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**Behavioral Health Monitoring Among Active Duty U.S. Army Soldiers,
2016–2020**

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14. ABSTRACT This publication describes the prevalence of diagnosed behavioral health disorders, the characteristics of the population diagnosed, their utilization of behavioral health care services, and the impact of behavioral health disorders on medical readiness. Annual prevalence across the period was 13–15% among men and 21–24% among women. Prevalence was highest for older Soldiers, senior enlisted Soldiers, and Soldiers who were widowed or divorced. Data suggest that each day about 3,000 Soldiers (0.6% of the Active Duty Army) are not medically ready for behavioral health reasons, which highlights the importance of further study and prevention of behavioral health disorders in this population.					
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EXECUTIVE SUMMARY
PUBLIC HEALTH REPORT NO. S.0094101.3-23
BEHAVIORAL HEALTH MONITORING
AMONG U.S. ARMY ACTIVE DUTY SOLDIERS, 2016–2020

1. PURPOSE

The objective of this report is to describe the burden of diagnosed behavioral health (BH) disorders, the utilization of behavioral health care services, and the impact of BH disorders on the medical readiness among Active Duty (AD) Soldiers in the U.S. Army. The prevalence of diagnosed BH disorders was used to evaluate the BH burden across time and in various subpopulations. The distribution of medical encounters for behavioral health across time, population groups, and clinical venues indicates how BH services are being utilized and by whom. The number of Soldiers with limited duty profiles for BH conditions and the number of days on such profiles were used to estimate the scale of behavioral health impacts on readiness. In addition, this report examines Soldiers' demographic and military characteristics as risk and protective factors for diagnosis with a BH disorder.

2. METHODS

The population for this analysis includes AD Soldiers from 2016 through 2020. BH diagnoses and encounters were identified using medical encounter data from the Military Health System Data Repository. Medical records from installations that had transitioned to the Military Health System Genesis electronic medical record system, i.e., Joint Base Lewis-McChord during 2018–2020 and Presidio of Monterey in 2020, were excluded. BH disorder diagnoses were defined as an International Classification of Diseases, tenth revision, BH diagnosis code (ICD-10 F-code) in the first diagnostic position in a medical record, with the additional requirement for outpatient records that the diagnosis be made by a BH-credentialed provider, such as a psychologist or psychiatrist. BH encounters were included if a BH-related ICD-10 code, i.e., for BH disorders and for stressors that may affect behavioral health such as work or relationship problems, occurred in the first diagnostic position in outpatient records or in any of the first eight diagnostic positions in inpatient records. Profile records from e-Profile were from the Medical Operational Data Systems.

Measures of diagnosed BH disorders included annual and 5-year prevalence. In addition, multivariable logistic regression was used to analyze independent relationships between various demographic and military characteristics and diagnosis with a BH disorder. BH encounters, reported by reason and clinic type, include both those for BH disorders and those for BH-related stressors, such as relationship problems. The number of Soldiers with a temporary profile and the average days of limited duty are reported by BH condition. All results are stratified by sex.

3. RESULTS

Annual prevalence of any BH disorder diagnosis across the 2016–2020 period showed a slight, but significant downward trend, from 15% in 2017 to 13% in 2020 among male AD Soldiers and from 24% in 2016 to 21% in 2020 among female AD Soldiers. Adjustment disorder had the highest prevalence among both men and women, followed, among women, by mood and anxiety disorders. Among AD Soldiers, 29% of the men and 40% of the women had a BH disorder diagnosis at some time during the 2016–2020 period. The prevalence of any diagnosed

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BH disorder increased with age: from 23% and 34% of Soldiers 17–24 years of age among men and women, respectively, to 41% and 53% of Soldiers 45–64 years of age.

In a model adjusted for race-ethnicity and marital status, senior enlisted Soldiers (those in ranks E7–E9) had the highest odds of diagnosis with a BH disorder during the 2016–2020 period when compared with commissioned officers (O1–O10; men: adjusted odds ratio (aOR) 2.63, 95% confidence interval (CI) 2.57–2.69; women: aOR 2.51, 95% CI 2.38–2.65). Soldiers in all race-ethnicity groups had higher odds of BH diagnosis than Soldiers who identify as Asian or Pacific Islander. Black Soldiers had the highest adjusted odds of BH diagnosis (men: aOR 1.66, 95% CI 1.62–1.71, women: aOR 1.81, 95% CI 1.72–1.90), followed by Soldiers who identify as American Indian or Alaska Native (men: aOR 1.63, 95% CI 1.53–1.74, women: aOR 1.53, 95% CI 1.35–1.90). Soldiers who were currently or formerly married (i.e., divorced or widowed) had higher adjusted odds of BH diagnosis than single (never married) Soldiers, with the highest among those who were formerly married (men: aOR 2.46, 95% CI 2.40–2.52, women: aOR 2.33, 95% CI 2.24–2.43).

The annual rate of medical encounters in outpatient settings for BH disorders and BH-related stressors varied across a small range showing no significant trend. Half of all AD Soldiers had one or more outpatient BH encounters during the 5-year period: 46% of men and 55% of women, with a median of 6 and 9 encounters, respectively. Most outpatient BH encounters occurred in embedded behavioral health clinics (men 27%, women 26%) or multidisciplinary BH clinics (men 27%, women 33%). Most encounters at direct care BH clinics were for BH disorders. Encounters for BH-related stressors occurred primarily in embedded behavioral health care and in primary care. Encounters in special public health programs, such as the family advocacy program and other education and prevention programs, were predominantly for BH-related stressors (91%).

The annual rate of BH-related hospitalizations, i.e., hospitalizations with ICD codes indicating diagnosed BH disorders or BH-related stressors, showed no significant trend across 2016–2020. During the entire 5-year period, 4.9% of male AD Soldiers and 7.4% of female AD Soldiers were hospitalized for BH disorders or BH-related stressors. The principal diagnoses noted among men were for substance use disorder (48%), followed by mood disorder (37%) and adjustment disorder (36%). The principal diagnoses noted for women were mood disorder (47%), followed by adjustment disorder (37%) and anxiety disorder (32%). The median number of bed-days were highest for posttraumatic stress disorder (men 8 [interquartile range: 4–28], women 8 [5–28]), followed by mood disorder (men 8 [5–19], women 7 [4–13]). BH-related stressors noted most often during hospitalizations included suicidal ideation (men and women both 27%) and sleep problems (men 27%, women 18%), along with being the victim of maltreatment (women 21%).

Over the 2-year period 2019–2020, 30,581 temporary BH profiles were created (men 23,492; women 7,089) for 27,394 Soldiers (men 2,081; women 6,313). Half were due to adjustment disorder (men 30%, women 32%) and depressive disorder (men 17%, women 21%). The mean number of limited duty days resulting from temporary BH profiles ranged from 63 to 90 days.

4. DISCUSSION

The prevalence of diagnosed BH disorders in the AD Army was similar to that in the other Services, but lower than in the civilian population. Differences by sex and race followed patterns in the civilian population, but age and marital status did not. The higher prevalence of BH diagnosis among older Soldiers may reflect service during wartime and may be responsible for the higher prevalence among senior enlisted Soldiers. Higher prevalence among married Soldiers may reflect the stress of military life on relationships.

The distribution of reasons for the outpatient BH encounters suggests appropriate usage of resources: 72–79% of the outpatient medical encounters provided by direct care BH clinics (embedded behavioral health, multidisciplinary BH care, and other direct BH care) were for diagnosed BH disorders. Encounters for sleep disorders rarely took place in the direct care BH clinics, occurring primarily in specialty clinics (e.g., outpatient neurology and pulmonary disease clinics), primary care, and purchased care venues. However, BH-related stressors, such as family and relationship problems, accounted for 19% of encounters in the direct care BH clinics. If Soldiers with these concerns could be redirected to other services, such as military and family life counselors (MFLC) or chaplains, it would ease some of the pressure on the BH care system. The focus of special public health programs, where 91% of encounters were for BH-related stressors, suggests that referring Soldiers with nonclinical concerns to clinics that focus on health and wellness resources is an effective strategy in increasing treatment capacity at BH clinics.

5. RECOMMENDATIONS

The recommendations focus on the contextual factors and personal behaviors that contribute to the risk of some disorders and greater use of MFLCs and other nonclinical resources. A marketing approach targeting new Soldiers might emphasize taking control of behaviors that could derail one's career by limiting sleep (e.g., gaming, social media), undermining performance (e.g., drinking, drugs), or causing anxiety (e.g., finances, relationships). For Soldiers who need only reassurance or family counseling, the MFLCs might serve as a triage system, referring only those who need clinical care to the direct care BH clinics. An information campaign for company commanders and NCOs could stress the importance of referring Soldiers with BH-related stressors such as relationship problems to MFLCs. More use might also be made of BH technicians (68X) for BH care, triage, and follow-up rather than diverting them to activities and roles unrelated to behavioral health.

Interviewing or surveying senior leaders with BH disorders may reveal protective factors and positive behaviors that have enabled them to succeed in their military careers. Their experiences may provide ideas about how to build resilience, foster success, and prevent worsening conditions.

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BEHAVIORAL HEALTH MONITORING AMONG ACTIVE DUTY U.S. ARMY SOLDIERS,
2016–2020

1. PURPOSE

The purpose of this report is to describe the burden of diagnosed behavioral health (BH) disorders, the utilization of behavioral health care services, and the impact of BH disorders on the medical readiness among Active Duty (AD) Soldiers in the U.S. Army. The prevalence of diagnosed BH disorders was used to evaluate the BH burden across time and in various subpopulations. The distribution of medical encounters for behavioral health across time, population groups, and clinical venues indicates how BH services are being utilized and by whom. The number of Soldiers with limited duty profiles for BH conditions and the number of days on such profiles were used to estimate the scale of behavioral health impacts on readiness. In addition, this report examines Soldiers' demographic and military characteristics as risk and protective factors for diagnosis with a BH disorder.

