

**Title:** Changes in the Health and Broader Well-Being of U.S. Veterans in the First Three Years after Leaving Military Service: Overall Trends and Group Differences

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## Abstract

**Objectives.** To examine whether the U.S. military veteran population experiences improvements or declines in their health and broader well-being during the first three years after leaving military service and to document differences based on gender, military rank, and warzone deployment history.

**Methods.** A population-based sample of 3,733 newly separated veterans completed a survey within three months of separation (Fall, 2016), followed by five additional surveys at six-month intervals. Weighted multilevel logistic regressions were conducted to examine changes in the proportion of veterans reporting good health and broader well-being over time.

**Results.** Most aspects of veterans' health and broader well-being worsened over time, with a noteworthy increase in reporting of mental health conditions and a decline in veterans' community involvement. Declines in the proportion of veterans reporting good health and well-being were most notable for women, with smaller differences observed for other subgroups.

**Conclusions.** The finding that veterans experienced worsening health and broader well-being over time highlights the need for enhanced prevention and early intervention efforts to mitigate these declines. Findings also point to the importance of attending to the unique readjustment concerns of female veterans and other at-risk subgroups.

**Keywords:** veterans; health; well-being; women; readjustment

### **Highlights**

- The proportion of veterans reporting poor outcomes increased over time.
- Female veterans were at greater risk for declines in health and broader well-being.
- Results highlight the value of bolstering support for new military veterans.
- Prevention and intervention efforts should target at-risk veteran subgroups.

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Leaving Military Service: Overall Trends and Group Differences

**Introduction**

Given that more than 200,000 individuals leave the United States (U.S.) military service every year (U.S. Department of Veterans Affairs, 2018), understanding how these individuals fare as they navigate the transition to civilian life is an important public health issue. Although concern has been raised about the ability of military veterans to successfully adapt to civilian life (e.g., Mobbs & Bonanno, 2018), no study has yet to examine how the health and broader well-being of the U.S. veteran population changes in the first several years after they leave military service. This is problematic, as knowledge regarding when health concerns and other readjustment challenges are most likely to emerge is needed to better inform the timing and focus of intervention efforts (Vogt et al., 2018). In addition, although scholars have theorized that many veterans may struggle to find their footing both vocationally (e.g., finding satisfying work) and socially (e.g., finding their place within their civilian communities) (Mobbs & Bonanno, 2018; Castro & Dursun, 2019; Cooper et al., 2016; Ahern et al., 2015), the majority of research on veterans' post-military readjustment has been limited to documenting the prevalence of health conditions rather than examining broader well-being outcomes (Eichler & Smith-Evans, 2018; Vogt et al., 2018). This is a substantial gap given the growing call for health promotion efforts to attend to the whole person and to consider both objective and subjective indicators of everyday life functioning in addition to indicators of disease and dysfunction (Bokhour et al., 2020; Lilienfeld, 2019).

As with other developmental transitions, scholars have theorized that the initial separation period may be a particularly vulnerable time for veterans (e.g., Dabovich, Elliot,

McFarlane, 2019; Mobbs & Bonanno, 2018). Based on this expectation, one might anticipate that a larger proportion of veterans would report poor health and well-being near the time of separation than as they move further away from their time of military service and begin to acclimate to civilian life. Yet, several recent studies raise the prospect that risk for poor adjustment may actually increase rather than decrease over time. Indeed, a recent study revealed that the problem of veteran homelessness was not most salient at the time of separation, but instead peaked between 5 and 10 years after separation (Tsai et al., 2020). An additional study that examined the experiences of recently separated National Guard and Reservist members found that risk for mental health conditions and suicidality increased rather than decreased during the first two years following service (Wang et al., 2020).

Another important question regards whether some veteran groups may be more vulnerable to poor outcomes after they transition from military service and thus, require additional assistance with this transition process. Although studies have not yet examined subgroup differences in how the health and broader well-being of U.S. veterans changes in the first years after leaving military service, research that has examined veterans' longer-term outcomes suggests that individuals who identify as female, enlist in the military (vs. officers), and experience warzone deployments while in the military are more likely to experience health concerns and readjustment challenges when they leave military service (e.g., Vogt et al., 2017; Lapierre et al., 2007; Shen et al., 2012). For example, there is some evidence that women veterans have a greater likelihood of experiencing mental health problems such as depression, anxiety, and suicidal ideation and that the factors that contribute to the development of mental health conditions may differ for women and men (e.g., Denneson et al., 2020; Runnals et al., 2014). Those who enlist in the military (as opposed to commissioned officers) have also been

found to be more likely to experience mental health concerns and other readjustment challenges after service (e.g., Elnitsky, Blevins, et al., 2017; Pugh et al., 2018). Likewise, there is some evidence that individuals with a history of combat exposure are greater risk for poor outcomes after they leave service (e.g., Pietrzak et al., 2013), likely because these individuals may experience mental and physical health problems such as post-traumatic stress disorder (PTSD) and depression, which are known to be related to worse reintegration outcomes (Hawkins et al., 2015; Smith et al., 2017).

To address these identified gaps in the literature, the current study examined changes in the health and broader well-being of the U.S. veteran population during the first three years following separation from service. This study built on a prior examination of the health and broader well-being of these veterans during the first year after separation, which revealed that while many veterans reported relatively good initial vocational and social well-being, a substantial minority of veterans reported health concerns that would benefit from treatment (Vogt et al., 2020).

The primary aim of the current research was to evaluate whether: (1) initial readjustment challenges experienced by the veteran population are gradually resolved over time, such that the proportion of veterans reporting poor health and broader well-being decreases during the three years following separation, or (2) there is an increase in the proportion of veterans reporting poor health and well-being over time, suggesting a delay in the development of readjustment challenges for many veterans. Given conflicting evidence in the literature, we had no specific hypotheses regarding whether we would observe increases or declines in the proportion of veterans reporting poor health and well-being. A second aim for the study was to examine whether there were differences in the proportions of women, former enlisted personnel, and

warzone-deployed veterans who report poor health and broader well-being over time, as compared to their counterparts. Based on evidence indicating that women, former enlisted personnel, and warzone deployed veterans may experience poorer post-military outcomes than their male, officer, and non-deployed counterparts, we hypothesized that there would be greater increases (or smaller declines) in the proportion of individuals reporting poor health and broader well-being over the study period.

### **Methods**

This prospective cohort study drew from a roster of all separating U.S. service members identified through the Veterans Affairs (VA)/Department of Defense Identity Repository. The sampling frame was limited to veterans who lived in the continental U.S. and had separated from Active Component service or activated Reservist status within the last 90 days. After an initial test of the survey and recruitment method with 2,000 randomly selected veterans, all veterans who met inclusion criteria were invited to complete the study in the fall of 2016.

