

Gender Differences in VA Disability Status for PTSD Over Time

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Objective: Posttraumatic stress disorder (PTSD) is the most prevalent psychiatric condition for which veterans receive service-connected disability benefits from the U.S. Department of Veterans Affairs (VA). Historically, women have been less likely than men to obtain PTSD disability benefits. The authors examined whether these gender disparities have been redressed over time and, if not, whether appropriate clinical factors account for persisting differences. **Methods:** This longitudinal, observational study was based on a gender-stratified, nationally representative sample of 2,998 U.S. veterans who applied for VA disability benefits for PTSD between 1994 and 1998. The primary outcome was change in PTSD service connection over a ten-year period. **Results:** Forty-two percent (95% confidence interval [CI]=38%–45%) of the women and 50% (CI=45%–55%) of the men originally denied service connection for PTSD eventually received such benefits. Only 8% (CI=7%–10%) of women and 5% (CI=4%–6%) of men lost PTSD disability status. Compared with men, women had lower unadjusted odds of gaining PTSD service connection (odds ratio [OR]=.70, CI=.55–.90) and greater unadjusted odds of losing PTSD service connection (OR=1.76, CI=1.21–2.57). Adjusting for clinical factors accounted for the gender difference in gaining PTSD service connection; adjusting for clinical factors and demographic characteristics eliminated the gender difference in loss of PTSD service connection. **Conclusions:** Gender-based differences in receipt of PTSD service connection persisted in this cohort over a ten-year period but were explained by appropriate sources of variation. Further research on possible disparities in loss of PTSD disability benefits is warranted. (*Psychiatric Services* 65:663–669, 2014; doi: 10.1176/appi.ps.201300017)

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Posttraumatic stress disorder (PTSD) affects approximately 9% of all Americans (1) but is particularly common among veterans. For example, although the 12-month prevalence of PTSD in the U.S. population is estimated to be less than 4% (2), it is as high as 24% among U.S. combat personnel and veterans (3). For many of these veterans, PTSD has become chronic and disabling, resulting in long-term impaired occupational and social functioning (4–6). It is not surprising, therefore, that PTSD is the most common psychiatric disorder for which veterans seek disability benefits through the U.S. Department of Veterans Affairs (VA), and it is the third most commonly compensated disorder (7). As of October 2012, a total of 501,280 veterans were receiving VA disability benefits for PTSD, including 299,076 Vietnam War veterans and 115,108 Iraq and Afghanistan War veterans (7). In 2005, the VA Office of the Inspector General (OIG) found that although veterans with PTSD represented 8.7% of disability beneficiaries, they received over 20% of compensation payments, making PTSD by far the costliest medical condition for the VA's disability program (8).

Veterans do not have to be completely unable to work to receive VA service-connected disability benefits, but the level of benefits corresponds to veterans' degree of disability,

which is rated on a scale from zero, for nondisabling conditions, to 100%, for total disability. Depending on the disability level, service-connected benefits may include cash payments, access to Veterans Health Administration medical care and pharmacy services for no cost or reduced cost, rehabilitative and employment services, life insurance, survivor benefits, and educational and health insurance benefits for family members (9). Furthermore, a disability rating may be reduced or terminated if there has been significant improvement in the disabling condition that is deemed sustainable under ordinary conditions of daily living or if the VA's rating board determines that the original rating was based on an "unmistakable error" (10).

Service connection for PTSD substantially reduces recipients' subsequent risk of poverty and homelessness (11,12) and is associated with clinically important improvements in symptoms ten years later (12). Evidence also indicates increased rates of participation in mental health treatment after receipt of a service connection for PTSD (13,14). Although correlates of seeking and obtaining service connection for PTSD have been examined, we are unaware of research on termination of service-connected disability benefits for PTSD.