2. REFERENCES AND GLOSSARY

Appendix A lists references used within this report. The glossary provides a list of abbreviations.

3. AUTHORITY

Army Regulation (AR) 40-5, Section 3-5 (DA 2019b).

4. BACKGROUND

BH disorders affect Soldiers' ability to perform or even remain in service, impacting readiness and retention (Rona et al. 2009; Hoge, Auchterlonie, and Milliken 2006; Department of Defense (DoD) 2010; Psychiatric Health Center of Excellence (PHCoE) 2017; Armed Forces Health Surveillance Branch (AFHSB) 2018). For example, policy explicitly limits deployment of Soldiers whose symptoms impair performance or whose condition is likely to recur or deteriorate during deployment, as well as those diagnosed with psychoses or bipolar disorders or under treatment with antipsychotics, lithium, or anticonvulsants (Blakeley and Jansen 2013; DoD 2010). One study found that 20% separated from service within a year of screening positive for BH problems (Hoge, Auchterlonie, and Milliken 2006). The segment of the Army population affected by BH is not inconsiderable. The Defense Health Agency (DHA) reports that BH diagnoses affected roughly 15% of Soldiers in 2007, 23% in 2012, and 20% in 2016 (PHCoE 2017). In 2017, BH disorders accounted for 44% of all Soldier hospitalizations (AFHSB 2018). Although BH disorders are some of the most common conditions affecting Soldiers, BH surveillance of the Army population is seldom reported in the literature. This report is a first step in filling that gap.

The objective of this report is to describe the burden of diagnosed BH disorders, the utilization of BH services, and the impact on medical readiness among Active Duty (AD) Soldiers in the

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Army. The prevalence of BH diagnoses across time and in various population groups suggests the scope of the BH burden. The distribution of medical encounters across time, population groups, and clinical venues indicates how BH services are being utilized and by whom. The number of Soldiers with limited duty profiles for BH conditions and the number of days on such profiles suggests the scale of behavioral health impacts on readiness. In addition, demographic and military characteristics are examined as potential risk or protective factors.

5. METHODS

5.1 Study Population

The population for this analysis consisted of AD Soldiers with personnel records from the Defense Manpower Data Center (DMDC) during the reporting period, 2016–2020, with some exceptions. AD Soldiers stationed at two installations were excluded from the analysis following the transition of medical facilities at those installations to the Military Health System (MHS) Genesis electronic medical record system. Thus, Soldiers stationed at Joint Base Lewis-McChord (JBLM) during most or all of 2018, 2019, or 2020, or at Presidio of Monterey during 2020 were not included in the analysis. However, those Soldiers were included for any years at other installations preceding or following their tenure at JBLM or Presidio. In addition, Soldiers older than age 64 (n=74) were excluded, as they are generally required to retire by age 64 (DA 2023). Results are stratified by sex to provide a clearer picture of how behavioral health affects men and women differently. Absent this stratification, the results would reflect primarily the effect on men, since approximately 85% of the Army is male.

5.2 Data Sources and Metrics

BH diagnoses and encounters were determined using medical encounter data from the Military Health System Data Repository (MDR). These include records for direct care received at military treatment facilities and records for purchased care received at civilian health institutions and paid for through TRICARE.

BH disorder diagnoses were defined as an International Classification of Diseases, Tenth Edition, BH diagnosis code (ICD-10 F code) in the first diagnostic position (DX1) in the medical record. Table B-1 in Appendix B lists the specific BH ICD-10 codes used. In outpatient records, BH diagnoses were limited to those by BH-credentialed providers, such as psychologists and psychiatrists, as indicated by the provider specialty code (Table B-2), whereas for inpatient records a primary BH diagnosis was accepted without regard to provider specialty. The following diagnosis categories, which are not mutually exclusive, are highlighted in this report: adjustment disorder, anxiety disorder, alcohol use disorder, attention deficit/hyperactivity disorder (ADHD), drug use disorder, eating disorder, mood disorder, personality disorder, posttraumatic stress disorder (PTSD), and psychosis. However, the measure “any BH diagnosis” embraces the entire set of ICD-10 codes beginning with “F”, i.e., the entire range of BH disorders, including such categories as organic and developmental disorders, which occur rarely in the military population. Diagnosis codes related to tobacco use (F17) were excluded.

BH encounters, an indicator of BH care utilization, include both encounters for BH diagnoses and encounters for BH-related stressors, such as family or relationship problems (listed in Table B-3). A BH encounter was identified if a BH-related ICD-10 code occurred in the first diagnostic position (DX1) in outpatient records or in any of the first eight diagnostic positions (DX1–DX8) in inpatient records. Encounters that had BH-related ICD-10 codes but were with providers in specialties other than BH or primary care, such as gynecology or gastroenterology, were excluded.

Outpatient BH encounters were categorized by care source using Medical Expense and Performance Reporting System (MEPRS) codes. These categories include embedded behavioral health, multidisciplinary care, other direct behavioral health care, primary care, purchased care, specialty clinics, substance use clinics, and special public health programs (Table B-4). “Other direct behavioral health care” venues include outpatient psychiatry, psychology, and social work clinics, as well as outpatient mental health clinics other than the embedded behavioral health or multidisciplinary behavioral health clinics. Specialty clinics included outpatient clinics for medical specialties such as neurology, pulmonary disease, and emergency medical care. The special public health programs included here are those related to BH promotion and prevention (MEPRS code FAS), such as the family advocacy program, suicide prevention programs, and other education and prevention programs (DHA 2018).

The e-Profile application within the Medical Operational Data Systems (MODS) suite tracks Soldiers whom the medical system has determined to have a condition that impacts their readiness to deploy (DA 2019b). A medical provider assigns a profile when a health-related condition significantly impacts a Soldier’s ability to conduct duties pertaining to his/her military occupational specialty or area of concentration and they are placed on limited duty. Profiles due to BH-related conditions were examined for AD Soldiers during a 2-year period, 2019–2020, because the data on profiles from earlier years were incomplete. BH profiles were isolated using the system condition variable, which reports the major health condition impacting the Soldier’s medical readiness. Unique BH profiles were identified using the condition identification number, and each condition was described using the reason variable.

Population estimates were calculated using demographic and military data from DMDC personnel records. The Soldiers’ characteristics include sex, age in four categories (17–24, 25–34, 35–44, 45–64), race-ethnicity (American Indian or Alaska Native, Asian or Pacific Islander, Black, Hispanic, and White), marital status (single, married, and formerly married, which includes divorced and widowed), educational achievement (high school diploma or less, some college, undergraduate degree, graduate degree), and rank (as a grade category: E1–E4, E5–E6, E7–E9, W1–W5, O1–O10).

5.3 Analytical Approach

Univariate statistics (i.e., percent and frequency) were used to describe the demographic and military characteristics of Soldiers with and without a BH encounter or diagnosis. The distribution of encounters by BH disorders and clinic type were also provided. The median and interquartile range of outpatient encounters and of hospitalization bed-days were calculated by

BH disorder and BH-related stressor. Annual and 5-year prevalence of BH encounters and diagnoses were stratified by sex, race-ethnicity, rank, marital status, educational attainment, and age group. Annual or 5-year overall and stratum-specific prevalence was calculated by dividing the number of Soldiers who had a BH encounter or BH diagnosis by the population of AD Soldiers overall or in the specific stratum. Tests for annual trends—of BH disorders, encounters, and hospitalizations—included linear regression and, where the values did not follow a normal distribution, the Jonckheere-Terpstra test. Beta estimates and p values are reported.

Bivariate analysis was used to check for correlation between categorical variables. These tests included Kendall's tau for correlation between the ordinal variables age category, grade category, and educational attainment and chi-square for association between marital status and age category and grade category. Results indicated that age, rank, and education were all correlated, so that including all of them in a regression model would lead to unstable estimates of the model coefficients and would inflate the variances and standard errors of the coefficients. Such collinearity is especially problematic when the purpose of the multivariable model is explanation, as it is here, rather than prediction. In order to select the model with the least inflation of the variance, multicollinearity was assessed using variance inflation factors, tolerances, and eigenvalues. A final multivariable model was used to estimate relationships between BH diagnosis and each covariate including race-ethnicity, marital status, and rank.

Crude and adjusted odds ratios (aOR) and 95% confidence intervals (CI) are reported. The crude odds ratios compare each level of a characteristic with the level chosen as a reference without considering the effects of other characteristics. The adjusted odds ratios take other characteristics into account.

Descriptive statistics were used to report the number of temporary profiles, distribution of demographic and military characteristics of Soldiers with a temporary profile, and the average number of limited duty days by BH condition.

6. RESULTS

6.1 Burden: Behavioral Health Diagnoses

Annual prevalence of any behavioral health disorder diagnosis across the 2016–2020 period showed a slight, but significant, downward trend (Figure 1): from 15% in 2017 to 13% in 2020 among male AD Soldiers ($\beta = -0.006$, $p=.021$) and from 24% in 2016 to 21% in 2020 among female AD Soldiers ($\beta = -0.007$, $p=.025$). For specific disorders, annual variation was less than 3% (Figure 2). Adjustment disorder diagnoses had the highest prevalence among both men and women, followed, among women, by diagnoses of mood and anxiety disorders. Among men, the prevalence of mood, anxiety, and alcohol use disorders was essentially the same in four of the five years. Although the changes were small, diagnoses of the four most prevalent disorders decreased significantly across time for both men and women (Table C-1). Because prevalence showed little variation across time, subsequent analyses examined data pooled over the period. The results described hereafter are for that pooled population.