A modified Dillman outreach methodology was used, with multiple contacts by mail and an opportunity for veterans to opt out of additional contacts (Dillman et al., 2011). Potential participants were provided a link to a website where they could complete the survey. Consistent with recommendations (Coughlin et al., 2011), all potential participants received a pre-incentive of \$5 cash, and those who completed surveys received an electronic gift card valued at \$20 at Time 1 (T1) with incentives increasing by \$5 at each of the subsequent timepoints. The initial survey was administered within approximately three months of separation in the fall of 2016, with five additional surveys administered approximately 6 months apart. The last survey was administered in the spring of 2019. To reduce the potential for biased reporting respondents were encouraged to report candidly, assured of confidentiality, and told that their responses would not

have implications for their access to VA resources. Institutional Review Board approval was obtained from VA Boston Healthcare System and the survey firm that administered the survey, and informed consent was obtained from participants. Additional details on the sampling, recruitment, and data collection strategy are provided in (Vogt et al., 2018).

### **Missing Data and Representativeness**

The goal for the current study was to produce findings that would be optimally representative of the larger population of newly separated veterans. Although we drew our sample from a population-based sampling frame it is possible that non-response at either the item or unit level could have biased results. To evaluate this possibility, we examined whether either type of missing data was a substantial problem for the study. Our examination of item-level missingness revealed very little missing data, aside from cases in which individuals were directed not to answer questions that were not relevant to them (e.g., questions about intimate relationship functioning for those who did not report being in a relationship). Specifically, item level missingness ranged from 0% to 0.24% for health and broader well-being measures. Thus, we determined that item non-response was not a substantial concern in this study, and it was not necessarily to adjust for this type of missingness in the current study.

Given that unit-level missingness, as reflected in differential participation or drop-out from the study, may also bias study findings we next compared how representative the 23% of veterans who elected to enroll in the study were relative to the larger population-based sampling frame from which the sample was drawn. These findings revealed that respondents were similar to the sampling frame on many characteristics (e.g., gender, race/ethnicity, branch of service), although lower enlisted service members were less likely to participate than officers. We also compared veterans who dropped out at each timepoint to those who did not drop out on a wide

variety of study variables (demographic, military, health, work and financial characteristics) that were assessed at T1. Few differences emerged for these comparisons with the exception that veterans who identified as warrant officers (compared to enlisted personnel), endorsed poorer initial financial status, reported lower education, and gave an initial mailing address that was not geocodable (“bad” addresses) were somewhat less likely to participate at later timepoints. However, meaningful differences did not emerge on other characteristics, including health measures.

Although unit-level missingness did not appear to introduce substantial bias on many participant characteristics, we developed non-response weights to address any bias that may have resulted from differential participation and drop-out. These weights, which were intended for use with the sample of veterans with completed all timepoints (N=3,733) and designed to produce findings that are optimally representative of the larger population from which the sample was drawn, were developed through a three-step process. We first derived an initial set of nonresponse bias weights based on veterans’ gender, rank/paygrade, and branch of military service as reported at T1. As described in Vogt and colleagues (2018), this procedure adequately adjusted for observed differences these three characteristics, as well as age differences. A second set of weights were then developed to adjust for differential drop-out at subsequent timepoints based on demographic, military, health, work and financial characteristics assessed at T1. These propensity-score weights were derived using logistic models that estimated the probability of a veteran responding at each timepoint based on their T1 characteristics (Chen et al., 2015). A final weight was created by ratio adjusting the Time 2 through Time 6 (T2-T6) propensity score weights to the original T1 weights. This combined weight was applied in all analyses except the computation of sample descriptives.

## Measures

For the purposes of this research, we assessed veterans' well-being with regard to health, vocational, and social domains using measures from the Well-Being Inventory. [Note that this measurement tool includes an additional work functioning item that was added at T2 and thus not included in analyses.] The Well-Being Inventory offers a multi-dimensional measurement approach that captures information on veterans' status, functioning, and satisfaction within each of these life domains (Vogt et al., 2019). "Status," as assessed in this measure, reflects objective circumstances within each life domain, including whether an individual reports any health conditions, is employed, and has social connections within their communities. "Functioning" reflects one's performance of key role functions within each life domain. For example, in the health domain, one's engagement in health risk and protective behaviors is assessed. "Satisfaction" reflects one's subjective perception of how well things are going in each life domain, including one's health, vocation, and social relationships.

Evidence for the Well-Being Inventory's reliability, validity, and sensitivity to change has been presented in prior research that used data from the current study sample, as well as another sample of post-9/11 veterans (Vogt et al., 2019). Status indicators are categorical, whereas both functioning and satisfaction items use a 5-point Likert-type response format that ranges from *never* to *most or all of the time* for functioning measures and *very dissatisfied* to *very satisfied* for satisfaction measures. To enhance the interpretability of descriptive results for functioning and satisfaction scales and following procedures used in previously published research using this measurement tool (Vogt et al., 2019), average item scores were computed for each individual, and scores were grouped into two categories: those in the highest third of the response continuum, corresponding to average responses of often or always functioning well or

being somewhat or very satisfied (scores ranging from 3.668 to 5) and those in the bottom two thirds of the response continuum, reflecting average responses of rarely to sometimes functioning well or not being satisfied on average (scores ranging from 1 to 3.667).

### **Statistical Analysis**

All analyses except sample descriptives applied non-response bias weights and were completed in Stata/IC, version 16.0 in 2020. We first calculated the proportion of veterans that endorsed each outcome across all timepoints. Next, we conducted multilevel logistic regressions to address study questions. This analytical procedure was chosen because it was able to account for the nested structure of the data (timepoints within individuals) and can be used with binary outcomes (Guo & Zhao, 2000). Two-level random slope logit models that used melogit were estimated. The level-1 variable was time, and each timepoint was assigned a value between 0 and 1. Level-2 (i.e. person-level) variables were gender, rank, and warzone deployment history. See supplemental Table 1 for example syntax. The number of veterans in the models ranged from 3,295 to 3,733, and the number of observations in the models ranged from 15,909 to 22,396 across analyses. As discussed previously, this variation was due mainly to the fact that not all variables were relevant for all individuals (e.g., single veterans did not complete the measure of intimate relationship functioning), as item-level missingness was minimal in this study.

The first set of analyses examined change in the predicted probability of endorsing each outcome across the three-year study period. For these and subsequent models, predicted probabilities were estimated using the margins postestimation command after melogit, which calculates change in the probability of the outcome (i.e., the mean response) over time. Both fixed and random effects from the multilevel models were used in this estimation procedure. These estimates can be interpreted as the increase/decrease in the predicted probability of the

outcome for a one unit increase in time, coded to correspond to the three-year study period. A second set of analyses examined subgroup differences in change in health and broader well-being over time. Each model (one for each subgroup variable) included time, the subgroup variable (e.g., gender), and a cross-level product term reflecting the difference in change over time for the subgroup variable (e.g., time\*gender). Margins postestimation commands, which included fixed and random effects, were estimated after *melogit*. Wald Tests were then used to evaluate whether subgroup differences in probabilities were statistically different at the .05 level. Note that T1 and T2 proportions for the full sample and subgroups have been reported in prior research (Vogt et al., 2020), albeit with a larger sample (all veterans who completed T1 and T2).

