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Abstract

Background: Many dynamics in the relationship among military service-related disabilities, health care benefits, mental health disorders, and post-deployment homelessness among US Veterans are not well understood.

Objectives: Determine whether Veterans with a disability-related discharge from military service are at higher risk for homelessness, whether Veterans Health Administration (VHA) service-connected disability benefits mitigate that risk, and whether risks associated with discharge type, service-connected disability, or the interaction between them vary as a function of mental health disorders.

Methods: Retrospective cohort study of 364,997 Veterans with a disability-related or routine discharge and initial VHA encounter between 2005 and 2013. Logistic regression and survival analyses were used to estimate homelessness risk as a function of discharge status, mental health disorders, and receipt of VHA disability benefits.

Results: Disability-discharged Veterans had higher rates of homelessness compared to routine discharges (15.1 verses 9.1 per 1000 person-years at risk). At the time of the first VHA encounter, mental health disorders were associated with differentially greater risk for homelessness among Veterans with a disability discharge relative to those with a routine discharge. During the first year of VHA service usage, higher levels of disability benefits were protective against homelessness among routinely-discharged Veterans, but not among disability-discharged Veterans. By 5-years, disability discharge was a risk factor for homelessness (AOR = 1.30).

Conclusions: In the long-term, disability discharge is an independent risk factor for homelessness. While VHA disability benefits help mitigate homelessness risk among routinely-discharged Veterans during the early reintegration period, they may not offer sufficient protection for disability-discharged Veterans.

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1. Introduction

The recent wars in Afghanistan (Operation Enduring Freedom) and in Iraq (Operations Iraqi Freedom and New Dawn) (OEF/OIF) have collectively been referred to as the “wars of disabilities”, as many military service members have returned with serious physical injuries, including amputations, burns, and traumatic brain injuries, as well as disabling psychiatric conditions such as PTSD. Physical injuries or mental or behavioral conditions that render a service member unable to return to full duty are termed “unfitting conditions” by the Department of Defense, which issues a disability discharge, also known as a medical discharge, in such cases. Nearly 10% of the more than two million military service
members deployed as part of these conflicts have been discharged from service due to disabilities. Many of these have been subsequently approved, as Veterans, for a service-connected disability rating through the US Department of Veterans Affairs (VA). Many dynamics included in the relationship among disabilities, VA health care benefits, mental health disorders, and homelessness among Veterans remain poorly understood. Coping with disabilities is one of many potential challenges OEF/OIF Veterans face when transitioning back into civilian life. When exacerbated by further social, economic, or health-related factors, such challenges can increase vulnerability for extreme outcomes such as homelessness. Evidence indicates that disability, especially when it involves behavioral health, increases the risk for homelessness among OEF/OIF Veterans, as it does for Veterans more generally. Veterans (compared to non-Veterans) are at higher risk for homelessness and Veterans who are homeless have higher rates of disability than their non-Veteran counterparts.

Service-connected disability benefits are designed to mitigate such risks, but little research has examined the protective effect of these benefits specifically among Veterans who were discharged due to disability. The VA determines service-connected disability ratings based on pre-set levels or percentage of benefit coverage to which Veterans are entitled due to having particular disabling conditions related to their military service. The VA Office of the Inspector General reported that 51–62% of homeless Veterans received compensation for service-connected disabilities, compared to 35–40% of non-homeless Veterans. This same study also noted that 46–59% of homeless Veterans were receiving disability payments before the first episode of homelessness, suggesting that disability may be a risk factor for homelessness even when Veterans were receiving financial compensation and other supports for their disability. Blackstock and colleagues also reported elevated risk for homelessness among Veterans with 30–100% service-connected disability, as compared to Veterans with no service-connected disability. However, Edens and colleagues, in an analysis of Veterans who received VA mental health services, reported findings contrary to those above, indicating that, compared to Veterans with no service-connected disability, risk for homelessness was 66% lower among Veterans with service-connected disability rated at 50–100%, and 45% lower among Veterans with service-connected disability rated lower than 50%. Since level of service-connected disability tends to increase over time, discrepant findings regarding its effect on homelessness may be attributable to differences in measurement timing.