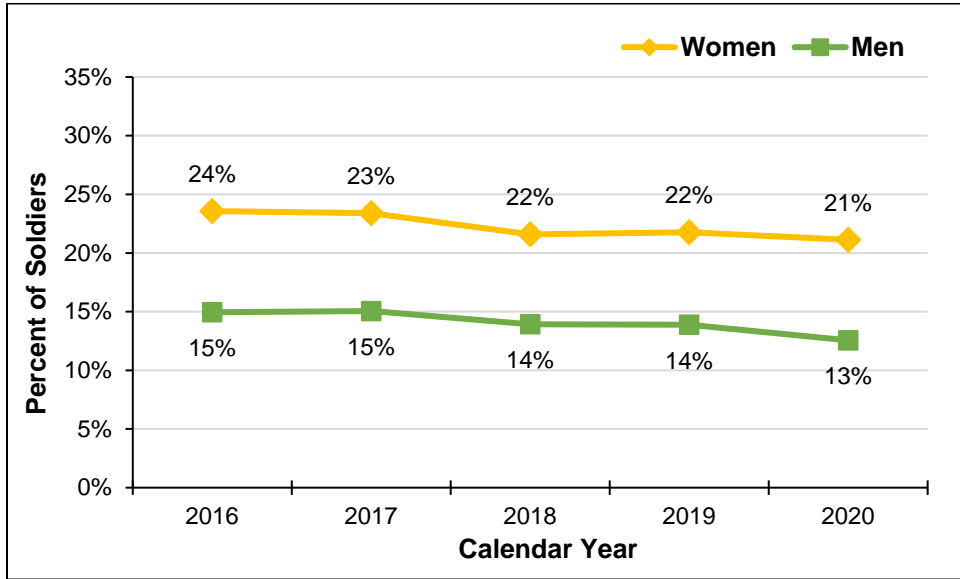


Figure 1. Annual Prevalence of Any Behavioral Health Disorder Diagnosed in Active Duty Soldiers, by Sex, 2016–2020

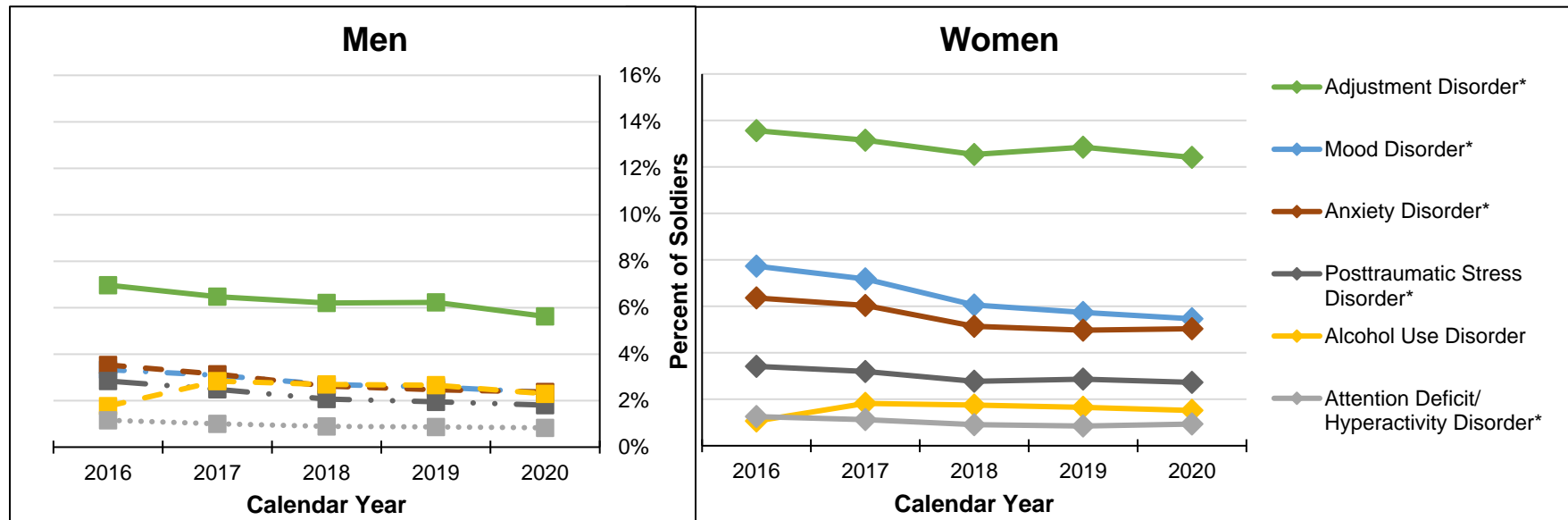


Figure 2. Annual Prevalence of Specific Behavioral Health Disorders^{a,b} Diagnosed in Active Duty Soldiers, by Sex, 2016–2020

Notes:

^a Four disorders with prevalence <1% were omitted from the graphs: personality disorder, drug use disorder, and eating disorder, and psychosis.

^b The asterisk (*) indicates a significant downward trend: adjustment disorder (men $\beta = -.294$, $p=.012$; women $\beta = -.260$, $p=.049$), mood disorder (men $\beta = -.246$, $p=.002$; women $\beta = -.597$, $p=.007$), anxiety disorder (men $\beta = -.300$, $p=.010$; women $\beta = -.372$, $p=.030$), posttraumatic stress disorder (men $\beta = -.261$, $p=.007$; women $\beta = -.171$, $p=.034$), attention deficit/hyperactivity disorder (men $\beta = -.079$, $p=.016$; women no trend), psychosis (men no trend; women $\beta = -0.005$, $p=.005$).

During the 5-year period 2016–2020, 29% of male AD Soldiers and 40% of female AD Soldiers had a BH diagnosis during that period (Table 1). The prevalence of any BH diagnosis increased with age: among men, from 23% of those 17–24 years of age to 41% of those 45–64 and, among women, from 34% to 53%. Prevalence was lowest among Soldiers who identified as Asian or Pacific Islander (men 23%, women 31%), who were never married (men 22%, women 32%), who had a graduate degree (men 27%, women 36%), and who were commissioned officers (men 19%, women 29%). Prevalence was highest among Soldiers who identified as Black (men 35%, women 46%), those who had formerly been married (men 43%, women 56%), those with some undergraduate study but no degree (men 36%, women 50%), and senior enlisted Soldiers (E7–E9; men 43%, women 57%).

Table 1. Characteristics of Active Duty U.S. Army Soldiers with Any Behavioral Health Diagnosis, by Sex, over the 5-Year Period 2016–2020, Counts and Prevalence

Characteristics	Men			Women		
	Total n	with BH Diagnosis n	Prevalence %	Total n	with BH Diagnosis n	Prevalence %
Total^a	695,661	198,734	29	130,123	51,402	40
Age						
17–24	275,587	63,435	23	56,829	19,039	34
25–34	260,108	71,747	28	47,911	19,496	41
35–44	119,053	46,664	39	19,018	9,474	50
45–64	40,913	16,888	41	6,365	3,393	53
Race-Ethnicity^b						
American Indian/ Alaska Native	4,827	1,593	33	1,193	496	42
Asian/Pacific Islander	37,677	8,748	23	9,021	2,777	31
Black	131,133	46,315	35	44,270	20,153	46
Hispanic	105,109	28,921	28	22,878	8,199	36
White	412,313	111,287	27	51,538	19,214	37
Marital Status^c						
Single/never married	304,626	66,958	22	55,329	17,630	32
Married	360,825	118,698	33	60,055	25,491	42
Formerly married ^d	30,157	13,060	43	14,724	8,274	56
Education Level^e						
Some high school/ high school diploma	460,299	131,274	29	74,687	29,494	39
Some undergraduate	54,708	19,699	36	9,587	4,776	50
Undergraduate degree	128,780	33,875	26	32,292	12,259	38
Graduate degree	48,578	13,120	27	12,889	4,656	36

Table 1. Characteristics of Active Duty U.S. Army Soldiers with Any Behavioral Health Diagnosis, by Sex, over the 5-Year Period 2016–2020, Counts and Prevalence (continued)

Characteristics	Men			Women		
	Total n	with BH Diagnosis n	Prevalence %	Total n	with BH Diagnosis n	Prevalence %
Rank						
E1–E4	345,392	90,394	26	69,121	25,311	37
E5–E6	172,854	54,367	31	27,914	13,475	48
E7–E9	72,799	31,514	43	9,642	5,463	57
W1–W5	16,169	5,234	32	1,739	906	52
O1–O10	88,447	17,225	19	21,707	6,247	29

Legend:

BH = Behavioral Health O = Commissioned Officer
E = Enlisted W = Warrant Officer

Notes:

^a Total number of Soldiers includes those with missing information as noted below.

^b Men missing 4,602 from total, 1,868 from count with BH diagnoses. Women missing 1223 from total, 563 from count with diagnoses.

^c Men missing 3,296 from total, 766 from count with BH diagnoses. Women missing 668 from total, 217 from count with diagnoses).

^d Includes widowed and divorced.

^e Men missing 53 from total, 18 from count with BH diagnoses. Women missing 15 from total, from count with diagnoses.

The odds of BH diagnosis were higher for enlisted soldiers and for warrant officers, compared with commissioned officers, when adjusted for race-ethnicity and marital status (Table 2). For both men and women, the association between rank and BH diagnosis was strongest for senior noncommissioned officers (E7–E9: men: aOR 2.63, 95% CI 2.57–2.69; women: aOR 2.51, 95% CI 2.38–2.65), when compared with commissioned officers. The adjusted odds of BH diagnosis for all race-ethnicity groups was higher when compared to Soldiers who identified as Asian or Pacific Islander. For both men and women, the association was strongest for Soldiers who identify as Black (men: aOR 1.66, 95% CI 1.62–1.71, women: aOR 1.81, 95% CI 1.72–1.90), followed by Soldiers who identify as American Indian or Alaska Native (men: aOR 1.56, 95% CI 1.46–1.66, women: aOR 1.53, 95% CI 1.35–1.73). Soldiers who were married or formerly married had higher odds of BH diagnosis compared with single Soldiers. The association was strongest for Soldiers who were formerly married (men: aOR 2.46, 95% CI 2.40–2.52, women: aOR 2.33, 95% CI 2.24–2.43).

