



Research Paper

Trends in disability and program participation among U.S. veterans

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Background: Disability is increasingly part of the lives of veterans and more research is needed to understand its impact on veterans' participation in disability benefit programs.

Objective/hypothesis: We examine how recent trends in receipt of service-connected disability compensation from the Department of Veterans Affairs (VA) compare to trends in self-reported disability and participation in Social Security Disability Insurance (DI) and Supplemental Security Income (SSI) among veterans.

Methods: We use 2002–2013 data from the Current Population Survey to describe trends in receipt of VA disability compensation and to compare between trends in self-reported disability and DI/SSI participation for veterans versus nonveterans.

Results: The percentage of veterans reporting they receive VA disability compensation increased substantially from 2002 to 2013 and was especially notable among younger (ages 18–39) and older (ages 50–64) veterans. From 2009 to 2013, self-reported disability increased among the younger and older veterans but not among middle-age veterans and nonveterans, and self-reported cognitive disability increased substantially among young veterans. DI/SSI participation among older veterans increased more than for nonveterans over the period examined.

Conclusions: Effective policies are needed to incentivize work among young veterans and to help them obtain both the skills they need to succeed in the labor force and the supports (such as psychiatric health services) they need to do so. Older veterans are facing increasing challenges in the labor market, and further research is needed to determine whether these challenges are primarily related to health, a growing skills gap, or poorly-aligned incentives. © 2016 Elsevier Inc. All rights reserved.

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The number of veterans receiving compensation from the U.S. Department of Veterans Affairs (VA) for service-connected disability has risen rapidly since 2000. According to the Congressional Budget Office (CBO), the annual number of new VA disability compensation awards more than tripled between 2000 and 2013, and the total number of recipients increased by nearly 55 percent, from 2.3 million to 3.5 million.¹ The growth in the number of disability compensation recipients, as well as rising average payments per beneficiary, have led to growing expenditures, from \$20 billion in fiscal year 2000 to \$54 billion in fiscal year 2013.¹ Most of this growth comes from

veterans who last served in the Vietnam War and the post-9/11 wars in Iraq and Afghanistan.

The primary purpose of this paper is to examine how recent trends in VA disability compensation receipt relate to self-reported disability and participation in the Social Security Administration's (SSA) disability programs, as recorded in the Current Population Survey (CPS). More specifically, we use CPS data to answer the following research questions:

1. What are recent trends for the percentage of veterans who report VA disability compensation receipt, accounting for changes in demographic characteristics such as age, sex, and race/ethnicity?
2. Do trends in the percentage of people reporting the six-question sequence of disability first introduced in the American Community Survey (hereafter, "6QS disability") differ by veteran status? We focus in particular on the question reporting serious difficulties concentrating, remembering, or making decisions (hereafter, "cognitive disability").

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3. Does work-limitation disability or receipt of SSA disability benefits (that is, Social Security Disability Insurance [DI] or Supplemental Security Income [SSI]) differ by veteran status?

Multiple factors may have contributed to the observed trends, and it is difficult to distinguish between the contributions of each. Potentially relevant factors include policy changes that affected VA disability determinations, the large number of traumatic injuries in the recent conflicts in Iraq and Afghanistan, and trends in labor market conditions.¹ The Veterans Claims Assistance Act of 2000² and the Veterans' Benefits Improvement Act of 2008³ both required the VA to assist veterans with their applications for VA disability compensation. VA disability compensation applications were likely further boosted by increased use of the internet to convey information and submit applications, and by the establishment of pre-discharge programs that accept applications before separation from the military.