Several countervailing dynamics are potentially at work here. First, evidence suggests that disability is associated with increased risk for homelessness. Second, the benefits that are tied to receiving a VA disability rating may mitigate risk associated with disability to the extent that having a disability rating may even be a protective factor against experiencing homelessness. The most obvious mechanism for disability benefits taking on this role would be from the monetary income that is associated with a disability rating, as this would provide the Veteran with the economic means to maintain stable housing and rehabilitative services. In these respects, acquiring a VA disability rating could be a significant determining factor as to whether Veterans reenter civilian life with more fully established supports. This may be of particular importance for Veterans discharged due to disability. Finally, as mental health disorders are related to disability status, level of service-connected disability, and homelessness, their role in these dynamics is an important consideration. Thus, research that accounts for the time-dependent nature of service-connected disability benefits can more precisely examine the dynamics between disability discharge, disability rating, and mental health disorders on risk for post-deployment homelessness. Accordingly, we hypothesize that those with a disability discharge would be at higher risk in the long run due to difficulties transitioning successfully into civilian life, and that mental health disorders would heighten risk, particularly among disability-discharged Veterans. Additionally, we hypothesize that increased levels of service-connected disability benefits would moderate the relationship between disability discharge and homelessness, with lower risk for homelessness among those with a higher degree of service-connected disability benefits. Therefore, the purpose of this study was to assess the extent to which 1) a disability discharge impacts the post-deployment risk for experiencing homelessness among OEF/OIF Veterans as compared to those with a routine or normal discharge from the military; 2) whether subsequently receiving a service-connected disability benefit rating mitigates this risk; and 3) whether the risks associated with discharge type, service-connected disability, or the interaction between them vary as a function of mental health disorders. A better understanding of the associations among these factors will provide actionable knowledge and inform targeted homelessness prevention efforts.

2. Methods

We employed a retrospective cohort design using 10 years of administrative data from the Veterans Health Administration (VHA). This study was reviewed and approved by the Research and Development Committee of the VA Salt Lake City Health Care System, and the Institutional Review Board (IRB) of the University of Utah School of Medicine.

2.1. Sample

Records for active duty Veterans who were discharged from the military following service in OEF/OIF deployments as of December 2011 and who had an initial VHA encounter between fiscal years (FY) 2005 and 2013 were obtained from an official OEF/OIF roster file. The roster file contained several demographic and military service characteristic variables, including age, sex, marital status, race/ethnicity, education, type of discharge from the military, branch of service, and rank. Records from the roster file from active duty Veterans with either a “routine” or “disability” discharge from the military were retained and matched to a nationwide VHA clinical database. VHA clinical data encompassed all encounters with VA medical facilities between FY 2005 and 2013. Clinical data included administrative evidence of homelessness, level of VHA service-connectedness at each encounter, and clinical diagnoses. VHA records were included for Veterans from the roster file who had at least one visit at a VHA facility following their last deployment. Administrative follow-up began on the date of first VHA encounter and ended at the close of FY 2013 or after 5 years of follow-up. Death records were obtained from the VHA Vital Status file for each Veteran and similarly matched to the working data file using a scrambled social security number.

2.2. Homelessness designation

Homelessness was identified using administrative indicators consistent with previous VHA research, including a primary ICD-9-CM code of V60.0 (lack of housing) or clinic stop codes indicating receipt of a specific service for homeless Veterans in VHA medical facilities at any time during the follow-up period including: 522 (Department of Housing and Urban Development: VA Shared Housing (HUD-VASH), 528 (Telephone/Homeless Mentally Ill (HMI)), 530 (Telephone/HUD-VASH), and 590 (Community outreach to homeless Veterans by staff).
Discharge discharge type

Discharge type categories (routine and disability) were based on Interservice Separation Code (ISC) classifications. ISCs are used by each branch of the military to indicate circumstances related to military discharge and are assigned to active duty service members upon discharge from the military. In the case of disability discharge, ISCs relate directly to the result of determinations by Department of Defense medical and physical evaluation boards. If the initial medical board determines that the service member has a disqualifying condition or one that significantly interferes with their ability to perform their occupational duties, the service member undergoes a separate physical evaluation. If deemed unfit for duty by the physical evaluation board, the service member receives a disability discharge. If deemed fit, the service member is returned to duty.

A disability discharge from the Department of Defense does not necessarily qualify the service member for VA service-connected disability, as VA conducts a separate compensation evaluation, as explained in the next subsection. The following specific ISCs comprised the disability category: 1) Disability, severance pay, 2) Permanent disability retirement, 3) Temporary disability retirement, and 4) Disability, no condition existing prior to service, no severance pay. The ISCs for routine discharges are “expiration of term of service” and “retirement.”