## **Results**

### **Sample Descriptives**

The majority of study participants were male (82%) and white (81%), with an average age of 33.65 ( $SD=9.35$ ) years at T1. Veterans served in all branches of service, with 75% identifying as enlisted (versus warrant/officers), 23% reporting that they had a combat arms (vs. support) role, and 69% reporting they had a warfare deployment. Veterans reported 1.77 ( $SD=2.03$ ) combat deployments and 10.71 years ( $SD=8.44$ ) of military service, on average.

### **Overall Change Over Time**

Tables 1 and 2 include results for the sample as a whole. As indicated in those tables, the proportion of veterans reporting poor health and broader well-being significantly increased on nearly all measures, as reflected by increases in the endorsement of health conditions, along with declines in the endorsement of higher levels of functioning and satisfaction over time. The largest changes were observed for health functioning, intimate relationship satisfaction, and community involvement. There was a significant increase in the probability of endorsing a

mental health condition (suggesting declining health), with the proportion of individuals endorsing depression, anxiety, and posttraumatic stress disorder (PTSD) all increasing over time. Reporting of physical health conditions remained relatively stable over time, with the exception of a small but significant decrease in the proportion of veterans reporting chronic pain and increase in endorsing a hearing condition or high cholesterol. The proportion of veterans endorsing both a mental and physical health condition also increased slightly but significantly over time. The only significant improvement in well-being was in the proportion of veterans who reported involvement in paid work.

### **Subgroup Analyses**

Tables 3 and 4 provide weighted proportions separately for key subgroups, whereas Tables 5 and 6 include information on overall changes in probability and subgroup differences in change over time.

**Gender.** There were significant differences between female and male veterans on a number of health, vocational, and social outcomes. The probability (pr) of endorsing a mental health condition increased more for female veterans than male veterans, with a greater increase in the proportion of women endorsing anxiety and depression over time than men. There was also a greater increase in the proportion of women reporting both physical conditions and comorbid physical and mental conditions over time as compared to men. In addition, there was a greater decline in the proportion of women reporting good health functioning, work functioning, relationship functioning, and relationship satisfaction. In addition, although the proportion of women who reported being satisfied with their work declined over time, this proportion increased slightly for men. The one area in which the proportion of male veterans reporting high

well-being declined significantly more than it did for female veterans was in community involvement.

**Rank.** There were significant differences in health, work, and broader social functioning outcomes for veterans who reported enlisting in the military as compared to former officers, such that the proportion of enlisted personnel who reported good functioning decreased more over time as compared to their officer counterparts. The proportion of officers who reported good health, work, and social functioning declined less than enlisted personnel over time. In addition, there were significant differences in the probability of endorsing anxiety, depression, and a hearing condition over time, with greater increases in reporting of these conditions among enlisted personnel as compared to officers.

**Deployment history.** Few differences were observed in change over time between warzone deployed and non-deployed veterans, with two exceptions. The probability of endorsing a mental health condition and reporting both a physical and mental health condition increased significantly more for non-deployed veterans compared to deployed veterans, and the probability of working for pay increased significantly more for non-deployed veterans compared to deployed veterans.

## **Discussion**

Understanding how the veteran population's health and broader well-being changes following separation from the military is critical to inform the timing and focus of prevention and intervention efforts of the more than 40,000 organizations that provide programs, services, and supports intended to assist veterans with this transition (Berglass & Harrel, 2012). In contrast with literature suggesting that the initial transition period may be most difficult for veterans (Mobbs & Bonanno, 2018), findings revealed a small but relatively consistent increase in the

proportion of U.S. veterans reporting poor health and broader well-being during the three-year period following separation from service. While many declines were not large, several were noteworthy, as they reflect factors that might be most expected to show the greatest improvement as veterans begin to acclimate to civilian life. These include the increasing proportion of veterans who reported mental health concerns, which was greater for female compared to male veterans, and the declining proportion of veterans reporting higher levels of community involvement, which decreased most notably among male veterans.

Why the veteran populations' health and broader well-being might worsen rather than improve on the whole as they move away from the initial transition period is unknown but could be caused by a number of factors. One contributor may be veterans' loss of resources when they leave military service, including easily accessible health care, a built-in social network, and for many veterans, employment that brings a strong sense of purpose and meaning (Elbogen et al., 2020). Although some veterans may quickly rebuild these resources in their civilian lives, others may struggle to do so, which could lead to increase in the proportion of veterans reporting poor health and broader well-being over time. This finding could also be influenced by the broader socio-cultural and political context, as there is some evidence that the U.S. population has experienced a slight downward trend in overall happiness since the early 1990s and many other indicators of well-being have shown slight declines over the last several decades (Marsden et al., 2020). Finally, the health burden reported by some veterans may contribute to an erosion in veterans' broader well-being over time, as research indicates that well-being in different life domains often intersect in important ways (Andersen & Fowers, 2020; Tsur et al., 2019). Although this question warrants additional consideration in future research, a preliminary examination of whether declines in vocational and social outcomes were reduced after

accounting for the impact of veterans' health status and functioning suggests that this is unlikely to be the primary contributor to the changes observed in this study (see Supplemental Table 2).

The most notable finding from our subgroup comparisons was that the proportion of women reporting poor health and broader well-being showed a greater increase than was observed for men. This is an important finding, as it highlights the need for more focused attention to the needs of recently separated women veterans. It also suggests a potential mechanism that may underlie another important finding from the broader veteran literature, which is that suicide rates decline for men but not women during the first three years post-separation (Bullman et al., 2015). Specifically, it may be that women's worsening health and broader well-being accounts for the finding that suicide rates do not substantially diminish for women as they leave service, a hypothesis that warrants further investigation in future research. The finding that women's health and broader well-being declined over the three-year period is especially interesting in light of the fact that few substantive differences were observed in the first year post-separation, aside from women's greater reporting of mental health conditions and slightly lower participation in paid work [Anonymous, 2020]. Together with those findings, the current investigation suggests that women's greater vulnerability to a range of negative health and broader well-being emerges over time. This finding may be due to a number of reasons, including the possibility that female veterans experience a less positive reception within their civilian communities than their male peers (Street et al., 2009), which takes a toll of their health and broader well-being over time. Indeed, despite acquiring more transferable skills during military service (Kleykamp, 2013), many female veterans report that civilian employees do not fully recognize or value their military experience or veteran status (Szelwach et al., 2011). This may also extend to others in their broader social communities, which may ultimately translate

into more negative readjustment outcomes (Shephard et al., 2021). These disparities may also be influenced by women's higher risk for interpersonal stress and trauma across the life course, as well as the mental health consequences associated with these experiences (Street et al., 2009; Zinzow et al., 2007). In turn, women veterans may have less support to draw from as they grapple with mental health challenges that result from or are exacerbated by their military experiences (Galovski et al., 2021), which may impede their recovery from these experiences.