Specific to Vietnam veterans, the VA has been expanding the list of conditions presumptively linked to Agent Orange, starting in 2001 with type 2 diabetes—a very common condition in the U.S. population.⁴ This presumptive status means that Vietnam veterans with diabetes only need to prove they served in Vietnam, but not that their diabetes is a direct result of their military service.⁵ Other presumptive conditions were added in 2010, including ischemic heart disease, Parkinson's, and certain types of leukemia.⁶

These changes were accompanied by increased outreach regarding post-traumatic stress disorder (PTSD). In July 2010, the VA changed its regulations with regard to PTSD.⁷ The new rule applies to all veterans, including those who served prior to 9/11, and simplifies the process for veterans with PTSD to obtain disability compensation. The new regulation states that the VA will grant disability compensation to those with PTSD if they can prove that they served in a war zone and in a job consistent with the PTSD-causing event or events. Prior to the new rule, noncombat veterans had to prove that a specific "hostile military activity" caused their PTSD in order to receive disability compensation. Many veterans who did not serve in combat roles experienced traumatic experiences during their tours of duty. This easing of eligibility rules likely led to an increase in the frequency of VA disability compensation receipt among veterans who served in a war zone but not in a combat role—particularly among female veterans, who have not served in combat roles due to the combat exclusion rule. Coupled with the increased outreach regarding PTSD, this change in eligibility rules may also have led to reduced stigma among veterans with regard to reporting their disabilities.

According to CBO (2014),¹ the higher disability rates among those who served in Iraq and Afghanistan cannot be fully attributed to combat injuries. Environmental and occupational factors also play a role, including difficult terrain in

Afghanistan; potential chemical exposures in Iraq; multiple deployments; age of the force, including reservists; and the effects of carrying heavy equipment, including body armor. McNally and Frueh (2013),⁸ however, claim that actual rates of fatalities, injuries, and PTSD attributable to the wars in Iraq and Afghanistan are historically *low*, even though the applications for VA disability compensation, particularly due to PTSD, have risen dramatically. Fisher (2014)⁹ provides further analysis of disputes around whether PTSD is over- or under-diagnosed in the U.S. Military context. Among other trends, deteriorating labor market conditions during the Great Recession (defined by the National Bureau of Economic Research as lasting from December 2007 to June 2009) have likely led more veterans to seek VA disability compensation to replace lost earnings. Such a trend was observed also for DI (see for example CBO, 2010¹⁰) and is consistent with the findings of Angrist et al (2010),¹¹ who concluded that financial incentives, not increased combat exposure, are responsible for higher unemployment and VA disability compensation rates among veterans with relatively low vocational skills.

Veterans with disabilities may also qualify for DI or SSI, regardless of whether they receive VA disability compensation. Any DI cash benefits would not be offset by VA disability compensation, and vice versa; however, SSI cash benefits would be reduced since that is a means-tested program.¹² In 2010, about 770,000 veterans under age 66 reported receiving SSA disability benefits.¹³ Only a minority of them were receiving VA disability compensation. Wilmoth et al (2013),¹⁴ using SIPP data, find that in 2008 about 17% of veterans under age 65 received VA disability compensation and about 10% received DI benefits, but only 3.5% concurrently received both types of benefits. Tennant (2012)¹⁵ found that over 16% of recent veterans—defined as those who served since 2001—reported receiving VA disability compensation in 2010; only 1.4% of recent veterans reported receiving DI benefits and 0.5% reported receiving SSI benefits.

Since 9/11, SSA has created programs that expedite the SSA claims process for individuals experiencing disability onset, according to SSA's definition, during active military service.^{12,13} Wounded warrior applications are given priority at SSA offices; since March 17, 2014, any veteran with a VA disability rating of 100 percent, Permanent and Total, is eligible for expedited processing by SSA.¹⁶ A recent review by the Government Accountability Office found that close to 60,000 individuals received concurrent "triple benefits" from VA disability compensation, DI, and Department of Defense retirement during fiscal year 2013, with payments to these individuals from all three programs totaling over 3.5 billion.¹⁷

In our analysis, we account for changes in demographic characteristics that likely differ between veterans and non-veterans. Using a regression-based technique, we adjust for differential trends in the sex composition, mean age in years (within each age group), race/ethnicity distribution,

and regional distribution. We deliberately do not account for individual characteristics such as education and marital status, which are clearly associated with veteran status and with decisions made by veterans regarding employment and application for disability benefits. We also do not account for income, which is a function of those characteristics, among other factors.