2.4. Service-connected disability rating

Service-connected disability benefits provide a monetary benefit to Veterans who are disabled by injuries or diseases that were incurred or worsened during their military service. Service-connected disability ratings are determined by Veterans Benefit Administration evaluators, and ratings and their corresponding payments are commensurate with the severity of the disability. It is common for service members who were routinely discharged from the military to receive some level of service-connected disability benefit rating following discharge, as not all disabling conditions incurred or aggravated during military service are severe enough to render the service member unfit for duty. Further, certain disabling conditions may have a delayed presentation and only manifest in the post-discharge period.

VA may record the presence of disabilities that are not deemed to have been caused or worsened by military service; however, non-service-connected disabilities are not eligible for this type of compensation. Notably, substance use disorders are generally only eligible for service-connected status if they are considered to have developed secondary to a separate service-connected condition, such as PTSD.

As level of service-connected disability benefit corresponds to and can vary with each VHA encounter on file, these ratings were extracted to create a time-varying indicator of level of service-connectedness, where the value corresponding to an encounter reflects the level of benefit the Veteran was receiving in the period preceding and up to the time of that encounter. Values for service-connected disability benefit rating in the administrative database were represented in the following levels: Not service-connected, less than 10%, 10–19%, 20–29%, 30–39%, 40–49%, and 50–100%. For interpretability and comparability to previous VA research, these levels were re-coded into the following categories: No service-connected disability, <50% (low), service-connected disability, and 50–100% (high) service-connected disability.

2.5. Mental health/substance use disorders indicator

A time-varying mental health/substance use disorders indicator was computed using primary ICD-9-CM codes recorded during outpatient and inpatient encounters. Diagnoses of mental health/substance use disorders were identified using the Healthcare Utilization and Costs Project Clinical Classification Software (HCUP-CCS), classification of ‘Mental Illness’, which includes ICD-9-CM codes relating to psychiatric and substance use disorders. For each Veteran, this binary indicator was set to ‘negative’ for all encounters that were recorded prior to an initial mental health/substance use disorder. Following a mental health/substance use disorder, the indicator was set to ‘positive’, and remained positive for the duration of study follow-up.

2.6. Data analysis

Descriptive statistics for each study-related variable were computed and stratified by disability or routine discharge status. Logistic regression and counting process extended Cox models were used to evaluate the relationship between the event of homelessness and 1) military discharge type, 2) service-connected disability, 3) mental health disorders, and 4) the interactions among them, controlling for demographic characteristics (age, sex, marital status [never, married, divorced, other], race/ethnicity [Black, White, Hispanic, Other, Unknown], education [high school, beyond high school]), and military service characteristics (rank [officer/warrant, enlisted], and branch of service [Army, Navy/Coast Guard, Air Force, Marines]). Level of service-connected disability and mental health disorders were included as time-varying covariates due to the potential for change in the percentage of coverage and diagnostic status over the course of follow-up. Cases were censored following the completion of 5 years of administrative follow-up, or at death. In order to evaluate main effects in the presence of significant interactions, models were computed first without the interaction terms, and interaction terms were included in subsequent models. Odds and hazards ratios were computed for logistic and Cox models, respectively, along with their 95% confidence intervals (CI).

Prior to analysis, the Cox model proportional hazards assumption was evaluated by examining plotted Schoenfeld residuals. Hazards for several predictors were found to vary over the follow-up period, violating this assumption. One approach to addressing such a violation and accurately assessing varying hazards over time is to partition time into segments or intervals over which hazards are determined to be proportional and run a separate analysis for each. Therefore, separate models were fit for each of three segments or intervals of the follow-up period: 1) first day of initial VHA encounter, 2) initial VHA encounter through 1 year, and 3) 1 year through 5 years, with each segment including only clinical data corresponding to encounters that occurred during that time period. Because the first segment only included one observation and was therefore cross-sectional in nature, logistic regression was used model risk for homelessness, while Cox regression was used to model risk for homelessness in the second and third segments. The three-way interaction among military discharge type, service-connected disability, and mental health disorders was not significant in models for any time interval and is not presented in the results. Two-way interaction terms that were statistically significant in any of the three time intervals were retained in all models to allow for comparison of effects across models for different time intervals. Main effects models were also presented for all time periods as no interaction terms were statistically significant in the 1-to-5 year model.