Equity of PTSD claim awards is a high priority for the VA (8). As the VA seeks to resolve gaps in how it serves female veterans, evidence of a gender disparity in initial PTSD claim approval rates is of particular concern. In a large nationally representative sample, we observed that men's odds of obtaining service connection for PTSD were considerably higher than women's, even after controlling for clinical factors such as PTSD symptom severity and functioning (15). Instead, findings showed that gender differences in military trauma accounted for the disparity in initial claim approval rates. Specifically, men were more likely to have experienced combat, whereas women were more likely to have experienced in-service sexual assault. When the gender dissimilarity in combat exposure was controlled for, gender differences in initial claim approval rates became nonsignificant (15).

While impossible to completely erase the welfare loss associated with lower rates of service connection for PTSD among women compared with men, the loss could be mitigated if women persisted in their PTSD claims through appeals or by submitting new claims based on additional evidence. Congress tasked the OIG to determine whether original gender disparities in PTSD claim awards persisted over time (16); however, because the Veterans Benefits Administration (VBA) does not maintain historical claims records, the OIG was unable to address this question.

We, however, have this ability because we followed our original cohort over a ten-year period. Objectives of this study were to determine whether the gender disparity in PTSD service connection awards persisted over time, examine possible gender differences in the rate of loss of PTSD service connection, and determine whether identified gender differences in gain and loss of PTSD service connection could be attributed to appropriate clinical factors, such as gender differences in symptom severity or functional impairment, or whether gender differences might be attributable to differences in demographic characteristics or military trauma.

Methods

Data source

The Minneapolis VA Medical Center Institutional Review Board approved this study. Data were drawn from our original cohort of nationally representative veterans who first applied between 1994 and 1998 for VA disability status for PTSD and who responded to mailed surveys at two time points: between 1998 and 2000 (time 1) and between 2004 and 2006 (time 2). On average, almost ten years ($\text{mean} \pm \text{SD} = 9.8 \pm 1.4$) lapsed from time 1 to time 2. We originated the cohort to explore disparities in PTSD disability benefit awards after an original claim, including possible gender disparities (15). At study inception, 100,750 male veterans and 3,866 female veterans were eligible for participation. Although male veterans represented 96% of all applicants for VA PTSD disability benefits, random sampling was stratified by gender to achieve a 1:1 gender ratio.

We used monetary incentives, repeat mailings, and telephone prompts to maximize survey responses. The effective time 1 response rate was 68%, and nonresponse bias was minimal. Specifically, time 1 survey responders did not differ from ineligible veterans and nonresponders on any characteristic, except that survey responders served on average six months more in the Armed Forces than ineligible veterans and nonresponders and were slightly more likely to have recently worked for pay (15). Of the 3,337 veterans who completed time 1 study material, 2,998 (90%) were alive at time 2. Of these, 2,551 (85%) returned useable time 2 surveys. On the basis of their time 1 data, time 2 responders did not differ from nonresponders on clinical characteristics, employment status, or income. However, time 2 nonresponders were approximately two years younger, 5% more likely to be nonwhite, and 4% less likely to have attended college than time 2 responders. Elsewhere we report on changes in symptoms and functioning from time 1 to time 2 (12). Here we focus on changes in PTSD service connection.

Outcome

Our primary outcomes were gain and loss of PTSD disability status over a ten-year period. We assessed service connection for PTSD using claim information extracted from VBA databases.

Covariates

To facilitate comparison with our original study (15), we group covariates into the following three categories in this report: clinical variables (PTSD, functioning, and postservice life stressors), demographic characteristics, and military trauma type.

PTSD symptom severity was measured with the Penn Inventory for Posttraumatic Stress Disorder (Penn Inventory) (17), which has excellent internal consistency and test-retest reliability of .87–.93. Among veterans, scores of at least 35 have .90–.98 sensitivity and .94–1.00 specificity for PTSD diagnosis (18,19). In keeping with our prior work (15), we used Penn Inventory scores as a continuous measure.