Data and methods

Data

The CPS, sponsored by the Bureau of Labor Statistics (BLS) and conducted by the U.S. Census Bureau, is a monthly survey of households primarily used to produce monthly labor force, unemployment rate, and related estimates for the U.S. civilian noninstitutionalized population.¹⁸ The CPS follows each housing unit for 16 months. A housing unit is in the sample for four consecutive months, then leaves the sample for eight months, and then returns for another four consecutive months. A sample of eight panels (called rotation groups) is interviewed each month, with each panel being representative of the U.S. civilian noninstitutionalized population. The CPS Basic Monthly Survey (CPS-BMS) collects demographic data for all occupants of the sampled households and labor force data for all occupants age 15 or older. The CPS Annual Social and Economic Supplement (CPS-ASEC), conducted primarily in March, collects additional data on work experience and income sources, among other things (since 2002, the CPS-ASEC has also been completed by a quarter of each of the February and April samples).

In our analyses, we use both CPS-BMS and CPS-ASEC data for years 2002–2013, restricted to individuals ages 18–64. The CPS-BMS data provide information on reported veteran status, disability, and basic demographic characteristics (age, sex, race, and region). The CPS-BMS data also include veterans' statistical weights, which are calculated for all CPS respondents based on their veteran status. The veterans' weights are adjusted to match counts of veterans separately established by the VA. The CPS-ASEC data provide information on reported VA disability compensation and DI/SSI benefit receipt, as well as reported work limitations.

The CPS also includes a supplement that focuses specifically on veterans. We did not use that supplement in our analyses. Because of the 4–8–4 rotation of the interviews, a respondent who answered questions in the veteran supplements (in July or August) would never answer questions in the CPS-ASEC.

Key variables

We identify as veterans all CPS *civilian* household members who reported they ever served on active duty in the U.S. armed forces. We identify VA disability compensation

receipt as veterans reporting receiving VA payments in the form of service-connected disability compensation.

We identify disability using the U.S. Census Bureau six-question sequence on disability, which was first used in the 2008 ACS. Instituted in June 2008, the 6QS disability sequence appears in the CPS-BMS as follows: (1) “Is anyone deaf or does anyone have serious difficulty hearing?” (2) “Is anyone blind or does anyone have serious difficulty seeing even when wearing glasses?” (3) “Because of a physical, mental, or emotional condition, does anyone have serious difficulty concentrating, remembering, or making decisions?” (4) “Does anyone have serious difficulty walking or climbing stairs?” (5) “Does anyone have difficulty dressing or bathing?” (6) “Because of a physical, mental, or emotional condition, does anyone have difficulty doing errands alone such as visiting a doctor’s office or shopping?”¹⁹ The CPS-BMS adopted the 6QS disability questions in 2008 and the CPS-ASEC adopted them in 2009. Hereafter, “6QS disability” refers to a positive response to at least one of these questions.

We identify work disability as an affirmative response to the work-limitation question in the CPS-ASEC: “(Do you/Does anyone in the household) have a health problem or disability which prevents (you/they) from working or which limits the kind or amount of work (you/they) can do?” We identify SSA disability program participation as reporting either receiving Social Security income due to disability, receiving SSI benefits, or both (the combination of DI and SSI reflects the frequent inability of respondents to distinguish between the two programs).

Analytical methods

All the results presented below are shown separately for three age groups—18–39, 40–54, and 55–64—and are weighted using the CPS veterans' weights, which are calculated for all CPS respondents based on their veteran status. We first use CPS-ASEC data for 2002–2013 to calculate, annually, the age composition of veterans and nonveterans ages 18–64; for each of the three age groups, we also track the veteran percentage in the total population. We then calculate regression-adjusted values, by age group and veteran status, for the percentages reporting VA disability compensation, any 6QS disability, each 6QS disability subcategory, work disability, and DI/SSI participation.