Table 2. Crude and Adjusted Odds Ratios of Behavioral Health Diagnosis among Active Duty U.S. Army Soldiers, by Sex, over the 5-Year Period 2016–2020

Characteristics	Men		Women	
	cOR ^a (95% CI)	aOR ^b (95% CI)	cOR ^a (95% CI)	aOR ^b (95% CI)
Rank				
E1–E4	1.47 (1.44–1.49)	1.78 (1.75–1.82)	1.43 (1.38–1.48)	1.57 (1.51–1.62)
E5–E6	1.90 (1.86–1.94)	1.77 (1.74–1.81)	2.31 (2.22–2.40)	2.03 (1.96–2.12)
E7–E9	3.16 (3.09–3.23)	2.63 (2.57–2.69)	3.23 (3.08–3.40)	2.51 (2.38–2.65)
W1–W5	1.98 (1.91–2.05)	1.71 (1.64–1.77)	2.69 (2.44–2.97)	2.22 (2.01–2.46)
O1–O10	REF	REF	REF	REF
Race-Ethnicity				
American Indian/ Alaska Native	1.63 (1.53–1.74)	1.56 (1.46–1.66)	1.60 (1.41–1.81)	1.53 (1.35–1.73)
Asian/Pacific Islander	REF	REF	REF	REF
Black	1.81 (1.76–1.85)	1.66 (1.62–1.71)	1.88 (1.79–1.97)	1.81 (1.72–1.90)
Hispanic	1.26 (1.22–1.29)	1.17 (1.14–1.21)	1.26 (1.19–1.32)	1.23 (1.16–1.30)
White	1.22 (1.19–1.25)	1.19 (1.16–1.22)	1.34 (1.27–1.40)	1.43 (1.36–1.50)
Marital Status				
Single/Never Married	REF	REF	REF	REF
Married	1.74 (1.72–1.76)	1.70 (1.68–1.72)	1.58 (1.54–1.62)	1.52 (1.48–1.56)
Formerly Married ^c	2.71 (2.65–2.78)	2.46 (2.40–2.52)	2.74 (2.64–2.85)	2.33 (2.24–2.43)

Legend:

E = Enlisted

O = Commissioned Officer

W = Warrant Officer

cOR = crude odds ratio

aOR = adjusted odds ratio

CI = confidence interval

REF = reference category

Notes:

^a Omits Soldiers missing information on race-ethnicity or marital status. Populations for unadjusted analyses: rank – men 695,661, women 130,123; race-ethnicity – men 691,059, women – 128,900; marital status: men – 695,608, women 130,108.

^b Population for analyses adjusted for race-ethnicity, marital status, and rank: men – 691,008, women – 128,886.

^c Includes widowed and divorced.

6.2 Behavioral Health Care Utilization: Medical Encounters for Behavioral Health Disorders and Stressors

6.2.1 Outpatient Encounters

The annual rate of medical encounters in outpatient settings for BH disorders and BH-related stressors varied across a small range: 1.9–2.4 per 100 Soldiers per year for men and 3.2–3.7 per 100 for women, showing no significant trend (men: $p=.159$, women: $p=.183$). This amounts to a large number of medical encounters: 791,562 to 1,065,411 by men and 247,685 to 294,392 by women.

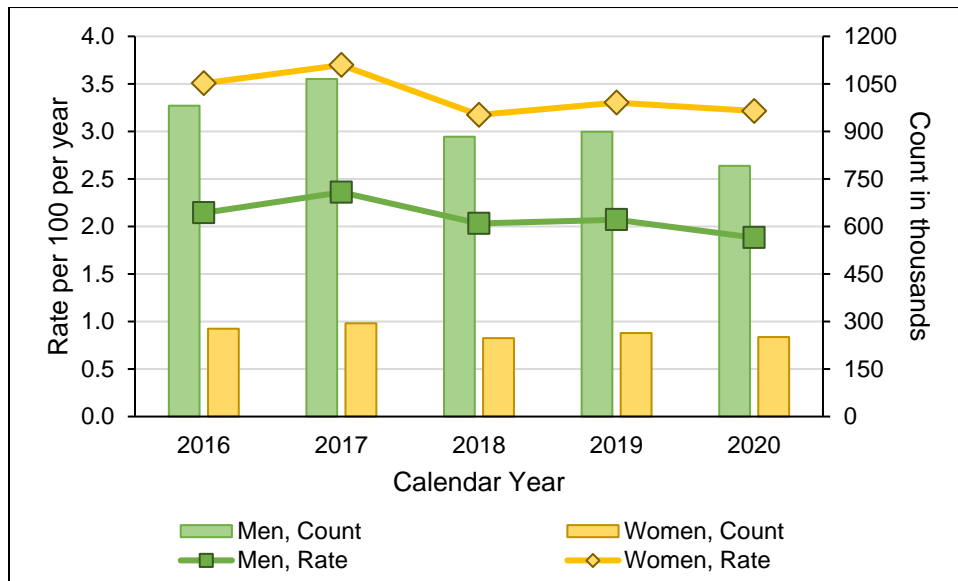


Figure 3. Annual Outpatient Behavioral Health Encounters among Active Duty U.S. Army Soldiers, Rate and Count by Sex, 2016–2020

Most outpatient BH encounters occurred in embedded behavioral health clinics (men 27%, women 26%) or multidisciplinary BH clinics (men 27%, women 33%) (Figure 4). In the direct care BH clinics, 72–79% of encounters were for diagnosed BH disorders (Figure 5), rather than BH-related stressors. However, the latter did account for 19% of the care provided in embedded behavioral health clinics, as well as 18% of the BH encounters provided by primary care. At specialty clinics, encounters were principally for sleep problems (70%), although many of the encounters in both primary care and purchased care were also for sleep problems (31% and 41%, respectively). Nearly all encounters at substance use clinics were for substance use (91%); encounters in special public health programs were predominantly for BH-related stressors (91%).

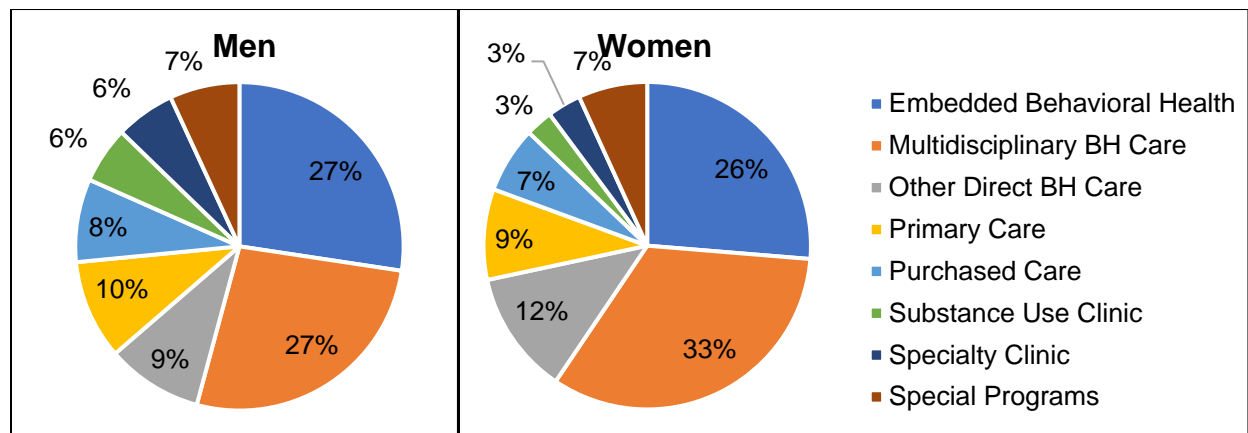


Figure 4. Distribution of Outpatient Behavioral Health Encounters among Active Duty U.S. Army Soldiers, by Care Source and Sex, over the 5-Year Period 2016–2020

Half of all AD Soldiers had an outpatient BH encounter (men 46%, women 55%) during the 2016–2020 period (Figure 6). As noted above, most BH encounters were for diagnosed disorders rather than for BH-related stressors (Table 3). Among men, encounters were principally for adjustment and substance use disorders (17% and 16%, respectively), followed by sleep problems (14%) and PTSD (12%). The pattern was different among women, with most encounters for adjustment and mood disorders (24% and 16%, respectively), followed by PTSD (11%). The median number of encounters per Soldier was lower for men than for women (median [interquartile range]: 6 [2–17] and 9 [3–23], respectively). For both men and women, the median number of encounters was highest for PTSD (men 9 [3–22], women 9 [3–23]) and substance use disorder (men 7 [2–16], women 6 [1–17]). However, for several disorders, 25% of Soldiers who received a diagnosis did not return for a second medical encounter for the diagnosed disorder, as indicated where the lower number of the interquartile range was 1. This was the case for men diagnosed with mood, anxiety, or adjustment disorders and for women diagnosed with mood, anxiety, or substance use disorders. The distribution by demographic and military characteristics of Soldiers with BH encounters (Table C-2) mirrors that for diagnosed BH disorders (Table 1).