Functioning was assessed with measures of social functioning, physical functioning, and employment status. We used the Social Adjustment Scale (SAS) (20) to evaluate functional impairment. The SAS measures psychosocial adjustment and functioning across the following domains: major work role; social interactions; marital, parental, and extended-family interactions; and economic self-sufficiency. We used the SAS summary measure, which has scores ranging from 1, best functioning, to 5, worst functioning. Internal consistency was .85. We assessed physical functioning using the RAND Revised Physical Functioning Battery (21). Scores range from 12 (worst impairment) to 36 (no impairment). Its internal consistency was .92. Employment was assessed with a single item. We used medical conditions listed in VBA databases to compute Charlson Comorbidity Index scores (22). The Charlson Comorbidity Index assigns severity-weighted scores to 18 specific medical illnesses and predicts long-term survival.

To assess postservice trauma and hardships, which may affect symptoms and functioning, we used the revised Life Stressor Checklist (23). This scale assesses exposure to natural and human-made disasters, accidental injuries, and other serious traumas and stressors. Scores range from 0 to 11. Internal consistency was .72.

Demographic covariates included time 1 age, race, education, marital status, military branch, military service era, region in which veterans filed their claim, and years since claim initiation.

In-service sexual trauma was assessed at time 1 with the Sexual Harassment Inventory (24). Veterans were considered to have been sexually assaulted if they were forced to have sex against their will or if someone attempted to force them to have sex against their will. Three items from the criminal sexual misconduct subscale of the Sexual Harassment Inventory, plus a fourth question asking about in-service sexual assault unrelated to work, determined veterans' in-service sexual assault status, which was then dichotomized as a yes-no variable.

Combat exposure was measured at time 1 with a modified 22-item version

of the Combat Exposure Index (25). Scores ranged from 0, indicating no combat, to 22, indicating the heaviest combat (Cronbach's $\alpha=.90$).

Analysis

We used chi square and t tests to assess possible gender imbalances in study measures. To address our first two objectives mentioned above, we estimated within each gender (stratum) the rate of gaining and losing PTSD service connection and then the corresponding odds ratios (ORs) and their 95% confidence intervals (CIs).

To address our third objective, we used stratified logistic regression. Because we used a stratified sampling design with oversampling of women, we based all the estimates on weighted stratified analyses, with weights proportional to the inverse of sample selection probabilities. Gaining was defined as the probability of having PTSD service connection at time 2 given the absence of PTSD service connection at time 1. Losing was defined as the probability of not having PTSD service connection at time 2 given the presence of PTSD service connection at time 1.

We conducted these analyses hierarchically. Model 1 included PTSD service connection at time 1, gender, and the PTSD service connection at time 1 \times gender interaction. We refer to this as the unadjusted model. For model 2, we added clinical variables as a block, including measures of symptoms and functioning and their change from time 1 to time 2. This block tested whether persisting gender differences in PTSD service connection could be attributed to appropriate sources of variation, such as PTSD symptoms or functional impairment. For model 3, we added demographic characteristics other than gender as a block. In model 4, we added in-service sexual assault. In model 5, we substituted combat exposure for in-service sexual assault. It was at this last step that the gender difference in initial PTSD service connection claim awards became non-significant in our prior work (15). Using within-gender means for each scale, we imputed missing time 2 values for covariates. The findings

were highly similar when we reran analyses without imputed values. These stratified logistic regression models were used to obtain ORs comparing women's with men's odds of gaining and losing VA disability status for PTSD.

Results

Sample characteristics

The sample included 1,394 men and 1,604 women. Seventy-three percent ($N=2,181$) of the sample identified as white, 16% ($N=488$) identified as African American, 3% ($N=78$) identified as American Indian, 1% ($N=35$) identified as belonging in other racial-ethnic groups, and 7% ($N=195$) did not report their race. In addition, 5% ($N=164$) of veterans in the sample indicated that they were Hispanic. As can be seen in Table 1, men and women differed on most characteristics. The rate of service connection for PTSD for women was 18 percentage points lower than that for men at time 1 and 14 percentage points lower than that for men at time 2.