We implemented a regression-based adjustment that accounts for changes in the composition of veterans in terms of age (in years), sex, race/ethnicity, and region. For each dependent variable Y , we ran the following logistic regression model, separately by age group and veteran status (six groups):

$$\ln\left(\frac{Y_i}{1 - Y_i}\right) = \alpha_i + \beta'X_i + \sum_{T=2010}^{2013} \gamma_t I\{t=T\}$$

where X is a vector of non-endogenous characteristics (age, sex, race/ethnicity indicators, and region indicators), I is a dummy variable that equals 1 if $t = T$ and equals 0 otherwise, and 2009 is used as a reference for subsequent years. For both veterans and nonveterans, we use the estimated coefficients from these regressions to predict what would have been the value of Y for that year, keeping X constant at the 2002 values for veterans. We make this adjustment so that cross-year comparisons of the dependent variable Y are not influenced by cross-year differences in observed characteristics X . Similarly, comparisons between veterans and nonveterans account for differences between them in the same characteristics. In the figures below, we include 95% confidence intervals to indicate the level of uncertainty around each of the estimates.

6QS disability information is available for all CPS-BMS respondents in years 2009–2013. We therefore used CPS-BMS data to calculate the adjusted percentages for any 6QS disability and each of the 6QS disability subcategories. For each year, we pool CPS-BMS data from all 12 monthly questionnaires. Because of the 4–8–4 rotation sequence, respondent are interviewed four times each year. To ensure that we count each respondent only once each year, we include only those who completed the CPS-BMS questionnaire for the first time ever (month-in-sample = 1) or for the first time that year (month-in-sample = 5).

In contrast to 6QS disability information, complete information on VA disability compensation, work limitations, and DI/SSI participation is only available in the CPS-ASEC. Those questions are available for more years than the 6QS disability measure, which allows us to examine trends for a longer period (we use 2002–2013).

Results

Age composition

Since 2002, the population of veterans ages 18–64 has been shrinking while the nonveteran population ages 18–64 has been growing (Table 1). In general, veterans

are older than nonveterans. More than a third of veterans in any year are in the 55–64 age group, which is more than double the percentage in that age group among nonveterans. In more recent years, among those ages 18–64, the age distributions of the veteran and nonveteran populations have been changing in opposite directions (Table 1). Among veterans, the share of those in the older age group (55–64) has declined steadily since 2007, the share of those in the middle age group (40–54) has increased steadily since 2007, and the share of those in the younger age group (18–39) has increased steadily since 2009. The most notable difference in trends for the nonveteran population is the steady increase in the older age group's share.

The veteran percentage in the 18–64 population has declined overall and within each group (not shown). The decline is most notable in the 55–64 age group, in which the veteran share declined from 21.3% in 2002 to 11.4% in 2013. These trends appear to be capturing the “aging out” of Vietnam veterans from the under-65 population along with the aging of the baby boomers among nonveterans: those who served in the Vietnam War are gradually moving out of the 55–64 age bracket while nonveteran baby boomers are moving into it.

VA disability compensation

The percentage of veterans reporting they receive VA disability compensation increased from 2002 to 2013 for all three age groups (Fig. 1). The VA disability compensation percentage more than doubled for the 18–39 and 55–64 age groups. The VA disability compensation trajectory is similar for the youngest and oldest age group, even though veterans in the younger age group are substantially less likely to report 6QS disability (see below).

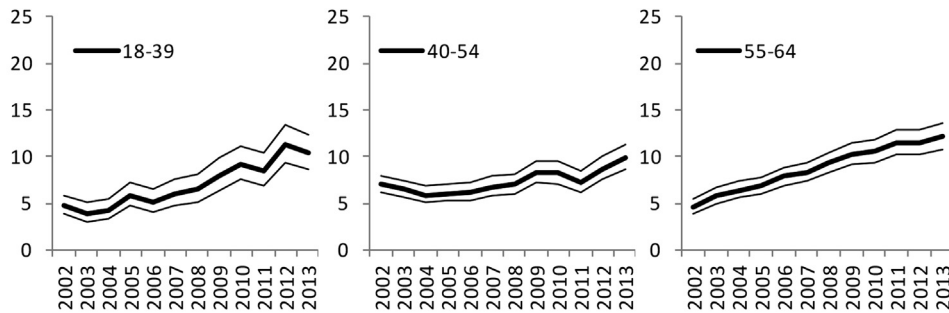
6QS disability

As mentioned previously, we can only measure 6QS disability starting in 2009. From 2009 to 2013, 6QS disability appears to have risen slightly for the oldest veterans' age group and more substantially for the youngest age group; it