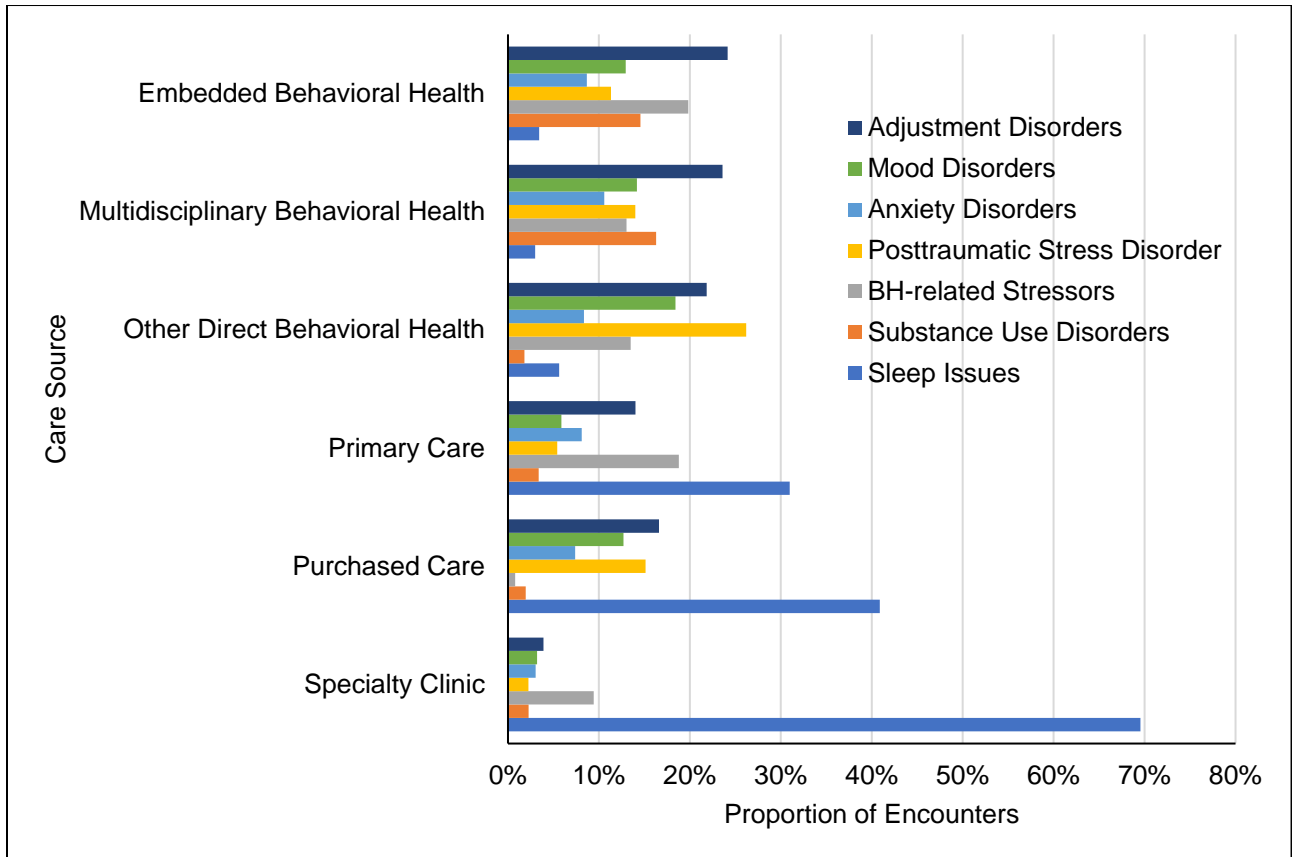


Figure 5. Distribution of Reasons for Outpatient Behavioral Health Encounters across Care Source,^a Active Duty U.S. Army Soldiers, over the 5-Year Period 2016–2020

Note:

^a Omits substance use clinics (91% of encounters for substance use disorder) and special public health programs (91% of encounters for BH-related stressors).

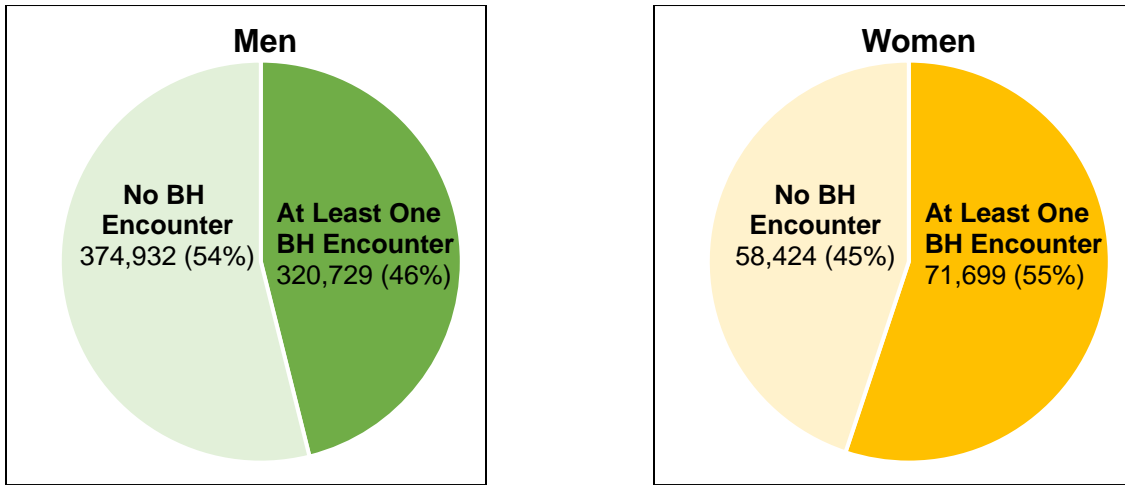


Figure 6. Prevalence of Outpatient Behavioral Health Encounters among Active Duty U.S. Army Soldiers, by Sex, over the 5-Year Period 2016–2020

Table 3. Reasons for Outpatient Behavioral Health Encounters among Active Duty U.S. Army Soldiers, by Sex, over the 5-Year Period 2016–2020

Reason for BH Encounter	Men			Women		
	Total Encounters n (%)	Soldiers with a BH Encounter ^a n (%)	Encounters per Soldier ^b median (IQR)	Total Encounters n (%)	Soldiers with a BH Encounter ^a n (%)	Encounters per Soldier ^b median (IQR)
Any Outpatient Encounter	46,205,369	320,729	6 (2–17)	1,334,092	71,699	9 (3–23)
Encounters for Diagnosed Disorders						
Adjustment Disorder	772,773 (17)	112,707 (35)	4 (1–8)	326,019 (24)	37,732 (53)	4 (2–11)
Substance Use Disorder	735,904 (16)	55,060 (17)	7 (2–16)	88,890 (7)	6,664 (9)	6 (1–17)
Posttraumatic Stress Disorder	562,943 (12)	33,603 (10)	9 (3–22)	140,795 (11)	8,062 (11)	9 (3–23)
Mood Disorder	461,035 (10)	49,519 (15)	4 (1–10)	213,527 (16)	18,806 (26)	4 (1–13)
Anxiety Disorder	335,042 (7)	56,093 (17)	3 (1–7)	129,131 (10)	19,043 (27)	3 (1–8)
Encounters for BH-related Stressors						
Sleep Problems	631,209 (14)	142,896 (45)	3 (2–6)	95,919 (7)	24,790 (35)	3 (1–5)
Life Circumstances	475,118 (10)	139,501 (43)	2 (1–4)	136,666 (10)	35,131 (49)	2 (1–4)
Partner Relationships	153,355 (3)	34,456 (11)	2 (1–5)	40,714 (3)	9,433 (13)	2 (1–5)
Family Circumstances	149,451 (3)	33,044 (10)	2 (1–5)	45,761 (3)	10,515 (15)	2 (1–5)
Maltreatment Victim	55,817 (1)	13,115 (4)	2 (1–5)	33,702 (3)	7,570 (11)	2 (1–5)
Suicidal Ideation	35,982 (<1)	18,240 (6)	1 (1–2)	8,924 (<1)	4,836 (7)	1 (1–2)
Maltreatment Perpetrator	3,411 (<1)	1,094 (<1)	2 (1–3)	387 (<1)	161 (<1)	1 (1–2)
Self-Harm	1,130 (<1)	808 (<1)	1 (1–1)	472 (<1)	358 (<1)	1 (1–1)
Suicide Attempt	686 (<1)	583 (<1)	1 (1–1)	248 (<1)	200 (<1)	1 (1–1)

Legend:

BH = behavioral health IQR = interquartile range.

Notes:

^a Not mutually exclusive: each Soldier may have encounters for more than one reason, so percents do not total to 100.

^b BH encounters among Soldiers with any outpatient BH encounter for the specific BH disorder or BH-related stressor.

6.2.2 Hospitalizations

The annual rate of BH-related hospitalizations, i.e., hospitalizations in which ICD codes for BH disorders or BH-related stressors are noted, showed no significant trend across 2016–2020 (Figure 7). The hospitalization rate was higher for women (2.8 to 3.5 BH hospitalizations per 100 Soldiers) when compared to men (1.7 to 2.1 BH hospitalizations per 100 Soldiers).

