

### Financial Model Methodology

The financial model accompanying this report estimates the costs of military spouse unemployment and underemployment based on the above research. The baseline model is designed to be conservative in nature and defines population size and the costs of each component based on the most reputable sources available. However, because there is a range of potential values based on the available research for each of the cost drivers, the model allows for the option of using different data variables based on the preferences of the user. For example, the model can be adjusted to explore the effects of different military spouse population sizes based on several published figures.

Costs for each component are calculated based on the differences in the prevalence of each cost category between military spouses and a comparable civilian population. For example, if military spouse

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<sup>40</sup> Henkel, D. "Unemployment and Substance Use: A Review of the Literature (1990-2010)." *Current Drug Abuse Reviews*, 4. (2011).

<sup>41</sup> Eaton, et al. "Prevalence of Mental Health Problems, Treatment Need, and Barriers to Care among Primary Care-Seeking Spouses of Military Service Members Involved in Iraq and Afghanistan Deployments." *Military Medicine*. 2008.

<sup>42</sup> Breslau, Joshua and Ryan Andrew Brown. "Behavioral Health and Service Use Among Civilian Wives of Service Members and Veterans: Evidence from the National Survey of Drug Use and Health." Santa Monica, CA: RAND Corporation, 2015.

<sup>43</sup> Henkel, D. "Unemployment and Substance Use: A Review of the Literature (1990-2010)." *Current Drug Abuse Reviews*, 4. (2011).

<sup>44</sup> IBID

unemployment was found to be 20% and civilian female unemployment was 10%, the model would calculate costs based on the 10% difference between the two because it is the incremental difference between the two that represents the true incremental cost of the driver. Additionally, costs are calculated from the perspective of a third-party that bears the burden of the cost. For example, forgone wages as a result of not participating in the labor force represent a loss to the individual person who is not receiving the wages, however, the societal cost of the forgone wages are the forgone income tax revenue to the government resulting from the lost wages. In this example, it is the forgone income tax revenue that is counted toward the societal cost and not the full forgone wage amount.

The cost components chosen for inclusion in the model are based on established and well documented links between the metric and the societal cost. If sufficient research does not exist or there are too many degrees of separation between unemployment / underemployment and the cost metric, the element was not included in the model. For example, some research exists that suggests higher divorce rates, reduced infant birth weights, and higher tobacco use might be associated with negative employment conditions. Although there may well be important societal cost associated with each of these metrics (and others), they proved to be too difficult to meaningfully quantify and thus are not included in the financial model.

### Cost Summary

The results of the financial analysis reveal that adverse military spouse employment conditions represent a social cost ranging from approximately **\$710 Million to \$1.07 Billion** per year. The range is driven by differences in key assumptions regarding the relative rates of unemployment and underemployment found in the available literature. As a result of the variances in these key cost drivers, two scenarios are offered to demonstrate a reasonable “high” and “low” estimate of the societal impact. Details of the specific scenario are outlined below.

### Low Scenario

The Low Scenario is built on unemployment assumptions from the 2010 RAND analysis that found military spouse unemployment rates of 12.0% relative to 7.7% for comparable civilian spouses.<sup>45</sup> The underemployment assumptions in the Low Scenario are 38.0% for military spouses compared to 6.0% for civilian comparisons also from the 2010 RAND analysis.<sup>46</sup> Based on these assumptions, the estimated annual societal cost is estimated to be **\$710,344,000**.

The cost is comprised of the three broad employment categories: unemployed, underemployed, and reduced labor force participation. The largest component is reduced labor force participation which represents approximately 49.7% of the total social cost. The large cost associated with this segment of the population is attributable to its large size. There are an estimated 95,000 more military spouses that are not participating in the labor force than would have been expected based on the comparison average. This exceeds the population of underemployed and unemployed individuals and thus generates such a large portion of the total cost. The breakdown of costs by employment category are summarized below:

Reduced labor force participation: **\$352,825,000**

Underemployment: **\$226,255,000**

Unemployment: **\$131,264,000**

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<sup>45</sup> Lim, Nelson and Schulker, David. “Measuring Underemployment Among Military Spouses”. *Rand Corporation*. 2010.

<sup>46</sup> IBID



**TOTAL: \$710,344,000**

Shifting from the employment category focus to a functional cost focus, the total can be separated by type of cost. The figures below summarize cost types by lost income tax, unemployment benefits paid and healthcare benefits paid.

Total Lost Income Tax: **\$578,430,000**  
Unemployment Benefits: **\$72,161,000**  
Total Health Costs: **\$59,753,000**  
**TOTAL: \$710,344,000**

Lost income tax revenue is by far the largest component which accounts for 81.4% of the total cost to government. This metric is calculated by using average educational attainment rates of the military spouse population to predict average personal income for each level of education as demonstrated in the 2012 American Community Survey. The resulting average personal incomes are then matched with the appropriate marginal tax rate for that level of income. Unemployment benefits paid by the government and total health care costs represent significantly smaller portions of the total cost at 10.2% and 8.4%, respectively.

### High Scenario

The High Scenario is built on unemployment assumptions from the 2015 US Bureau of Labor Statistics data that found military spouse unemployment rates of 18.0% relative to 4.4% for comparable civilian spouses,<sup>47</sup> a much wider spread than the assumption made in the Low Scenario. The underemployment assumptions are 53.0% for military spouses originating from the Military Spouse Employment Report<sup>48</sup> compared to the 6.0% for civilian rate from the 2010 RAND analysis.<sup>49</sup> Based on these assumptions, the estimated annual societal cost is estimated to be **\$1,068,508,000**.

In contrast to the Low Scenario in which the largest cost component is reduced labor force participation, unemployment is the largest cost component in the High Scenario representing approximately 36.5% of the total social cost. The breakdown of costs by employment category are summarized below:

Underemployment: **\$389,880,000**  
Reduced labor force participation: **\$352,825,000**  
Unemployment: **\$325,803,000**  
**TOTAL: \$1,068,508,000**

Shifting from the employment category focus to a functional cost focus, the total can be separated by type of cost. The figures below summarize cost types by lost income tax, unemployment benefits paid and healthcare benefits paid.

Total Lost Income Tax: **\$762,775,000**  
Unemployment Benefits: **\$228,232,000**  
Total Health Costs: **\$77,501,000**

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<sup>47</sup> "The Employment Situation: December 2015" *US Bureau of Labor Statistics*. 2016.

<sup>48</sup> "Military Spouse Employment Report" *Institute for Veterans and Military Families*. February 2014.

<sup>49</sup> IBID

**TOTAL: \$1,068,508,000**

Lost income tax revenue is again the largest component which accounts for 71.4% of the total cost to government. Unemployment benefits paid by the government are a larger component of the cost, at 21.4% of the total, driven by higher relative rates of unemployment in this scenario. Finally the health care costs represent the remaining 7.3% of the total cost.

Please refer to the model for additional detail on the cost components and the assumptions used to generate the above calculations for each scenario.

## Conclusion

The objective of this analysis has been to analyze the issue of unemployment and underemployment among the military spouse population and quantify the societal cost of the problem. From the research, it is clear that military spouses do experience higher rates of unemployment and underemployment, as well as, much lower labor force participation rates than their civilian peers. The implications of these negative employment conditions are wide and include a large societal cost estimated to range from \$710M to \$1.07B in annual costs borne by society. The above analysis is meant primarily to demonstrate the magnitude of the problem. Information from this paper will hopefully be useful to identify areas in need of further study and to encourage resources to be diverted to address the identified issue.