Table 1
Age composition of veterans and nonveterans ages 18–64, 2002–2013^a

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Veterans												
<i>N</i> (unweight.)	7671	7506	7183	6828	6572	6267	6024	5782	5628	5413	5080	4816
<i>N</i> (thousands)	16,122	15,041	15,116	14,817	14,454	14,114	13,794	13,686	13,419	13,055	12,302	12,230
18–39	23.7	20.7	22.0	21.7	22.0	21.6	22.0	21.7	22.0	22.2	23.1	24.4
40–54	42.9	40.7	39.0	37.6	37.1	37.1	37.3	37.9	38.3	38.6	39.3	39.3
55–64	33.4	38.5	39.1	40.6	40.9	41.2	40.7	40.5	39.7	39.2	37.6	36.3
Nonveterans												
<i>N</i> (unweight.)	77,699	79,420	77,757	76,522	76,298	75,953	76,190	77,371	77,992	76,649	75,967	75,179
<i>N</i> (thousands)	156,596	163,219	164,734	166,776	169,045	171,745	173,070	174,672	176,425	177,783	180,116	180,737
18–39	52.2	51.8	51.1	50.5	49.9	49.7	49.4	49.2	49.1	48.9	48.3	48.3
40–54	35.1	35.0	35.2	35.3	35.2	34.9	34.6	34.3	33.8	33.4	33.1	32.7
55–64	12.7	13.2	13.7	14.3	14.9	15.4	15.9	16.5	17.1	17.8	18.6	19.0

^a Except where mentioned, all numbers are weighted using PWVETWGT.



* Thin solid lines represent a 95% pointwise confidence band.

Fig. 1. Adjusted percentage of veterans receiving VA disability compensation, by age group, 2002–2013.

did not change much for the middle age group (Fig. 2). In comparison to veterans, 6QS disability among nonveterans is lower and has remained flat from 2009 to 2013.

We attribute the increase in 6QS disability among veterans in the 18–39 age group after 2011 primarily to the increase in the percentage reporting serious difficulty concentrating, remembering, or making decisions (cognitive difficulty). The percentage of veterans in the 18–39 age group who report such difficulty increased by more than 60 percent, from 2.3% in 2009 to 4.2% in 2013 (Fig. 3). This increase is dramatically different from the trend among the 18–39 nonveteran group, which remained flat during that time. Most of the increase for veterans occurred from 2011 to 2013; the percentage in 2013 (4.2 percent) represents a 37% increase over 2011 (3.1 percent). This increase amounts to roughly 33,000 additional veterans ages 18–39 reporting serious difficulty concentrating, remembering, or making decisions.

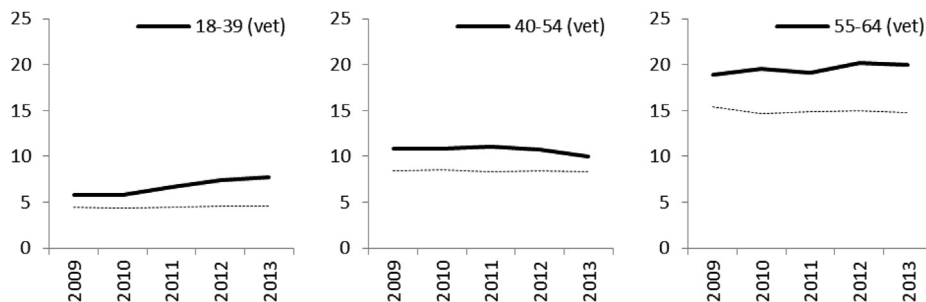
The percentage in each age group reporting they are deaf or have serious difficulty hearing is more than twice as large among veterans as among nonveterans. For both veterans and nonveterans, the percentage increases with age. We also observe a steady increase in this percentage for the youngest age group, although not as substantial as the increase in cognitive disability for that group.