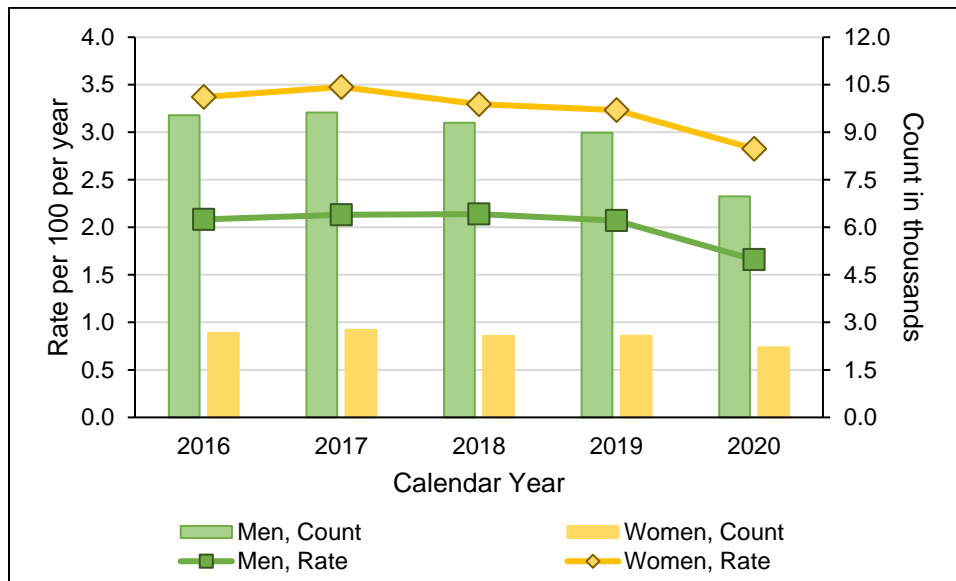


Figure 7. Annual Behavioral Health Hospitalizations, Active Duty U.S. Army Soldiers, Rate and Count by Sex, 2016–2020

During the 5-year period as a whole, 33,998 men (4.9% of male AD Soldiers) underwent 44,313 hospitalizations with BH codes indicating diagnosed disorders or BH-related stressors (Table 4). Similarly, 9,631 women (7.4% of female AD Soldiers) had 12,766 hospitalizations. The principal diagnoses noted among men were for substance use disorder (48%), followed by mood disorder (37%) and adjustment disorder (36%). The principal diagnoses noted for women were mood disorder (47%), followed by adjustment disorder (37%) and anxiety disorder (32%). The median number of bed-days was highest for PTSD (men 8 [4–28], women 8 [5–28]), followed by mood disorder (men 8 [5–19], women 7 [4–13]). Among BH-related stressors noted during hospitalizations, suicidal ideation (both men and women 27%) and sleep problems (men 27%, women 18%) appeared most often, along with a history of personal trauma (women 20%).

Table 4. Behavioral Health Reasons Indicated During Hospitalizations^{a,b} of Active Duty U.S. Army Soldiers, by Sex, over the 5-Year Period 2016–2020

BH Reasons during Hospitalization	Men			Women		
	Soldiers n (%)	Hospitalizations n (%)	Bed-Days ^c median (IQR)	Soldiers n (%)	Hospitalizations n (%)	Bed-Days ^c median (IQR)
Any BH Reason Code	33 998	44 313	6 (3–11)	9 631	12 766	5 (3–9)
Diagnosed Disorders Indicated						
Adjustment Disorder	12,213 (36)	13,824 (31)	7 (4–9)	3,546 (37)	4,040 (32)	6 (4–8)
Substance Use Disorder	16,423 (48)	20,920 (47)	6 (3–15)	2,635 (27)	3,396 (27)	6 (3–14)
Posttraumatic Stress Disorder	5,692 (17)	7,198 (16)	8 (4–28)	2,035 (21)	2,573 (20)	8 (5–28)
Mood Disorder	12,650 (37)	15,892 (36)	8 (5–19)	4,501 (47)	5,683 (45)	7 (4–13)
Anxiety Disorder	7,263 (21)	8,447 (19)	7 (4–16)	3,042 (32)	3,516 (28)	5 (3–9)
BH-related Stressors Indicated						
Sleep Problems	9,103 (27)	10,348 (23)	6 (3–16)	1,708 (18)	1,897 (15)	7 (3–14)
Life Circumstances	4,883 (14)	5,238 (12)	6 (4–9)	1,209 (13)	1,321 (10)	6 (4–8)
Partner Relationships	2,415 (7)	2,571 (6)	6 (4–8)	584 (6)	619 (5)	5 (4–8)
Family Circumstances	4,103 (12)	4,523 (10)	8 (5–17)	1,615 (17)	1,810 (14)	7 (5–14)
Maltreatment Victim	2,944 (9)	3,315 (7)	9 (6–20)	1,979 (21)	2,288 (18)	7 (5–15)
Suicidal Ideation	9,135 (27)	10,622 (24)	8 (5–16)	2,623 (27)	3,052 (24)	8 (5–15)
Self-Harm	4,167 (12)	4,673 (11)	7 (5–11)	1,669 (17)	1,921 (15)	7 (4–10)
Suicide Attempt	177 (<1)	180 (<1)	7 (5–12)	54 (<1)	56 (<1)	7 (4–9)

Legend:

BH – behavioral health IQR – interquartile range.

Notes:

^a The BH reasons given here were not necessarily the primary reason the Soldier was hospitalized. These reasons are descriptions of the BH-related ICD codes indicated in the medical records for the hospitalization.

^b Not mutually exclusive: more than one reason code may have been given over the course of a hospitalization, so percents do not total 100.

^c Bed-days are the number of days the Soldier was hospitalized, i.e., the length of the hospitalization.

6.3 Medical Readiness

Over the 2-year period 2019–2020, 27,394 Soldiers (men 21,081; women 6,313) had BH conditions that resulted in a temporary profile: 4% of male Soldiers and 7% of female Soldiers in the Army during that period. The demographic and military characteristics of Soldiers with BH profiles (Table 5) generally followed the same pattern as for AD Soldiers as a whole, although larger proportions of Soldiers with profiles were younger than age 25, in the junior enlisted ranks (E1–E4), or had only a high school education. Smaller proportions of Soldiers with profiles were Hispanic or commissioned officers.

Table 5. Characteristics of Active Duty U.S. Army Soldiers with Temporary Behavioral Health Profiles, by Sex, over the 2-Year Period 2019–2020

Characteristics	Men		Women	
	Total n	with BH Profile n (%)	Total n	with BH Profile n (%)
Total^a	494,186	21,081 (4)	92,987	6,313 (7)
Age				
17–24	193,874	10,222 (5)	39,642	3,352 (8)
25–34	188,093	7,037 (4)	34,969	2,025 (6)
35–44	87,206	3,186 (4)	14,354	780 (5)
45–64	25,013	636 (3)	4,022	156 (4)
Race-Ethnicity^b				
American Indian/ Alaska Native	3,338	198 (6)	800	78 (10)
Asian/Pacific Islander	27,967	961 (3)	6,829	364 (5)
Black	92,363	4,991 (5)	31,147	2,496 (8)
Hispanic	78,750	1,066 (1)	17,414	372 (2)
White	288,941	13,313 (5)	35,965	2,801 (8)
Marital Status^c				
Single/never married	219,172	9,815 (4)	39,939	2,702 (7)
Married	254,455	10,326 (4)	42,661	2,897 (7)
Formerly married ^d	20,526	939 (5)	10,376	713 (7)
Education Level^e				
Some high school/ high school diploma	316,738	16,041 (5)	50,619	4,347 (9)
Some undergraduate	38,122	1,631 (4)	6,652	481 (7)
Undergraduate degree	98,990	2,655 (3)	25,024	1,182 (5)
Graduate degree	37,969	645 (2)	10,170	296 (3)

Table 5. Characteristics of Active Duty U.S. Army Soldiers with Temporary Behavioral Health Profiles, by Sex, over the 2-Year Period 2019–2020 (continued)

Rank							
E1–E4	229,068	12,698	(6)	45,525	4,025	(9)	
E5–E6	128,720	4,948	(4)	21,397	1,334	(6)	
E7–E9	53,482	2,034	(4)	7,274	410	(6)	
W1–W5	12,055	390	(<1)	1,308	94	(7)	
O1–O10	70,861	1,011	(8)	17,483	450	(3)	

Legend:

E = Enlisted O = Commissioned Officer W = Warrant Officer.

Notes:

^a Total number of Soldiers includes those with missing information as noted below.

^b Men missing 2,827 from total, 552 from count with BH profiles. Women missing 832 from total, 202 from count with profiles.

^c Men missing 33 from total, 1 from count with BH profiles. Women missing 11 from total, 1 from count with profiles.

^d Includes widowed and divorced.

^e Men missing 2,367 from total, 109 from count with BH profiles. Women missing 522 from total, 7 from count with profiles.

Over the 2-year period 2019–2020, 30,581 temporary BH profiles were created (men 23,492; women 7,089). These conditions were not mutually exclusive: Soldiers could have more than one profile for the same or a different BH condition. Half the temporary BH profiles were due to adjustment disorder (Figure 8, men 7,128; women 2,266) and depressive disorder (men 3,919; women 1,464). Three conditions accounted for an additional quarter of the profiles: alcohol use disorder (men 2,664; women 304), PTSD (men 2,186; women 743), and anxiety disorder (men 1,730; women 749). The median number of consecutive limited duty days resulting from temporary BH profiles ranged from 58 to 91 days (Figure 8), depending on the condition.