Follow-up tests of significant interactions were conducted using
general linear hypothesis testing. Results of final statistical models for each time period were used to compute marginal effects which were expressed as the odds and hazards for homelessness for a typical case using mean and modal covariate values, and varied values for discharge type, mental health status, and service-connected disability benefit level. This resulted in a set of six groups based on the combinations of levels of discharge type and service-connected disability benefit level, and four groups based on the combinations of levels of discharge type and mental health status. Risks in each group were then directly compared to the risk in a reference group (routine discharge, not service-connected; routine discharge, no mental health disorder, respectively) in order to arrive at risk ratios. These ratios were then plotted, allowing for direct visual comparison of risks between groups. Analyses were conducted using the R environment for statistical computing for direct visual comparison of risks between groups. Analyses were conducted using the R environment for statistical computing.

### 3. Results

Of a total of 449,329 active duty Veterans on the OEF/OIF roster, 364,997 (81.2%) were discharged from the military under routine or disability discharge categories. Table 1 presents the demographic characteristics of the sample. Overall, 11.9% (n = 43,505) of Veterans in the sample separated due to disability (11.6% of men; 14.2% of women). There were also differences in level of service-connected disability benefit rating as a function of discharge type. Using the maximum level of service-connected disability rating for each Veteran, 37.9% of Veterans were not service-connected (41.4% among routine separators versus 11.5% among disability separators), 30.0% had a low service-connected disability benefit rating (30.9% among routine separators versus 23.8% among disability separators), and 32.0% had a high service-connected disability benefit rating (27.6% among routine separators versus 64.7% among disability separators).

#### 3.1. Rates of homelessness among Veterans with a routine or disability discharge

A total of 14,170 Veterans became homeless during the follow-up period (3.9%). Among these, the initial administrative evidence of homelessness was present on the date of first VHA encounter for 1463 (10.3%), between the initial visit and the end of the first year of service usage for 3447 (24.3%), and between the end of the first year through the 5th year for 9260 (65.3%) Veterans. The overall crude rate of homelessness was 9.8 individuals per 1000 person-years at risk (Table 2). Among Veterans with routine discharges, 3.6% became homeless with a crude rate of 9.1 individuals per 1000 person-years at risk. Among Veterans who were discharged due to a disability, 6.2% became homeless with a crude rate of 15.0 individuals per 1000 person-years at risk.

#### 3.2. Service-connected disability benefits as a moderator of the relationship between discharge type and homelessness

For the first time interval (the initial VHA encounter after last date of last deployment), there was a significant interaction between discharge type and level of service-connected disability (see Table 3). Results of follow-up linear hypothesis tests showed that among routinely-discharged Veterans, only a low level of service-connected disability benefits had a protective effect (p = 0.021).

### Table 1

Demographic and military service characteristics of U.S. Veterans with routine and disability discharges from military service (FY 2005–2013).

<table>
<thead>
<tr>
<th>% (N) or M (SD)</th>
<th>Disability (N = 43,505)</th>
<th>Test of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>38.4 (8.8)</td>
<td>35.9 (6.0)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>33,328 (10.3%)</td>
<td>5520 (12.7%)</td>
</tr>
<tr>
<td>Male</td>
<td>288,254 (89.7%)</td>
<td>37,985 (87.3%)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>123,562 (38.4%)</td>
<td>20,233 (45.6%)</td>
</tr>
<tr>
<td>Black</td>
<td>26,405 (8.2%)</td>
<td>3464 (8.0%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>36,327 (11.3%)</td>
<td>3964 (9.1%)</td>
</tr>
<tr>
<td>Other</td>
<td>18,914 (5.9%)</td>
<td>1935 (4.5%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>116,334 (36.2%)</td>
<td>13,909 (32.0%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or Equivalent</td>
<td>265,443 (83.8%)</td>
<td>38,773 (90.4%)</td>
</tr>
<tr>
<td>Beyond High School</td>
<td>51,266 (16.2%)</td>
<td>4095 (9.6%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>175,925 (54.7%)</td>
<td>22,420 (51.5%)</td>
</tr>
<tr>
<td>Married</td>
<td>135,527 (42.2%)</td>
<td>19,560 (45.0%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>95,936 (3.0%)</td>
<td>1417 (3.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>504 (0.2%)</td>
<td>108 (0.2%)</td>
</tr>
<tr>
<td>Branch of Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Army</td>
<td>134,160 (41.7%)</td>
<td>25,236 (67.2%)</td>
</tr>
<tr>
<td>Navy/Coast Guard</td>
<td>62,931 (19.6%)</td>
<td>3679 (8.5%)</td>
</tr>
<tr>
<td>Air Force</td>
<td>50,573 (15.7%)</td>
<td>5907 (12.7%)</td>
</tr>
<tr>
<td>Marines</td>
<td>73,828 (23.0%)</td>
<td>5083 (11.7%)</td>
</tr>
<tr>
<td>Rank</td>
<td></td>
<td></td>
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<tr>
<td>Enlisted</td>
<td>298,839 (93.0%)</td>
<td>42,242 (97.1%)</td>
</tr>
<tr>
<td>Officer/Warrant</td>
<td>22,653 (7.0%)</td>
<td>1263 (2.9%)</td>
</tr>
<tr>
<td>Mental Health Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>151,457 (47.1%)</td>
<td>32,099 (73.8%)</td>
</tr>
<tr>
<td>Max Service-connected Disability Benefit Rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Service-connected</td>
<td>133,320 (41.4%)</td>
<td>4992 (11.5%)</td>
</tr>
<tr>
<td>Low</td>
<td>99,409 (30.9%)</td>
<td>10,368 (23.8%)</td>
</tr>
<tr>
<td>High</td>
<td>88,763 (27.6%)</td>
<td>28,145 (64.7%)</td>
</tr>
</tbody>
</table>