The percentage reporting serious difficulty walking or climbing stairs (ambulatory difficulty) has been increasing most noticeably for veterans in the oldest age group and is the main reason for the cross-age differences in the overall 6QS disability measure. In comparison to veterans, ambulatory difficulty among nonveterans in all age groups is lower and has remained flat from 2009 to 2013.

We did not find any meaningful trends in difficulties with vision, self-care, and independent living for either veterans or nonveterans. For the most part, the prevalence of these difficulties was similar for veterans and nonveterans.

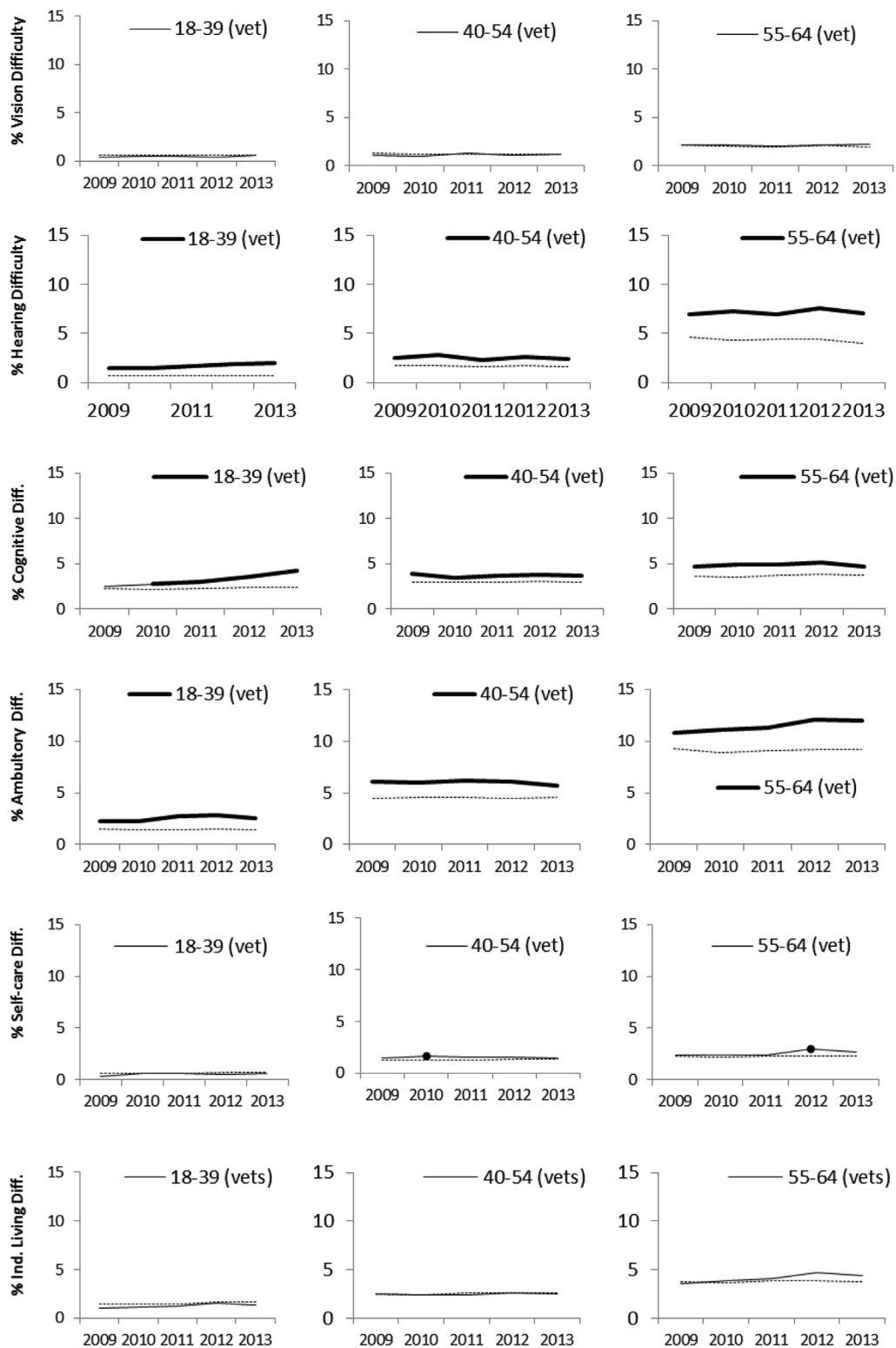
Work disability

The percentage reporting work disability increased from 2002 to 2013 for veterans ages 18–39, and more notably for those ages 55–64, but not for nonveterans (Fig. 4). Although these trends are adjusted for cross-year and cross-group differences in demographic characteristics (sex, age, race/ethnicity, and region), they do not account for trends in socioeconomic status and labor market conditions, which are both associated with self-reported work disability.



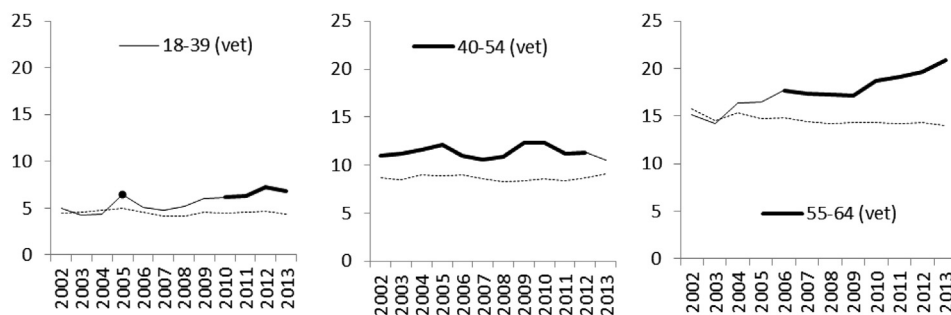
* Solid (dashed) line connects point estimates for veterans (nonveterans). All annual point estimates for veterans and nonveterans are significantly different from each other at the 5% level.

Fig. 2. Adjusted percentage of veterans and nonveterans reporting any 6QS disability, by age group, 2009–2013.



* Solid (dashed) line connects point estimates for veterans (nonveterans). Thick solid line or marker indicates that annual point estimates for veterans and nonveterans are significantly different from each other at the 5% level.

Fig. 3. Adjusted percentage reporting 6QS disability subgroup, by age group, 2009–2013.



* Solid (dashed) line connects point estimates for veterans (nonveterans). Thick solid line or marker indicates that annual point estimates for veterans and nonveterans are significantly different from each other at the 5% level.

Fig. 4. Adjusted percentage of veterans and nonveterans reporting work disability, by age group, 2002–2013.

SSA disability program participation

The share of veterans ages 55–64 who are on DI/SSI has increased more than it has for nonveterans over the period examined (Fig. 5). Once again, the adjustments do not account for differences in socioeconomic status, which may have played a role in the observed trends. There is no clear trend for veterans relative to nonveterans in the younger age groups.