Association of gender with change in PTSD service connection

The rate of gain and loss of PTSD service connection differed by gender. Specifically, 314 of the 756 women (42%) and 201 of the 400 men (50%) who had not been awarded PTSD disability status by time 1 had gained it by time 2. Thus the rate of gain was 42% (CI=38%–45%) for women and 50% (CI=45%–55%) for men. Seventy-one of the 848 women (8%) and 49 of the 994 men (5%) with PTSD service connection at time 1 lost it by time 2. Thus the rate of loss of disability benefits for PTSD was 8% (CI=7%–10%) for women and 5% (CI=4%–6%) for men.

Table 2 presents characteristics of women compared with men who gained and lost PTSD service connection over this ten-year period. Table 3 shows that women had lower unadjusted odds of gaining service connection for PTSD than men. However, adjusting for clinical factors eliminated the gender difference. Further adjustment for demographic characteristics and military trauma type did not meaningfully alter the ORs. Table 4 shows that the odds of

Table 1

Characteristics of veterans who sought disability benefits for service-connected PTSD

Characteristic	Women (N=1,604)		Men (N=1,394)		p ^a
	N	%	N	%	
Age (M±SD)	41.0±10.0		54.4±9.9		<.001
White race	1,170	73	1,011	73	ns
Married	566	35	827	59	<.001
Some college or more education	1,318	84	717	52	<.001
Service era					<.001
Pre-Vietnam	55	3	207	15	
Vietnam	360	22	1,078	77	
Post-Vietnam	1,189	74	109	8	
Military branch					<.001
Army	863	54	923	66	
Navy	323	20	134	10	
Marines	123	8	264	19	
Air Force	270	17	58	4	
Other	25	2	15	1	
Region in which claim filed					<.001
Years since claim initiated to time					
1 survey (M±SD)	2.8±1.0		2.9±1.4		<.01
Time 1 PTSD symptoms and functioning					
PTSD symptom severity (M±SD) ^b	42.3±15.4		46.5±16.5		<.001
Overall role functioning (M±SD) ^c	2.7±.7		2.8±.8		ns
Employed	536	33	333	24	<.001
Physical functioning (M±SD) ^d	29.6±5.0		28.2±5.8		<.001
Comorbidity (M±SD) ^e	.2±.5		.3±.7		<.001
Postservice trauma and hardships (M±SD) ^f	5.3±2.8		4.3±2.3		<.001
Time 2 PTSD symptoms and functioning					
PTSD symptom severity (M±SD) ^b	38.7±15.0		40.8±16.1		<.001
Overall role functioning (M±SD) ^c	2.7±.7		2.6±.8		ns
Employed	364	28	150	13	<.001
Physical functioning (M±SD) ^d	28.9±5.0		27.6±5.4		<.001
Postservice trauma and hardships (M±SD) ^f	3.8±2.7		2.3±2.2		<.001
In-service sexual assault	1,140	71	66	5	<.001
Combat exposure (M±SD) ^g	.9±1.9		8.0±3.9		<.001
Time 1 PTSD service connection	848	53	994	71	<.001
Time 2 PTSD service connection	1,091	68	1,146	82	<.001

^a Chi square and t tests were used to compare characteristics between women and men.

^b Assessed with the Penn Inventory (17). Possible scores range from 0 to 78, with higher scores indicating greater PTSD symptom severity.

^c Assessed with the Social Adjustment Scale (20). Possible scores range from 1 to 5, with higher scores indicating poorer adjustment across all domains.

^d Assessed with the RAND Revised Physical Functioning Battery (21). Possible scores range from 12 to 36, with higher scores indicating less impairment.

^e Assessed with the Charlson Comorbidity Index (22), which assesses the number of and seriousness of comorbid diseases. Higher scores indicate greater risk of mortality from comorbid conditions.