Notes: Demographic and military service characteristics were recorded at baseline. Service-connected disability rating and mental health disorder values represent the maximum value recorded at any point during the 5-year follow up (where No = Yes).
against homelessness as compared to those who were not service-connected (see left side of Fig. 1A). Conversely, among disability-discharged Veterans, neither low nor high levels of service-connected disability benefits were protective against homelessness, and moreover, those with a high level of service-connected disability benefit were at significantly higher risk for homelessness ($p = 0.033$) than those who were not service-connected (see right side of Fig. 1A).

In the second time interval (date of first VHA encounter through 1 year), there was again an interaction between discharge type and level of service-connected disability. Similarly to the first time period results, follow-up linear hypothesis tests showed that among routinely-discharged Veterans, risk for homelessness was significantly higher among those who did not have a service-connected disability benefit rating as compared to those who did (not service-connected vs. low or high, both $p < 0.001$; see left side of Fig. 1B), whereas neither level of service-connected disability benefits was significantly protective against homelessness among those with a disability discharge (see right side of Fig. 1B).

The final model for the third time interval (1 year through 5 years) only included significant main effects for discharge type and service-connected disability (see Fig. 1C). Disability discharge was associated with 30% higher risk for homelessness relative to routine discharge. Relative to no service-connected disability, low service-connected disability was associated with 26% lower risk for homelessness, and high service-connected disability was associated with 30% lower risk for homelessness as compared to Veterans who were not service-connected.

### 3.3. Mental health status as a moderator of the relationship between discharge type and homelessness

The presence of a diagnosed mental health disorder moderated the relationship between discharge type and homelessness in the first time interval only (see Table 3). Results of follow-up linear hypothesis tests indicated that among those with a disability discharge, risk for homelessness was significantly higher among Veterans who had a mental health disorder as compared to those who did not ($p < 0.001$; see right side of Fig. 1D), whereas risk for homelessness among those with a routine discharge did not significantly vary by mental health status (see left side of Fig. 1D). In subsequent time intervals, mental health disorders were a significant risk factor for homelessness as a main effect, regardless of discharge type.

### 4. Discussion

Over the course of follow-up, disability-discharged Veterans had rates of homelessness that were more than 60% higher than their routinely discharged counterparts (15.0 vs. 9.1 individuals per 1000 person-years at risk). However, the effect of discharge type on homelessness varied as a function of service-connected disability benefits, mental health disorders, and time. Overall, the risk for...
homelessness associated with disability discharge increased over time to where, after the first year, those Veterans with a disability discharge were at 30% higher risk for homelessness relative to those with a routine discharge. While disability appeared protective against homelessness initially, that protection eroded over the course of the 5-year study period as more long-term issues, likely related to declining economic, family and social supports manifested themselves in higher risk for homelessness. Given that risk for homelessness increases over time, our results suggest that the specific risk for homelessness associated with disability likely will further accelerate over the Veteran’s life course.

Service-connected disability rating, and its concomitant benefits, emerged over time as a protective factor against homelessness, regardless of disability status upon discharge. Here the financial and healthcare resources afforded by a disability rating also translated into a form of housing support. Assuming that virtually all Veterans with disability discharges would be eligible for some level of VA disability rating, being in this subgroup and not having such a rating (1.4% of the overall study group) would largely be due to either individual reticence to apply or administrative obstacles to obtaining such a rating. In either case, this group could be readily identified as a high-risk group and be provided with facilitative services for obtaining benefits and preventing homelessness.