Another important finding from this study was that the proportion of former enlisted personnel reporting good functioning in health and other life domains declined more than for their officer peers. Given that officers begin their military careers with a college degree and the associated life experiences that come with attending college, it is possible that they may be better equipped on average to manage the challenges of transition or have greater access to resources that facilitate a successful readjustment than former enlisted personnel. Interestingly, we found few differences in the probability of reporting poor health and well-being over time for warzone deployed and non-deployed veterans. This finding builds on our prior examination of differences in the health and well-being of these subgroups in the first year after leaving service (Vogt et al., 2020), which revealed similar outcomes aside from deployed veterans' greater likelihood of reporting health concerns. Together, these findings reinforce the conclusion that the stereotype that all veterans who are exposed to warfare are "damaged" by these experiences is not accurate.

#### Implications for Prevention and Early Intervention

Study findings have a number of implications for prevention and early intervention. Most importantly, they support the need to bolster interventions to prevent declines in veterans' health and broader well-being after they leave military service. Findings also support the value of targeting prevention and intervention programs to the unique needs of female veterans. Given

that prior research indicates that existing veteran support services do not always adequately meet the needs of female veterans (Kehle-Forbes et al., 2017; Kimerling et al., 2015), this may require modifying existing programs or developing new programs rather than increasing women's engagement in existing programs. In addition, the finding that readjustment concerns varied across the veteran subgroups examined in this study support the importance of providing tailored intervention strategies to newly separated veterans rather than implementing "one size fits all" solutions. As noted by Castro and Dursun (2019), this will require the application of valid assessment strategies to identify areas in which veterans would benefit most from assistance. Ideally, these assessments should target aspects of veterans' post-military health and broader well-being that are aligned with the types of programs, services, and supports offered by veteran programs. For example, these efforts could draw from a tool like the one used in this study (Vogt et al., 2019), which was designed to address practical aspects of veterans' life experiences with regard to their health, vocational, financial, and social circumstances. Findings can also be applied to better prioritize veteran support services to those issues that are of greatest concern to veterans and highlight the need for practitioners, both within the VA and in other healthcare settings, to have discussions with their veteran patients about broader aspects of veterans' lives beyond their health (Kröger et al., 2015; Cohen, 2004).

#### Limitations and Future Directions

There are a number of important directions for future research, several of which reflect limitations of the study. The current study focused on group-level change in health and broader well-being, with the goal of informing decision-making regarding the provision of resources for the larger veteran population. There would also be value in examining individual differences in trajectories of change over time, as this knowledge could be useful in identifying the extent to

which changes in health and well-being vary across individuals. It will also be important to provide a more in-depth exploration of the nature of change for each of these outcomes.

Although we determined that linear change models were sufficient to meet the aims of the current study, some outcomes may be better represented with quadratic growth parameters that account for accelerated growth or decline between different timepoints, which would provide additional insight into the ideal timing of intervention efforts.

Future research should also examine changes in health and broader well-being beyond the first three years post-separation, as well as how veterans' health and broader well-being intersects, as research suggests that there are likely to be reciprocal relationships among these factors (e.g., Andersen & Fowers, 2020; Tsur, Stein, Levin et al., 2019). In addition, while the current study examined differences in change over time for three key subgroups, it could be beneficial to examine the extent to which membership in multiple high-risk subgroups (e.g., female enlisted personnel) impacts outcomes in future studies that are sufficiently powered to allow such an examination. Likewise, it will be important to examine other factors that may impact change in health and broader well-being outcomes after service, including age at the time of separation, the nature of the separation (e.g., honorable discharge vs. other than honorable discharge), and time in service. In addition, it could be useful to examine how veterans' self-reports compare with other sources of information given that some veterans may over- or under-report their health and broader well-being. Finally, while the current study was limited to military veterans in order to produce findings that could inform the provision of veteran-focused programs, future research would benefit from comparing the health and broader well-being of veterans to non-veterans to shed light on which concerns are unique to veterans and which are common within the population more broadly.

## **Conclusion**

To our knowledge, this is the first study to examine changes in the U.S. veteran population's health and broader well-being during the first three years after they leave military service. In contrast with the expectation that veterans may be most vulnerable to poor health and broader well-being during their initial transition from military service, study findings revealed that the proportion of veterans reporting poor outcomes increased rather than declined as veterans moved further away from their time of military service. Findings also indicated that risk for poor outcomes increased more for female veterans than for male veterans and that the proportion of former enlisted personnel who reported good functioning declined more than for those who served as officers. These results highlight the importance of bolstering support for veterans to help set them on a path to more successful post-military lives. Findings also highlight the need to tailor prevention and intervention efforts to the unique concerns of several at-risk veteran subgroups and especially female veterans.

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## Tables

Table 1. Overall proportions and change in health and broader well-being

Outcome	Frequency Statistics						Multilevel Logistic Models	
	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	Change in probability of the outcome	95% CI
<b>Health-Related Well-Being</b>								
At least one Physical Health Condition	53.13	53.45	53.62	53.34	53.88	53.36	.004	-.011, .019
At least one Mental Health Condition	32.80	33.89	36.13	35.66	36.65	37.17	<b>.042</b>	.028, .056
Both Physical/Mental Health Condition	27.61	28.22	29.90	29.45	30.00	30.00	<b>.023</b>	.010, .037
Good Health Functioning	69.53	68.83	63.90	65.72	63.16	63.47	<b>-.062</b>	-.079, -.045
Satisfied with Health	47.87	47.84	44.90	45.21	43.10	42.47	<b>-.057</b>	-.074, -.040
<b>Vocational Well-Being</b>								
Working	57.45	67.44	71.57	73.41	74.30	76.66	<b>.181</b>	.163, .199
Functioning Well at Work	92.89	85.87	88.70	88.20	86.60	86.75	<b>-.038</b>	-.053, -.023
Satisfied with Work	66.89	64.09	61.80	65.64	65.10	66.57	.014	-.009, .037
<b>Social Well-Being</b>								
In Intimate Relationship	81.23	80.77	82.24	83.11	82.44	82.74	<b>.021</b>	.006, .035
Functioning Well in Relationship	65.17	64.14	60.30	62.82	62.27	61.27	<b>-.045</b>	-.064, -.027
Satisfied with Relationship	71.30	70.26	67.23	67.41	68.09	65.87	<b>-.061</b>	-.079, -.042
High Community Involvement	59.58	59.99	53.13	51.14	52.39	49.43	<b>-.103</b>	-.122, -.085
Functioning Well in Community	67.31	61.92	61.52	61.85	62.10	59.50	<b>-.053</b>	-.070, -.035
Satisfied with Community	66.11	64.37	61.59	64.12	62.43	60.31	<b>-.043</b>	-.060, -.026

*Notes.* Frequency statistics represent weighted proportions of veterans endorsing the outcome. Time was coded T1=0 through T6=1 in multilevel models. Change in probability of the outcome represents the change in the predicted probability of the outcome over the three-year period. Boldface indicates statistical significance at the .05 level. CI = confidence interval.