^f Assessed with the revised Life Stressor Checklist (23). Possible scores range from 0 to 11, with higher scores indicating exposure to more postservice life stressors and hardships.

^g Combat exposure was measured with a 22-item version of the Combat Exposure Index (25). Possible scores range from 0 to 22, with higher scores indicating exposure to heavier combat.

course of VA PTSD disability status. We used a unique data set that included a nationally representative sample in which women were over-sampled to determine whether gender disparities in awards for PTSD service connection persisted—a research topic the VA OIG recommended (8)—and to explore possible gender differences in the rate of loss of VA disability status for PTSD over a ten-year period.

Main findings

We found that women were less likely than men to gain a service connection for PTSD after their initial claim was denied. The gender discrepancy in initial PTSD claim awards that we observed previously (15) was not eliminated over time. However, our findings indicated that the gender difference in gaining PTSD service connection after a claim denial was explained by differences in clinical factors associated with gender. Thus, although differences in combat exposure accounted for the gender difference in initial claim awards in this cohort (15), appropriate sources of variation accounted for the gender difference in gain of PTSD service connection among those whose original PTSD claim was denied.

The finding that 42% of women and 50% of men who were originally denied service connection for PTSD eventually obtained it is also of interest. Assuming that these veterans deserved service connection for PTSD, one must wonder why their initial claim was denied. It may be that they did not sufficiently describe their problems at the time of their original claim, or perhaps these veterans and their advocates became more adept at establishing evidence linking the veterans' PTSD to military service. Particularly complicated cases might have required more time and effort to sufficiently develop. Alternatively, it may be that the initial evaluation was flawed, leading to a decision reversal once the veteran obtained a more accurate evaluation. Taken together, our findings underscore the need for the VA to implement methods to ensure high-quality and equitable disability evaluations for PTSD at the time of initial claim. A recent study indicates that

losing service-connected benefits for PTSD were higher for women than for men. Controlling for clinical variables reduced but did not eliminate the gender difference. However, the gender difference in loss of PTSD service connection became nonsignificant when we added the demographic

block. The ORs remained nonsignificant when we added in-service sexual assault and combat to the models.

Discussion

To our knowledge, this is the first study to longitudinally examine the

Table 2

Characteristics of veterans, by gain and loss of PTSD service-connected disability benefits

Characteristic	Gained PTSD service connection (N=515)					Lost PTSD service connection (N=120)				
	Women (N=314)		Men (N=201)		p ^a	Women (N=71)		Men (N=49)		p ^a
	N	%	N	%		N	%	N	%	
Age (M±SD)	41.8±9.7		52.3±9.4		<.001	39.2±9.2		57.8±13.0		<.001
White race	216	69	134	67	ns	51	72	38	78	ns
Married	87	28	95	47	<.001	25	35	35	71	<.001
Some college or more education	258	84	92	47	<.001	61	86	29	59	<.001
Service era					<.001					<.001
Pre-Vietnam	11	4	26	13		1	1	13	27	
Vietnam	85	27	151	75		12	17	34	69	
Post-Vietnam	218	69	24	12		58	82	2	4	
Military branch					<.001					<.001
Army	172	55	138	69		28	39	35	71	
Navy	64	20	20	10		15	21	5	10	
Marines	23	7	32	16		6	9	7	14	
Air Force	50	16	9	5		20	28	2	4	
Other	5	2	2	1		2	3	0	0	
Region in which claim filed					ns					ns
Years since claim initiated to time 1 survey (M±SD)	2.8±1.1		3.0±1.6		ns	3.0±1.0		3.4±1.6		ns
Time 1 PTSD symptoms and functioning										
PTSD symptom severity (M±SD) ^b	42.7±16.0		45.8±16.3		<.05	43.8±15.4		37.9±18.1		ns
Overall role functioning (M±SD) ^c	2.8±.8		2.9±.8		ns	2.7±.8		2.3±.7		<.01
Employed	91	29	46	23	ns	24	34	12	25	ns
Physical functioning (M±SD) ^d	29.0±5.1		27.9±6.3		<.05	29.4±5.3		28.7±6.5		ns
Comorbidity (M±SD) ^e	.2±.5		.3±.6		ns	.3±.0	.6	.3±.0	.7	ns
PostsERVICE trauma and hardships (M±SD) ^f	5.7±2.8		4.7±2.4		<.001	5.3±2.9		4.3±2.3		.05
Time 2 PTSD symptoms and functioning										
PTSD symptom severity (M±SD) ^b	39.0±14.9		40.9±15.6		ns	38.6±13.8		33.5±19.9		ns
Overall role functioning (M±SD) ^c	2.7±.7		2.7±.8		ns	2.6±.8		2.3±.9		ns
Employed	57	22	19	12	.01	19	32	4	11	<.05
Physical functioning (M±SD) ^d	28.3±5.1		27.6±4.9		ns	28.9±4.7		27.6±5.7		ns
PostsERVICE trauma and hardships (M±SD) ^f	3.9±2.8		2.6±2.2		<.001	3.3±2.8		1.9±2.0		<.01
In-service sexual assault	223	71	18	9	<.001	53	75	4	8	<.001
Combat exposure (M±SD) ^g	.8±1.9		6.5±4.1		<.001	.8±1.8		8.2±3.1		<.001