While mental health disorders were associated with increased risk for homelessness among Veterans with both discharge types after their first VA encounter, the differential risk conferred by mental health disorders among disability-discharged Veterans on the first day of VHA usage is notable, and indicates that early mental health diagnoses among Veterans with a disability discharge may be an important marker for reintegration challenges. This finding warrants additional investigation, in particular, research that takes into consideration the specific nature of the service-ending disability. Disability-discharged Veterans have high rates of mental health diagnoses in the post-deployment period, in part likely due to service-ending pre-discharge mental health conditions that continue on following deployment. Mental health disabilities are related to a greater degree of loss of income than physical disability, and may have far-reaching adverse psychosocial effects. Thus, markers of mental health risks that precede VHA usage may improve targeted prevention efforts.

Relatedly, future research utilizing data that indicates the specific nature of disabling conditions leading to discharge would allow for the evaluation of the associations between combat injuries and long-term physical and mental health outcomes. These follow-up studies would shed further light on pathways to homelessness among specific disability discharge subtypes. Another point of interest for future research is the high risk for homelessness among Veterans who are discharged under routine conditions, and do not receive service-connected disability benefits, including examination of the role of non-service-connected disabilities.

We acknowledge several limitations. First, the results of our study are based on Veterans seeking treatment at VHA facilities, and not all Veterans choose to use VHA services. However, during the period of follow-up for the present study, 63–65% of VHA-enrolled Veterans used services each year. Further, several characteristics common among the homeless population are associated with a lower likelihood of dual and non-VHA service use (lower levels of income and education, lack of alternative health insurance), suggesting that homeless Veterans are even more likely to be represented in our sample. Nonetheless, it is unclear how these results might relate to Veterans who do not use VHA care. Next, the detection of Veteran homelessness can only be inferred...
from administrative codes and indicators may be delayed or incomplete. Rates of homelessness among Veterans who separate due to disability may be biased upward as a result of ascertainment bias due to more frequent access of VHA care. In addition, while service-connected disability benefits represent the primary form of VA disability compensation, some Veterans may access other types of benefits (such as social security disability) that are not included in our data set. Lastly, these data do not provide information on certain homelessness-related pre- and post-military circumstances, such as income level and employment.

5. Public health implications

Results from this study have important VA policy and practice implications for the prevention of homelessness among Veterans discharged from service due to disabilities. Our results indicate that during the five years subsequent to discharge from military service, disability-discharged Veterans experienced two concurrent shifts. The first is increasing risk for homelessness over time. The second is a shift from service-connected disability offering no protection against homelessness in the early period, to service-connected disability benefits being a strong buffer against homelessness. Due to their disabling conditions, these Veterans are more likely to experience higher symptom severity and functional impairment. Thus, disability-discharged Veterans may represent a subpopulation among the homeless that is even more susceptible to homelessness-related adverse public health outcomes such as chronic health conditions and death. Furthermore, if the observed trend of risk for homelessness conferred by disability discharge continues to increase over time, these Veterans will likely contribute disproportionately to the demand for long-term care both at VA and non-VA facilities as they age. A key means by which to mitigate this potential is that targeted prevention efforts be deployed among disability-discharged Veterans, including more intensive and sustained case management, with particular foci on case management services and securing disability benefits that are sustained beyond their initial period of VA care.

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Additional contributions

We thank our team members for their assistance with this project: Deborah Hofmann, Tao He, and Steve Pickard (IDEAS Center). No compensation was received by any of the persons mentioned. Resources and administrative support were provided by the IDEAS Center at VA Salt Lake City Health Care System.

Author contributions

Ms. Brignone and Dr. Fargo had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Fargo, Brignone, Metraux, Peterson, Gundlapalli.

Acquisition, analysis, or interpretation of data: Fargo, Brignone, Carter, Gundlapalli, Redd, Barrett.

Drafting of the manuscript: Fargo, Brignone, Metraux, Peterson, Gundlapalli, Barrett.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Fargo, Brignone, Barrett.

Obtaining funding: Gundlapalli, Carter.

Administrative, technical, or material support: Carter, Gundlapalli, Samore.

Study supervision: Gundlapalli.

Disclaimer

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References