Table 2. Overall proportions and change in health conditions

Outcome	Frequency Statistics						Multilevel Logistic Models	
	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	Change in probability of the outcome	95% CI
<b>Reported Health Conditions</b>								
Chronic Pain	40.86	41.42	40.52	39.87	40.06	39.27	<b>-.019</b>	-.034, -.004
Sleep Problems	31.12	30.53	31.82	31.18	30.56	30.35	-.009	-.023, .005
Anxiety	22.19	23.04	24.80	24.60	25.55	25.30	<b>.032</b>	.019, .044
Depression	19.55	21.12	23.19	23.34	24.00	24.32	<b>.045</b>	.032, .057
Arthritis	13.90	14.82	15.89	14.74	15.03	15.07	.008	-.003, .018
Hearing condition	12.77	12.91	13.86	12.69	14.46	14.81	<b>.018</b>	.006, .030
PTSD	12.40	14.18	15.24	15.06	15.89	16.06	<b>.032</b>	.021, .043
High blood pressure	11.90	12.01	12.56	12.47	11.95	12.61	.005	-.004, .014
High cholesterol	06.62	07.46	07.52	08.00	07.77	08.91	<b>.019</b>	.010, .027

*Notes.* Frequency statistics represent weighted proportion of veterans endorsing the outcome. CI = confidence interval. Time was coded T1=0 through T6=1 in multilevel models. Change in probability of the outcome represents the change in the predicted probability of the outcome over the three-year period. Boldface indicates statistical significance at the .05 level.

**Table 3.** Endorsement of health and broader well-being over time among key subgroups

Gender	Women						Men					
	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6
<b>Health-Related Well-Being</b>												
At least one Physical Health Condition	51.60	55.88	54.58	55.72	57.04	55.80	53.42	52.99	53.44	52.88	53.28	52.90
At least one Mental Health Condition	39.28	46.32	48.06	49.09	51.29	51.40	31.57	31.54	33.87	33.11	33.88	34.48
Both Mental/Physical Health Condition	29.63	35.77	36.97	37.52	39.48	38.40	27.23	26.79	28.56	27.92	28.21	28.41
Good Health Functioning	77.42	74.02	66.92	68.59	66.37	66.55	68.04	67.84	63.33	65.17	62.55	62.89
Satisfied with Health	45.55	48.30	43.41	45.16	39.77	42.19	48.31	47.76	45.18	45.22	43.73	42.52
<b>Vocational Well-Being</b>												
Working	45.22	56.76	61.84	63.39	62.55	62.28	59.77	69.46	73.41	75.30	76.53	79.38
Functioning Well at Work	92.15	86.23	88.09	84.46	82.96	83.94	93.03	85.80	88.81	88.91	87.29	87.26
Satisfied with Work	68.96	67.37	65.04	65.50	62.12	65.70	66.59	63.58	61.28	65.66	65.56	66.69
<b>Social Well-Being</b>												
In Intimate Relationship	76.46	77.35	77.31	76.23	74.24	76.65	82.13	81.42	83.17	84.42	83.98	83.89
Functioning Well in Relationship	72.02	70.50	64.54	66.48	64.69	64.17	63.96	62.99	59.55	62.20	61.86	60.76
Satisfied with Relationship	74.61	71.89	67.18	67.51	66.07	64.81	70.72	69.97	67.24	67.40	68.43	66.05
Broader Social Involvement	59.17	60.68	57.48	54.32	56.89	52.36	59.66	59.85	52.31	50.54	51.54	48.88
Functioning Well in Community	72.87	68.40	67.22	66.65	66.19	66.45	66.25	60.69	60.45	60.93	61.32	58.19
Satisfied with Community	64.79	66.48	62.19	63.57	60.50	60.67	66.37	63.97	61.48	64.23	62.79	60.24
Rank	Enlisted						Officer					
	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6
<b>Health-Related Well-Being</b>												
At least one Physical Health Condition	53.49	53.62	54.05	54.22	54.34	54.00	51.16	52.54	51.30	48.57	51.42	49.96
At least one Mental Health Condition	35.10	36.15	38.48	38.15	39.35	39.79	20.36	21.67	23.43	22.17	22.09	23.04
Both Mental/Physical Health Condition	29.46	30.05	31.93	31.46	32.20	32.19	17.64	18.30	18.92	18.59	18.17	18.14
Good Health Functioning	66.42	65.60	60.30	61.90	59.02	59.83	86.32	86.26	83.34	86.34	85.53	83.11
Satisfied with Health	45.02	44.53	41.99	41.76	39.62	39.23	63.31	65.76	60.62	63.87	61.87	59.96
<b>Vocational Well-Being</b>												
Working	54.94	65.32	69.33	71.24	72.17	74.78	71.03	78.85	83.68	85.08	85.84	86.78
Functioning Well at Work	92.44	85.08	88.13	87.23	85.63	85.51	94.82	89.53	91.28	92.73	91.32	92.83
Satisfied with Work	63.85	60.90	58.70	62.86	62.11	63.70	79.60	78.39	75.67	78.18	78.68	79.91
<b>Social Well-Being</b>												