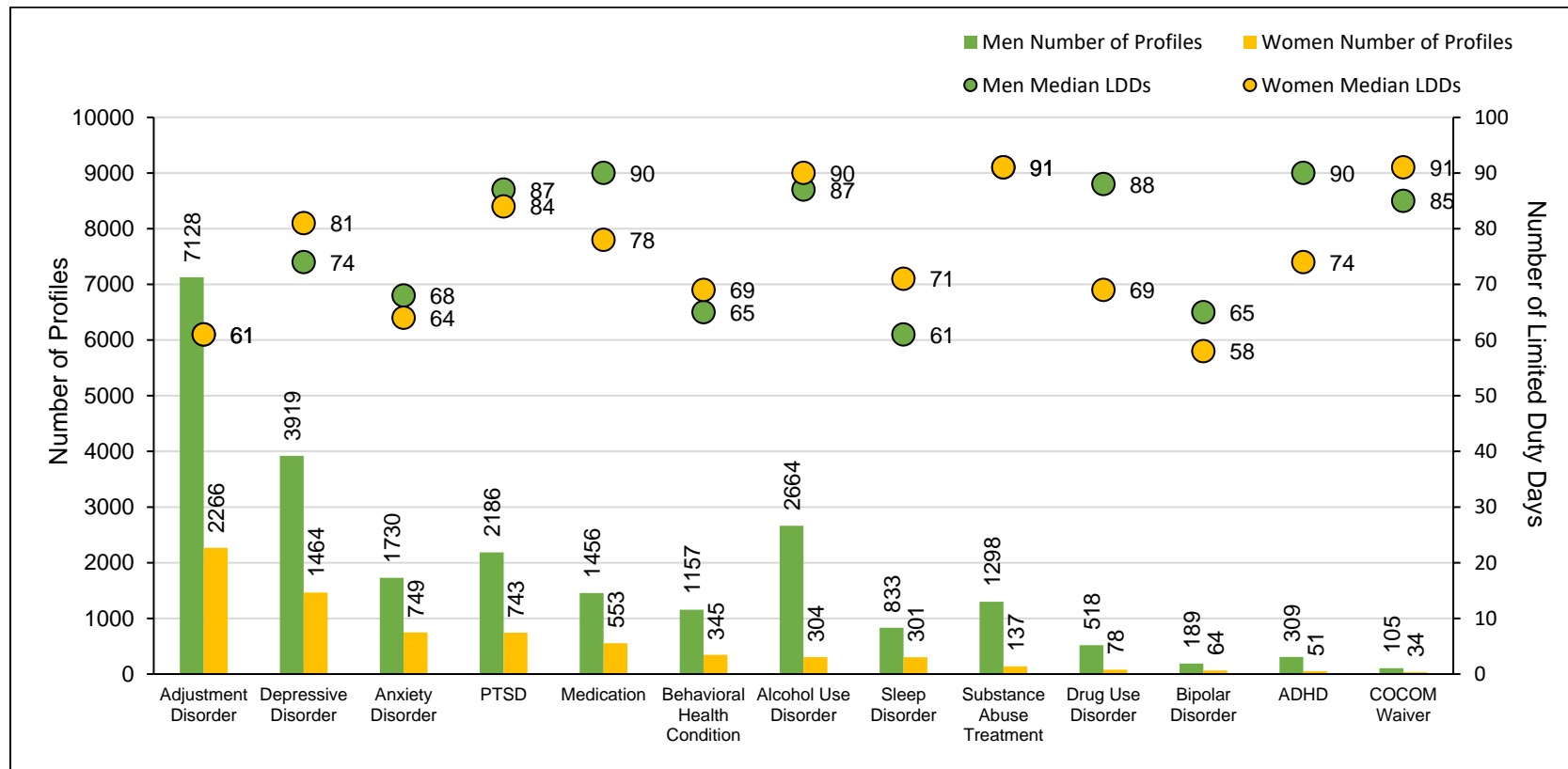


Figure 8. Temporary Profiles^{a,b} of Active Duty U.S. Army Soldiers by Behavioral Health Condition, by Sex, over the 2-Year Period 2019–2020

Legend:

ADHD = attention deficit/hyperactivity disorder COCOM = combatant command
 LDD = consecutive limited duty days PTSD = posttraumatic stress disorder

Notes:

^a Profiles are not mutually exclusive. Total temporary BH profiles were 30,581 (men 23,492; women 7,089).

^b The median limited duty days for adjustment disorder and for substance abuse treatment was the same for both men and women, so only one circle is visible for each condition.

7. DISCUSSION

7.1 Behavioral Health Burden

The burden of BH disorders in the U.S. Army is large. Each year, on average, 14% of male AD Soldiers (n=62,000) and 22% of female AD Soldiers (n=17,600) were diagnosed with at least one BH disorder. Prevalence over the 5-year period 2016–2020 was higher, including 29% of men (n=198,734) and 49% of women (n=51,402). The higher 5-year prevalence results in part from Soldiers who received a diagnosis in only 1 year being included in the count: they may have joined or left the Army during the period as part of the normal turnover of the population, their treatment may have concluded, they may have chosen not to return for additional care, or their BH disorder may have resolved.

Annual prevalence showed a small, but significant, decrease over time. However, the lowest prevalence occurred in 2020, suggesting that the decrease may have been a response to the COVID-19 pandemic, with its attendant stay-at-home recommendations. The next iteration of this report, which will include data through 2022, will clarify whether the prevalence of BH diagnoses continued to decrease or rebounded as remote health care access normalized and concerns about infection waned as immunization took hold.

Annual prevalence of diagnosed BH disorders among Soldiers is similar to 2020 estimates of any mental illness in the civilian population (men 16%, women 26%, Substance Abuse and Mental Health Services Administration (SAMHSA) 2021, Table 8.1B). This is consistent with estimates of BH prevalence in the AD Army in the Health of the Force report (U.S. Army Public Health Center (APHC) 2022) and across U.S. military services in the DoD Health of the Force report (Armed Forces Health Surveillance Division (AFHSD) 2022).

Female Soldiers had higher annual prevalence than male Soldiers for any BH disorder and for each category of disorder except alcohol and drug use disorders, although prevalence of psychosis and of attention deficit/hyperactivity disorder was similar for both sexes. This is consistent with findings in the civilian population (SAMHSA 2021; McClean et al. 2011; Grant et al. 2015, 2016) and across the U.S. Services (AFHSD 2021c, 2022). This difference may in part reflect a greater willingness by women to seek care (Terlizzi and Norris 2021) and the likelihood of encountering less stigma when they do.

The BH disorder diagnosed most often was adjustment disorder, affecting over half of the AD Soldiers who had any BH diagnosis (men 52%, women 68%) during the 5-year period. Estimates for all military services also find that adjustment disorder has the highest incidence: roughly double that for any other BH disorder (AFHSD 2021c). This is perhaps not surprising because Soldiers experience a host of stressors that could precipitate an adjustment disorder. Stressors unique to military service include frequent moves (i.e., permanent change of station (PCS)), temporary duty assignments, extended training events, and combat deployments, in addition to the common stressors of everyday life: birth, death, marriage, divorce, promotion. A future iteration of this report will investigate whether adjustment disorders resolve or are replaced by a different diagnosis such as PTSD or a mood disorder.

The next most common disorders were mood, anxiety, and posttraumatic stress disorders, as well as, among men, alcohol use disorder, as is the case across the U.S. military services (AFHSD 2022). Annual prevalence of these disorders diagnosed among Soldiers is similar to that among Service members (AFHSD 2022). Among civilians, however, estimates of prevalence are much higher. In the 2019 National Health Interview Survey, 15% of men and 22% of women screened positive for symptoms of depression (Villarroel and Terlizzi 2020) and 12% of men and 19% of women screened positive for symptoms of anxiety (Terlizzi and Villarroel 2020), whereas among Soldiers the prevalence of these disorders was less than 7% (mood disorders: men 2.8%, women 6.4%; anxiety disorders: men 2.8%, women 5.5%). The large difference in prevalence rates between Soldiers and civilians may in part result from how these disorders were assessed and measured. The prevalence reported here is based on diagnoses of Soldiers who sought care, whereas the NHIS estimates are based on screening measures (PHQ-8 and GAD-7) for the physical and behavioral health of civilians. It may be that if Soldiers were screened with the same instruments as the NHIS population, the prevalence estimates of Soldiers with mood, anxiety, and posttraumatic stress disorders would be higher as they would include Soldiers who had not sought care.

Annual prevalence of alcohol and drug use diagnoses was much lower among AD Soldiers (men: 2.4% and 0.7%, women: 1.6% and 0.4%, respectively, on average) than in the civilian population (men: 18% and 5%, women: 10% and 3%, respectively, Grant et al. 2015, 2016). This is not surprising because Soldiers face separation from Service following two serious alcohol-related incidents in 1 year or for two positive urinalysis tests for unauthorized use of controlled or illegal drugs ever during their career (DA 2020). Thus, in an example of the healthy worker effect (Chowdhury, Shah, and Payal 2017), most Soldiers with an alcohol or a substance use disorder may have already separated from the Army and thus are not counted in the prevalence estimates. Moreover, Army selection processes bar people with a history of substance use from service. Another possibility is that poor screening may fail to detect subclinical substance use disorders, resulting in incomplete accounting.

AD Soldiers show an increase in prevalence of diagnosed BH disorders with age. However, the greater odds of BH diagnosis with age is not evident in findings for civilian and Service members overall (AFHSD 2022; SAMHSA 2021; Goldstein et al. 2016; Hasin et al. 2018; Villarroel and Terlizzi 2020; Terlizzi and Villarroel 2020). This may be a cohort effect related to participation in the Iraq and Afghanistan wars. Soldiers older than 35 likely served during wartime, with potential exposures not only to combat but to high operations tempos and multiple deployments, in addition to the myriad stresses of 10-plus years of war. These cumulative stressors may have contributed to the increased BH prevalence among older Soldiers. If these Soldiers have been in BH care for some time and have managed their BH condition and career progression effectively, their experiences may provide valuable insights for increased resilience and retention among other similarly aged cohorts. If they have been newly diagnosed, that may reflect delays in care-seeking due to lack of time or anticipated stigma from peers and subordinates, anxiety over a pending transition to civilian life, or efforts to improve a disability rating. The next report in this series will examine the relationship between age and BH diagnosis in more detail by calculating BH incidence (i.e., first-time diagnoses), including how

close to separation first diagnosis occurs and the effect of time in service on the odds of BH diagnosis.

With respect to BH differences among race and ethnicity, Soldiers who identified as Black or as Native American had the greatest odds of BH diagnosis, compared with Soldiers who identified as Asian or Pacific Islander, who had the lowest prevalence. Findings in the civilian population are not strictly comparable, as they focus on specific disorders rather than any BH disorder. However, those prevalence estimates show no consistent pattern by race, with one exception: the lowest prevalence is consistently among people who identify as Asian, as this analysis also found (Grant et al 2015, 2016; Villaroel and Terlizzi 2020; Goldstein et al. 2016; Hasin et al. 2018). Future reports will assess specific disorders and will examine whether the distribution of Soldiers' demographic and military characteristics differ from one BH disorder to another. The high prevalence of diagnosed BH disorders among Black and Native American Soldiers, particularly women, will also be investigated further.