^a Chi square and t tests were used to compare characteristics between women and men.^b Assessed with the Penn Inventory (17). Possible scores range from 0 to 78, with higher scores indicating greater PTSD symptom severity.^c Assessed with the Social Adjustment Scale (20). Possible scores range from 1 to 5, with higher scores indicating poorer adjustment across all domains.^d Assessed with the RAND Revised Physical Functioning Battery (21). Possible scores range from 12 to 36, with higher scores indicating less impairment.^e Assessed with the Charlson Comorbidity Index (22), which assesses the number of and seriousness of comorbid disease. Higher scores indicate greater risk of mortality from comorbid conditions.^f Assessed with the revised Life Stressor Checklist (23). Possible scores range from 0 to 11, with higher scores indicating exposure to more postservice life stressors and hardships.^g Combat exposure was measured with a 22-item version of the Combat Exposure Index (25). Possible scores range from 0 to 22, with higher scores indicating exposure to heavier combat.

implementation of standardized disability evaluations using evidence-based assessment measures would increase the quality and reduce the variability in PTSD disability evaluations (26).

The rate of loss of PTSD service connection was low for both men and women. Nevertheless, we observed that women were more likely than men to lose VA disability status for PTSD. Although results are not broken down

by gender, the rate of exit from the Social Security disability programs is similarly low (27). Adjusting for clinical factors alone reduced but did not eliminate this gender difference. Adjusting for both clinical factors and demographic characteristics, on the other hand, rendered this gender difference statistically nonsignificant. However, we are mindful to not over-interpret our findings in light of the

small number of veterans whose original PTSD claim awards were reversed. Indeed, our findings indicate that more research is warranted to understand loss of PTSD service connection and to determine whether gender or other disparities exist.

Limitations

To our knowledge, this is the only longitudinal study of former VA

Table 3Sequential adjustment effects on odds of PTSD service connection gain^a

Model	Features	Women versus men	
		OR	95% CI
1	Unadjusted	.70*	.55–.90
2	Adjusted for clinical factors ^b	.80	.60–1.07
3	Adjusted for clinical factors and demographic characteristics ^c	.99	.65–1.52
4	Adjusted for clinical factors, demographics and in-service sexual assault ^d	.85	.47–1.54
5	Adjusted for clinical factors, demographics, and combat exposure ^e	1.14	.71–1.82

^a Stratified logistic regression models were used to compute odds ratios. All models included PTSD service connection at time 1, gender, and the gender \times time 1 PTSD service connection interaction.