In Intimate Relationship	79.63	78.80	80.54	81.58	80.90	81.11	89.85	91.42	91.40	91.39	90.74	91.51
Functioning Well in Relationship	64.71	62.94	59.08	62.06	60.99	60.72	67.38	69.72	66.11	66.46	68.42	63.86
Satisfied with Relationship	70.24	68.87	66.29	66.16	67.18	64.63	76.42	76.77	71.70	73.46	72.49	71.83
Broader Social Involvement	56.49	56.54	49.13	47.70	48.98	45.66	76.28	78.65	74.75	69.74	70.86	69.78
Functioning Well in Community	65.99	60.88	59.03	59.63	60.00	57.30	74.46	67.58	75.03	73.85	73.40	71.39
Satisfied with Community	63.82	62.35	59.22	61.75	60.03	57.85	78.47	75.32	74.39	76.93	75.36	73.58
	<b>Not Deployed</b>						<b>Deployed</b>					
<b>Deployment History</b>	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6
<b>Health-Related Well-Being</b>												
At least one Physical Health Condition	43.77	43.71	45.18	45.56	46.90	45.22	57.93	58.45	58.00	57.51	57.64	57.71
At least one Mental Health Condition	26.26	28.52	29.83	29.83	31.99	33.05	36.23	36.77	39.50	38.73	39.16	39.39
Both Physical/Mental Health Condition	20.26	20.97	22.41	23.40	24.15	24.33	31.46	32.07	33.88	32.68	33.13	33.00
Good Health Functioning	69.16	71.63	62.52	66.34	64.63	63.03	69.80	67.46	64.71	65.45	62.48	63.76
Satisfied with Health	50.47	48.68	45.22	47.46	43.91	43.50	46.56	47.47	44.82	44.09	42.77	41.99
<b>Vocational Well-Being</b>												
Working	52.97	65.14	69.66	72.75	73.73	76.67	59.80	68.68	72.67	73.86	74.76	76.77
Functioning Well at Work	95.38	87.49	89.53	89.01	86.79	87.82	91.73	85.12	88.29	87.84	86.50	86.18
Satisfied with Work	65.43	62.64	58.39	65.09	64.50	65.35	67.68	64.84	63.49	65.90	65.41	67.18
<b>Social Well-Being</b>												
In Intimate Relationship	76.61	75.17	77.20	78.89	76.60	77.50	83.63	83.76	84.93	85.38	85.55	85.49
Functioning Well in Relationship	72.74	71.63	67.26	67.43	69.22	66.59	61.63	60.70	57.06	60.66	59.09	58.82
Satisfied with Relationship	76.65	76.65	72.89	69.68	73.14	68.74	68.83	67.35	64.62	66.28	65.82	64.59
Broader Social Involvement	57.82	55.71	50.49	49.78	49.24	46.33	60.46	62.20	54.62	51.92	54.00	51.13
Functioning Well in Community	70.23	66.25	65.14	64.39	62.87	62.13	65.78	59.74	59.72	60.60	61.78	58.22
Satisfied with Community	67.29	65.39	63.60	64.72	64.47	60.94	65.50	63.94	60.67	63.90	61.49	60.03

**Table 4.** Endorsement of health conditions over time among key subgroups

Gender	Women						Men					
	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6
<b>Reported Health Conditions</b>												
Chronic Pain	39.75	42.49	38.78	40.05	42.60	40.20	41.07	41.21	40.85	39.84	39.58	39.10
Sleep Problems	28.58	29.08	29.65	30.67	28.76	29.07	31.60	30.81	32.23	31.27	30.90	30.59
Anxiety	29.53	32.47	36.97	37.40	38.99	39.12	20.80	21.25	22.50	22.18	23.00	22.69
Depression	27.67	29.69	35.02	35.27	35.83	35.54	18.01	19.49	20.94	21.09	21.76	22.20
Arthritis	11.54	12.89	14.32	13.69	14.14	14.30	14.35	15.19	16.19	14.94	15.20	15.22
Hearing condition	05.66	04.51	06.68	05.00	07.12	07.74	14.12	14.50	15.22	14.14	15.84	16.14
PTSD	12.19	17.34	16.97	17.73	20.03	18.39	12.44	13.58	14.92	14.56	15.11	15.62
High blood pressure	06.68	07.86	07.06	07.08	06.83	07.12	12.88	12.80	13.61	13.49	12.92	13.64
High cholesterol	04.16	05.43	04.00	04.88	04.19	05.43	07.08	07.84	08.18	08.59	08.44	09.57
Rank	Enlisted Personnel						Officer					
	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6
<b>Reported Health Conditions</b>												
Chronic Pain	41.94	42.22	41.93	41.33	41.31	40.56	35.02	37.08	32.88	32.00	33.30	32.33
Sleep Problems	32.44	31.75	33.23	32.57	31.41	31.55	24.01	23.97	24.18	23.65	25.97	23.87
Anxiety	24.01	25.07	26.64	26.83	27.77	27.53	12.38	12.04	14.87	12.55	13.56	13.26
Depression	21.13	23.00	24.95	25.30	26.14	26.48	11.03	10.95	13.64	12.79	12.48	12.65
Arthritis	13.56	14.75	15.61	14.58	14.83	14.98	15.76	15.21	17.45	15.64	16.10	15.56
Hearing condition	12.65	13.07	14.18	12.98	15.01	15.14	13.41	12.05	12.11	11.10	11.44	12.99
PTSD	13.06	15.00	16.11	15.84	16.63	17.17	08.85	09.75	10.58	10.83	11.94	10.08
High blood pressure	11.75	11.71	12.33	12.43	11.80	12.63	12.67	13.64	13.84	12.69	12.77	12.48
High cholesterol	05.98	06.87	06.95	07.46	07.24	08.37	10.04	10.64	10.58	10.90	10.59	11.88
Deployment History	Not Deployed						Deployed					
	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6	% at T1	% at T2	% at T3	% at T4	% at T5	% at T6
<b>Reported Health Conditions</b>												
Chronic Pain	33.80	33.07	32.21	32.08	34.41	32.61	44.55	45.78	44.86	43.94	43.01	42.76
Sleep Problems	21.68	21.02	23.63	21.43	22.82	21.96	36.06	35.50	36.09	36.27	34.60	34.74
Anxiety	17.33	18.93	21.09	20.66	21.64	22.19	24.73	25.18	26.75	26.66	27.59	26.92

Depression	15.48	17.36	20.36	19.18	20.31	22.08	21.68	23.08	24.66	25.52	25.93	25.49
Arthritis	08.44	09.32	09.36	10.08	10.08	09.94	16.76	17.70	19.30	17.18	17.62	17.75
Hearing condition	09.28	08.36	10.03	08.63	11.16	10.94	14.60	15.29	15.86	14.81	16.18	16.83
PTSD	04.75	05.90	06.83	05.96	07.31	07.76	16.40	18.51	19.64	19.82	20.38	20.40
High blood pressure	06.78	06.72	07.29	06.92	06.65	07.22	14.57	14.78	15.32	15.36	14.72	15.42
High cholesterol	02.02	02.71	02.82	03.16	02.99	04.12	09.01	09.94	09.97	10.53	10.26	11.42

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Table 5. Change in endorsement of health and well-being among veteran subgroups