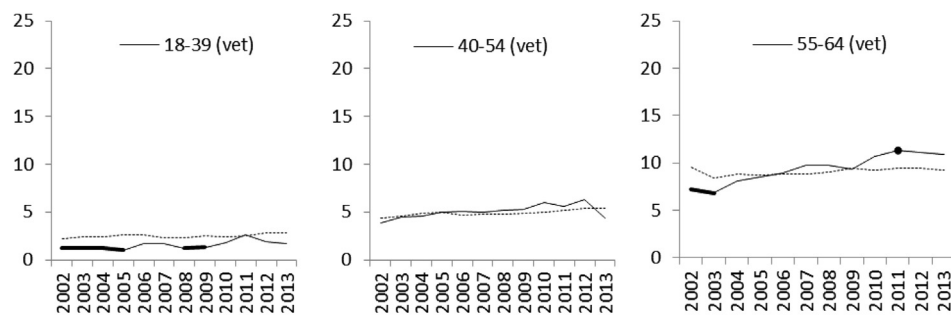
Discussion

The percentage of veterans receiving VA disability compensation has risen substantially since 2002, especially among those ages 18–39 and 55–64. The former are mostly veterans of the wars in Iraq and Afghanistan and the latter are mostly veterans of the Vietnam War. These trends cannot be explained by within-group aging or changes in the composition of veterans in terms of sex, race/ethnicity, or region.

Many factors may have contributed to these trends, and it is difficult to distinguish between the contributions of

each. According to the VA, a majority of combat injuries in Operation Iraqi Freedom and Operation Enduring Freedom are attributed to high-pressure waves, acceleration-deceleration injury, and shrapnel from an explosion.²⁰ Minor traumatic brain injury (mTBI) can even occur in those who were not directly hit by a blast and never lost consciousness. Kevlar helmets and body armor have helped reduce the mortality rate, but cannot protect completely, particular when dealing with injuries to the head, neck, and face.

While the topic of PTSD prevalence in the U.S. military remains highly controversial,^{8,9} changes in VA PTSD rules encouraged and made it easier to receive VA disability compensation. These changes may have also reduced the stigma around cognitive disability, leading to increases in self-reports of such disability. The cognitive disability question in the 6QS disability sequence may be an adequate proxy for PTSD as well as mTBI. Our findings suggest a substantial increase after 2010 in the percentage of young veterans reporting they have serious difficulty concentrating, remembering, or making decisions; we did not observe a similar trend among nonveterans.



* Solid (dashed) line connects point estimates for veterans (nonveterans). Thick solid line or marker indicates that annual point estimates for veterans and nonveterans are significantly different from each other at the 5% level.

Fig. 5. Adjusted percentage of veterans and nonveterans receiving DI or SSI, by age group, 2002–2013.

Because older veterans have typically been separated from the military for a much longer period than younger veterans, it seems likely that trends in their experience are less reflective of their military and discharge experiences and more reflective of their civilian labor market and other post-discharge experiences. This may explain why work disability rose faster than 6QS disability from 2009 to 2013 for the 55–64 age group, whereas the opposite was true for the 18–39 age group. For the older group, work disability increased by 21.8 percent, whereas 6QS disability increased by just 5.2 percent. In contrast, 6QS disability rose by 34.1 percent for the 18–39 age group, whereas work disability rose by 13.4 percent. The weak labor market from 2007 through the end of the sample period likely led to increased reporting of work disability, and differences in duration since discharge likely mean that any such effect increases with the veteran's age.

The long-term implications of young veterans reporting cognitive disability and receipt of VA disability compensation benefits in increasingly higher rates will largely depend on their access to treatment that is effective in reducing such disability. At the same time, it is important to recognize that the income effect of receiving disability compensation benefits may create a substantial disincentive to work.²¹ In light of these concerns, the VA and other federal agencies such as the U.S. Department of Labor (DOL) should ensure there are effective policies in place to incentivize work among young veterans and to help them obtain both the skills they need to succeed in the labor force and the supports (such as psychiatric health services) they need to do so.

There are several programs already in place aimed at increasing employment opportunities for veterans, such as the Work Opportunity Tax Credit (which was placed in “hiatus” in 2015) and various training programs at both the VA and DOL. To our knowledge, however, there is very limited evidence (if at all) on the success of these initiatives in improving employment outcomes among veterans or reducing their entry into the VA disability compensation program.

Older veterans are more likely than their nonveteran peers to report work disability and receive SSDI benefits. We may see this pattern continue in coming years as younger generations of veterans get older and experience medical conditions and other problems that challenge their ability to work. The existence of these trends among older veterans but not among their nonveteran peers suggests that older veterans are facing increasing challenges in the labor market. Further research is needed to determine whether these challenges are primarily related to health, a growing skills gap, or poorly-aligned incentives.

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