^b Adjusted for time 1 PTSD symptom severity, overall role functioning, physical functioning, comorbidity, postservice trauma and hardship, time 2 employment, and the change from time 1 to time 2 in PTSD symptom severity, overall role functioning, physical functioning, and postservice trauma and hardship

^c Adjusted for variables in model 2 plus age, race (white), marital status, education, military service era, military branch, region in which claim was filed, and time since claim was initiated

^d Adjusted for all variables in model 3 plus in-service sexual assault

^e Adjusted for all variables in model 3 plus level of combat exposure

* $p < .01$

disability applicants. The study purposefully oversampled women and thus was well prepared to examine gender differences. Important as this cohort is to answer some questions about changes in disability status, these data were collected before the wars in Iraq and Afghanistan; consequently, we do

not know whether the findings generalize to these newer veterans. Women now comprise approximately 12% of forces deployed to these wars. Although technically barred until recently from serving in combat, a growing and unprecedented number of female service members are deployed

to combat areas in combat support roles (28).

Furthermore, there have been significant changes in VA policy since the inception of this cohort. First, the VA liberalized the evidentiary requirement for PTSD claims such that it does not require corroboration of a stressor related to fear of hostile military or terrorist activity if a VA doctor confirms that the stressful experience recalled by a veteran adequately supports a diagnosis of PTSD and the veteran's symptoms are related to the claimed stressor. Second, the VA has made significant advances in PTSD care, including roll-outs of evidence-based psychotherapies for PTSD (29,30), which may allow newer veterans to avoid PTSD's more disabling course.

We do not know whether these findings pertain to other disability systems, such as Social Security, Worker's Compensation, or tort claims. Also, we do not know which veterans in the present cohort appealed a denied claim or submitted new claims after their initial denial or whether they intended to do so. For those whose service connection for PTSD status changed, we do not have administrative or clinical information to better elucidate the reasons for change. Over the past few years the VBA has engaged in extensive training to improve processing of PTSD claims related to in-service sexual trauma. Unfortunately, we cannot directly link our findings to these efforts.

Conclusions

Compared with male veterans, female veterans were less likely to gain and more likely to lose service connection for PTSD disability claims over a ten-year period. Unlike the initial gender disparity in disability award, the difference in gain of PTSD service connection among those initially denied was not due to variation in combat exposure. The gender disparity in gain of PTSD disability status among those originally denied this status was explained by gender differences in clinical factors, which can be considered an appropriate source of variation. Further research is needed to confirm and, if found, examine reasons for disparities in loss of PTSD disability benefits.

Table 4Sequential adjustment effects on odds of PTSD service connection loss^a

Model	Features	Women versus men	
		OR	95% CI
1	Unadjusted	1.76**	1.21–2.57
2	Adjusted for clinical factors ^b	1.53*	1.02–2.30
3	Adjusted for clinical factors and demographics ^c	1.22	.69–2.16
4	Adjusted for clinical factors, demographics and in-service sexual assault ^d	1.45	.67–3.11
5	Adjusted for clinical factors, demographics, and combat exposure ^e	1.00	.53–1.88

^a Stratified logistic regression models were used to compute odds ratios. All models included PTSD service connection at time 1, gender, and the gender \times time 1 PTSD service connection interaction.

^b Adjusted for time 1 PTSD symptom severity, overall role functioning, physical functioning, comorbidity, postservice trauma and hardship, time 2 employment, and the change from time 1 to time 2 in PTSD symptom severity, overall role functioning, physical functioning, and postservice trauma and hardship

^c Adjusted for variables in model 2 plus age, race (white), marital status, education, military service era, military branch, region in which claim was filed, and time since claim was initiated

^d Adjusted for all variables in model 3 plus in-service sexual assault

^e Adjusted for all variables in model 3 plus level of combat exposure

* $p < .05$

** $p < .01$

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