Gender	Women		Men		Gender Difference	
	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI	Pr difference	95% CI
<b>Health-Related Well-Being</b>						
At least one Physical Health Condition	<b>.038</b>	.001, .074	-.003	-.019, .014	<b>.040</b>	-.081, .000
At least one Mental Health Condition	<b>.110</b>	.077, .144	<b>.029</b>	.014, .044	<b>.081</b>	-.118, -.044
Both Physical/Mental Health Condition	<b>.078</b>	.047, .109	.012	-.003, .027	<b>.066</b>	-.100, -.031
Good Health Functioning	<b>-.104</b>	-.140, -.068	<b>-.054</b>	-.073, -.036	<b>.050</b>	.010, .091
Satisfied with Health	<b>-.056</b>	-.095, -.017	<b>-.057</b>	-.076, -.038	.001	-.044, .042
<b>Vocational Well-Being</b>						
Working	<b>.154</b>	.111, .196	<b>.186</b>	.167, .206	.033	-.014, .079
Functioning Well at Work	<b>-.078</b>	-.113, -.423	<b>-.030</b>	-.046, -.014	<b>.047</b>	.009, .086
Satisfied with Work	-.056	-.120, .007	<b>.025</b>	.000, .049	<b>.081</b>	.013, .150
<b>Social Well-Being</b>						
In Intimate Relationship	-.008	-.047, .030	<b>.026</b>	.011, .041	.035	-.007, .076
Functioning Well in Relationship	<b>-.089</b>	-.136, -.043	<b>-.037</b>	-.058, -.017	<b>.052</b>	.001, .103
Satisfied with Relationship	<b>-.106</b>	-.152, -.061	<b>-.053</b>	-.073, -.032	<b>.053</b>	.003, .103
High Community Involvement	<b>-.063</b>	-.108, -.018	<b>-.111</b>	-.132, -.091	<b>.048</b>	-.098, .001
Functioning Well in Community	<b>-.054</b>	-.093, -.016	<b>-.052</b>	-.071, -.033	.002	-.041, .045
Satisfied with Community	<b>-.051</b>	-.091, -.011	<b>-.041</b>	-.060, -.023	.010	-.035, .054
Rank	Enlisted Personnel		Officers		Rank Difference	
	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI	Pr difference	95% CI
<b>Health-Related Well-Being</b>						
At least one Physical Health Condition	.007	-.010, .024	-.014	-.046, .018	.021	-.057, .015
At least one Mental Health Condition	<b>.046</b>	.030, .062	.019	-.007, .044	.028	-.057, .002
Both Physical/Mental Health Condition	<b>.027</b>	.012, .042	.001	-.203, .026	.026	-.055, .003
Good Health Functioning	<b>-.070</b>	-.089, -.051	-.021	-.047, .004	<b>.048</b>	.016, .080
Satisfied with Health	<b>-.061</b>	-.080, -.042	<b>-.034</b>	-.068, -.000	.027	-.012, .066

**Vocational Well-Being**

Working	<b>.184</b>	.163, .204	<b>.166</b>	.131, .201	.017	-.057, .023
Functioning Well at Work	<b>-.045</b>	-.062, -.028	.000	-.024, .024	<b>.045</b>	.016, .075
Satisfied with Work	.014	-.013, .040	.021	-.018, .060	.008	-.040, .055

**Social Well-Being**

In Intimate Relationship	<b>.022</b>	.006, .038	.013	-.009, .036	.009	-.036, .019
Functioning Well in Relationship	<b>-.049</b>	-.070, -.027	-.029	-.066, .008	.020	-.023, .062
Satisfied with Relationship	<b>-.062</b>	-.083, -.041	<b>-.052</b>	-.089, -.014	.011	-.032, .054
High Community Involvement	<b>-.107</b>	-.128, -.086	<b>-.084</b>	-.115, -.052	.023	-.015, .062
Functioning Well in Community	<b>-.063</b>	-.082, -.043	.003	-.030, .036	<b>.066</b>	.028, .103
Satisfied with Community	<b>-.045</b>	-.065, -.026	-.030	-.061, .001	.016	-.021, .052

**Deployment History**

**Health-Related Well-Being**

	Not Deployed		Deployed		Deployment History Difference	
	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI	Pr difference	95% CI
At least one Physical Health Condition	.024	-.003, .052	-.005	-.023, .013	.029	-.062, .004
At least one Mental Health Condition	<b>.061</b>	.038, .085	<b>.031</b>	.014, .049	<b>.030</b>	-.059, -.001
Both Physical/Mental Health Condition	<b>.042</b>	.020, .064	.013	-.004, .030	<b>.029</b>	-.056, -.001
Good Health Functioning	<b>-.063</b>	-.093, -.033	<b>-.062</b>	-.081, -.042	.002	-.035, .038
Satisfied with Health	<b>-.065</b>	-.096, -.035	<b>-.052</b>	-.073, -.032	.013	-.024, .049

**Vocational Well-Being**

Working	<b>.213</b>	.182, .244	<b>.165</b>	.143, .186	<b>.049</b>	-.086, -.011
Functioning Well at Work	<b>-.048</b>	-.075, -.021	<b>-.033</b>	-.051, -.015	.015	-.017, .047
Satisfied with Work	.027	-.014, .069	.007	-.020, .035	.020	-.069, .030

**Social Well-Being**

In Intimate Relationship	.016	-.010, .043	<b>.023</b>	.006, .039	.007	-.025, .038
Functioning Well in Relationship	<b>-.065</b>	-.098, -.032	<b>-.036</b>	-.058, -.013	.029	-.011, .069
Satisfied with Relationship	<b>-.085</b>	-.117, -.052	<b>-.049</b>	-.072, -.026	.036	-.004, .075
High Community Involvement	<b>-.018</b>	-.141, -.074	<b>-.101</b>	-.123, -.078	.007	-.033, .047
Functioning Well in Community	<b>-.071</b>	-.101, -.041	<b>-.043</b>	-.063, -.022	.028	-.008, .065
Satisfied with Community	<b>-.044</b>	-.073, -.015	<b>-.042</b>	-.063, -.021	.002	-.034, .038

*Notes.* Time was coded T1=0 through T6=1 in analyses.  $\Delta$  Pr represents the change in the predicted probability of the outcome over the three-year period. Boldface indicates a statistically significant change at the .05 level. Pr difference represents the absolute value of the group difference in the predicted probability. CI = confidence interval.

Table 6. Change in endorsement of health conditions among veteran subgroups

Gender	Women		Men		Gender Difference	
	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI	Pr difference	95% CI
<b>Reported Health Conditions</b>						
Chronic Pain	.004	-.031, .039	<b>-.023</b>	-.039, -.007	.027	-.065, .012
Sleep Problems	.000	-.034, .034	-.011	-.026, .004	.010	-.047, .027
Anxiety	<b>.090</b>	.057, .124	<b>.020</b>	.007, .034	<b>.070</b>	-.106, -.034
Depression	<b>.078</b>	.044, .113	<b>.038</b>	.025, .052	<b>.040</b>	-.077, -.003
Arthritis	<b>.026</b>	.003, .048	.004	-.008, .016	.022	-.047, .004
Hearing condition	.022	-.001, .045	<b>.017</b>	.004, .030	.005	-.032, .022
PTSD	<b>.055</b>	.028, .081	<b>.027</b>	.016, .039	.027	-.056, .001
High blood pressure	-.002	-.018, .014	.006	-.004, .016	.008	-.011, .027
High cholesterol	.004	-.015, .023	<b>.021</b>	.012, .031	.017	-.004, .038
Rank	Enlisted Personnel		Officers		Rank Difference	
	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI	Pr difference	95% CI
<b>Reported Health Conditions</b>						
Chronic Pain	-.015	-.032, .001	<b>-.037</b>	-.065, -.008	.021	-.054, .012
Sleep Problems	-.011	-.026, .004	.003	-.024, .030	.014	-.017, .045
Anxiety	<b>.036</b>	.022, .050	.008	-.012, .028	<b>.028</b>	-.052, -.004
Depression	<b>.050</b>	.035, .065	.016	-.005, .037	<b>.034</b>	-.060, -.008
Arthritis	.009	-.003, .021	.000	-.023, .022	.009	-.035, .016
Hearing condition	<b>.023</b>	.009, .036	-.009	-.031, .012	<b>.032</b>	-.058, -.006
PTSD	<b>.034</b>	.022, .046	<b>.019</b>	.000, .037	.016	-.038, .007
High blood pressure	.007	-.003, .017	-.009	-.027, .010	.015	-.037, .006
High cholesterol	<b>.019</b>	.010, .029	.014	-.005, .034	.005	-.027, .017
Deployment History	Not Deployed		Deployed		Deployment History Difference	
	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI	Pr difference	95% CI

**Reported Health Conditions**

Chronic Pain	-.004	-.030, .022	<b>-.026</b>	-.044, -.008	.022	-.054, .009
Sleep Problems	.004	-.020, .027	-.016	-.033, .001	.019	-.048, .009
Anxiety	<b>.045</b>	.025, .065	<b>.025</b>	.009, .041	.020	-.046, .005
Depression	<b>.057</b>	.036, .078	<b>.038</b>	.022, .054	.019	-.045, .008
Arthritis	.014	-.003, .031	.004	-.010, .018	.010	-.032, .012
Hearing condition	<b>.020</b>	.001, .038	<b>.017</b>	.001, .032	.003	-.027, .021
PTSD	<b>.027</b>	.013, .041	<b>.035</b>	.020, .049	.008	-.012, .028
High blood pressure	.002	-.013, .016	.006	-.005, .017	.005	-.014, .023
High cholesterol	<b>.018</b>	.007, .030	<b>.019</b>	.008, .031	.001	-.015, .018

*Notes.* Time was coded T1=0 through T6=1 in analyses.  $\Delta$  Pr represents the change in the predicted probability of the outcome over the three-year period. Boldface indicates a statistically significant change at the .05 level. Pr difference represents the absolute value of the group difference in the predicted probability. CI = confidence interval.

Supplemental Table 1. Syntax for Examining Change in Health and Broader Well-Being for Veteran Subgroups

<b>Models</b>	<b>Syntax</b>
Time only	<pre>melogit Outcome c.Time    ID: Time, cov(unstr) pweight(weightingvariable) intpoints(25) nolog margins, dydx(Time)</pre>
Gender	<pre>melogit Outcome i.GENDER##c.Time    ID: Time, cov(unstr) pweight(weightingvariable) intpoints(25) nolog margins, over(GENDER) dydx(Time) post lincom _b[1.GENDER]- _b[0.GENDER]</pre>
Rank	<pre>melogit Outcome i.RANK##c.Time    ID: Time, cov(unstr) pweight(weightingvariable) intpoints(25) nolog margins, over(RANK) dydx(Time) post lincom _b[1.RANK]- _b[0.RANK]</pre>
Deployment History	<pre>melogit Outcome i.DEPLOYMENT##c.Time    ID: Time, cov(unstr) pweight(weightingvariable) intpoints(25) nolog margins, over(DEPLOYMENT) dydx(Time) post lincom _b[1.DEPLOYMENT]- _b[0.DEPLOYMENT]</pre>
<p>Note. Stata Version 16.1 margins command by default includes the random effect unless otherwise specified to only include the fixed portion of the model. The margins command calculates the predicted mean/probability of a positive outcome (<a href="#">STATA MULTILEVEL MIXED-EFFECTS REFERENCE MANUAL</a>). The number of integration points varied for each model and were increased until estimates stabilized. Twenty-five was used as an example for the syntax above.</p>	

Supplemental Table 2. Change in endorsement of health and broader well-being after controlling for health status and functioning

Outcome	Multilevel Logistic Models					
	Unadjusted Model		Adjusted for health status		Adjusted for health functioning	
	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI	$\Delta$ Pr	95% CI
<b>Health-Related Well-Being</b>						
At least one Physical Health Condition	.004	-.011, .019	--	--	--	--
At least one Mental Health Condition	<b>.042</b>	.028, .056	--	--	--	--
Both Physical/Mental Health Condition	<b>.023</b>	.010, .037	--	--	--	--
Good Health Functioning	<b>-.062</b>	-.079, -.045	--	--	--	--
Satisfied with Health	<b>-.057</b>	-.074, -.040	--	--	--	--
<b>Vocational Well-Being</b>						
Working	<b>.181</b>	.163, .199	<b>.185</b>	.167, .203	<b>.182</b>	.164, .201
Functioning Well at Work	<b>-.038</b>	-.053, -.023	<b>-.035</b>	-.050, -.020	<b>-.027</b>	-.041, -.012
Satisfied with Work	.014	-.009, .037	.019	-.004, .042	<b>.030</b>	.007, .054
<b>Social Well-Being</b>						
In Intimate Relationship	<b>.021</b>	.006, .035	<b>.021</b>	.006, .035	<b>.022</b>	.008, .036
Functioning Well in Relationship	<b>-.045</b>	-.064, -.027	<b>-.041</b>	-.061, .022	<b>-.031</b>	-.051, -.012
Satisfied with Relationship	<b>-.061</b>	-.079, -.042	<b>-.058</b>	-.077, -.038	<b>-.050</b>	-.070, -.031
High Community Involvement	<b>-.103</b>	-.122, -.085	<b>-.102</b>	-.121, -.083	<b>-.096</b>	-.115, -.077
Functioning Well in Community	<b>-.053</b>	-.070, -.035	<b>-.049</b>	-.067, -.032	<b>-.038</b>	-.055, -.020
Satisfied with Community	<b>-.043</b>	-.060, -.026	<b>-.039</b>	-.056, -.021	<b>-.027</b>	-.045, -.010

Notes. Frequency statistics represent weighted proportions of veterans endorsing the outcome. Time was coded T1=0 through T6=1 in multilevel models.  $\Delta$  Pr represents the change in the predicted probability of the outcome over the three-year period. Boldface indicates statistical significance at the .05 level. CI = confidence interval.