The consistent finding of low prevalence among Asian Americans (including Pacific Islanders) may indicate better mental health or less willingness to seek care. The latter may result from cultural norms but may also be due to the shortage of culturally sensitive providers, which may be an issue for other racial groups as well (Xu et al. 2011; Lee et al. 2021). The higher odds of BH diagnosis among Soldiers who identify as Black or as Native American may in part reflect historical and structural inequity, as well as lifetime exposure to discrimination and racism (McKinley et al. 2021; Williams 2018; John-Henderson and Ginty 2020).

The finding of higher odds of BH diagnosis among married than single Soldiers differs from results in the civilian population, where marriage is either protective or not significantly different from those who never married (Goldstein et al. 2016; Hasin et al. 2018; Wood, Goesling, and Avellar 2007). However, BH diagnosis is highest in both Soldiers and civilians who were formerly married, i.e., divorced or widowed (Goldstein et al. 2016; Hasin et al. 2018). It may be that the stresses of military life—deployment, PCS, difficulty maintaining spousal employment—impact married Soldiers more than single Soldiers. Certainly, relationship problems are frequently referenced in the medical record as a reason for BH encounters.

Few studies have examined the association between military rank and behavioral health prevalence. Those that have, such as those based on the Millennium Cohort Study, find that enlisted Soldiers have higher odds of PTSD than do officers (with both commissioned and warrant officers generally included in the category) (Armenta et al. 2018; Levin-Rector et al. 2018; Xue et al. 2015). The higher prevalence of BH diagnosis in senior enlisted Soldiers found in this analysis may in part be explained by the higher odds of BH diagnosis with age discussed above. Future analyses will examine this finding further by looking at BH incidence, specific disorders, and occupational specialty.

7.2 Behavioral Health Care Utilization

Half of all AD Soldiers over the 5-year period 2016–2020 had at least one medical encounter for behavioral health disorders or related stressors. This evidence that Soldiers are seeking care for

BH concerns suggests a decrease in perceived barriers to care. But this volume places an enormous strain on the BH care system due to the limited number of providers available to conduct treatment and the limited number of available and timely appointment slots. Nonetheless, the majority of outpatient medical encounters for BH disorders were directed to BH clinics, suggesting an appropriate usage of available resources. Encounters for sleep problems rarely took place in BH clinics, occurring primarily in specialty clinics, primary care, and purchased care venues. However, BH-related stressors, such as problems with work and family, account for a large percentage (19%) of encounters in direct care BH clinics. If Soldiers seeking help with these stressors can be referred to nonclinical counseling services such as MFLCs or Chaplains, that may increase capacity to support BH disorders that require more intensive, evidence-based treatment modalities.

Another significant problem among AD Soldiers is sleep disruption. In the Army, 49% of men and 34% of women who had any BH encounter during 2016–2020 had a medical encounter for sleep problems, which amounts to 20% of all AD Soldiers. This is similar to results from the Army Study to Assess Risk and Resilience in Service Members (STARRS), in which 22% of men and 28% of women met diagnostic criteria for insomnia (Polyné et al. 2021). Among civilians, sleep problems are only slightly less prevalent: in the 2020 National Health Interview Survey, 15% of U.S. adults reported trouble falling asleep and 18% had trouble staying asleep (Adjaye-Gbewonyo, Ng, and Black 2022). Poor sleep has myriad effects. The Millennium Cohort Study of military personnel found a significant association between insomnia symptoms and poor self-rated health, increases in lost workdays, lower odds of deployment, higher odds of early discharge from military service, and more health care utilization (Seelig et al. 2016). In addition, sleep problems are one of the criteria for diagnosing PTSD, major depression, and generalized anxiety disorder (American Psychiatric Association 2013).

With respect to overall BH treatment consistency, the median number of outpatient encounters for diagnosed BH disorders (four or less for BH disorders other than substance use and PTSD) suggests that some Soldiers are not returning sufficiently often for effective treatment. The interquartile range indicates that at least 25% of Soldiers diagnosed with a BH disorder had only a single medical encounter for that condition. A future analysis will examine the behavioral and social health outcomes of Soldiers diagnosed with a BH disorder who do not have further encounters with the BH system of care.

The number of encounters for PTSD (median 9, IQR 3–22) appears to be in line with a guideline from the American Psychological Association (APA) indicating that half of patients recover in 15–20 sessions of treatment (APA 2017). The number of encounters for substance use disorders (median 7, IQR 2–16) appears low for treatment of these chronic conditions, which are characterized by patterns of relapse and reengagement. The National Institute on Drug Abuse (NIDA) notes that reducing drug use generally requires at least 3 months of treatment and that longer durations are necessary for the best outcomes (NIDA 2018).

Over the 5-year period, 5% of male and 7% of female AD Soldiers had a hospitalization for BH disorders or BH-related stressors, with about 20% of those Soldiers hospitalized more than once. Moreover, BH hospitalizations were long, averaging 8 to 16 days, depending on the

condition. This is consistent with findings Service-wide, with BH disorders accounting for half of all hospital bed-days (AFHSD 2021b). For comparison, injuries, which affect more individuals, account for about 10% of bed-days, across all Services (AFHSD 2021b). In addition to their effect on readiness, noted below, these long hospitalizations are a large drain on medical resources.

7.3 Behavioral Health Readiness

Behavioral health impacts medical readiness. Soldiers who are hospitalized are not deployable, and Soldiers on BH profiles are also nondeployable pending administrative exemptions determined by Command. Over the 2-year period, 2019–2020, 27,394 Soldiers (4.7% of AD Soldiers) had a temporary BH profile with 2–3 months of limited duty days. As such, 2,814 Soldiers are not medically ready due to BH profiles on any given day (assumes 75 limited duty days). Over the 5-year period 2016–2020, 43,629 Soldiers (5.3%) were hospitalized an average of 9–10 days for BH disorders or BH-related stressors. These data indicate that 239 Soldiers are not medically ready due to BH hospitalization on any given day (assumes 10-day hospital stay). Together these data indicate that each day about 3,000 Soldiers (0.6% of the AD Army) are not medically ready for BH reasons. For comparison, roughly half of AD Soldiers incur one or more injuries over the course of a year (APHC 2022). Most injuries, however, result in fewer limited duty days (APHC 2022), as well as fewer and shorter hospitalizations (AFHSD 2021b).

8. RECOMMENDATIONS

8.1 Prevention

The numerous biological, social, and contextual factors contributing to BH disorders make prevention difficult. However, a combination of clinical and nonclinical interventions can address the varied predisposing, precipitating, and perpetuating factors associated with BH disorders. For instance, social support, spiritual engagement, and clinical intervention can impact BH disorders that occur in direct response to stressful events such as adjustment disorder and PTSD. While the medical record may capture some of the contextual BH-related stressors, such documentation is likely to be incomplete. These include, for example, the social determinants of health (SDoH), which encompass financial issues, family/relationship problems, lifestyle factors, social isolation, discrimination, and unsafe housing. Other contextual BH-related stressors include violence, abuse, and adverse childhood experiences. The following paragraphs suggest ways to enhance the positive contextual factors impacting Soldier health. Any initiatives undertaken to address these factors should be evaluated to determine their effectiveness, with evaluation plans being developed before implementation.

Myriad aids are in place to help Soldiers navigate the contextual factors affecting behavioral health. Army G-9 Family and Morale Welfare and Recreation (MWR) programs include classes in financial management. MFLCs are available to help Soldiers address family disputes via couples counseling, anger management, and problem-solving classes. But many of these services require Soldiers to recognize that there is a problem and search for help in resolving it. A marketing approach, especially one focused on the newest Soldiers, might raise awareness of

potential risk and contributing factors and provide resources to support Soldiers' health and careers.

New Soldiers could be encouraged to develop strategies for integrating into new military communities following a PCS, with the goal of avoiding social isolation or increased susceptibility to developing BH disorders, in addition to heightened risk of suicidal behavior. Some ideas include joining sports teams, CrossFit® gyms, book clubs, or churches. Furthermore, unit noncommissioned officers (NCOs) might suggest that Soldiers access the installation website to learn, in advance of PCS, where to find support services such as the installation's behavioral health clinics, MFLCs, and other resources. In addition, an evaluation of the Total Army Sponsorship Program (DA 2019a)—designed to assist Soldiers in adapting to a new installation—might identify best practices and gaps in effectiveness.

Sleep difficulties are noted often in the medical record and are the reason for many medical encounters. Adopting good sleep practices would decrease some of the stress of Army life and might help reduce the likelihood of future BH conditions (Johansson et al. 2021; Krystal 2012). Unit NCOs might recommend that Soldiers take control of their use of alcohol, caffeine, nicotine and other substances, as well as the amount of time they spend online. Master resiliency trainers (MRTs) might encourage Soldiers to explore and adopt the relaxation and mental quieting techniques that work for them. The Performance Triad (P3) website provides suggestions about how to manage shift work, how to prepare for and recover from occasional short sleep durations, and how to handle sleep in the training and tactical environments (P3 2023).

This analysis indicates that marriage and divorce are highly associated with having a BH disorder. Enhanced premarital and marital support might offset the contribution of marital discord to the development of BH disorders by providing Soldiers with tools to manage common marital difficulties, such as frequent PCSs, lack of time for the relationship, strains on spouses' careers, and the financial difficulties of single income families. While studies of premarital education have shown mixed results, a number have shown reduced odds of divorce and a greater likelihood of seeking couples counseling when necessary (Stanley et al. 2006, 2014; Williamson et al. 2014).

The association between age and BH disorders found in this analysis presents an opportunity to understand coping and resilience among older Soldiers. Interviewing or surveying senior leaders with BH conditions may reveal protective factors and positive behaviors that have enabled them to succeed in their military careers. Their experience may provide ideas about how to build resilience, foster success, and prevent worsening conditions.

8.2 Behavioral Health Care Management

Many Soldiers diagnosed with a BH disorder did not return for second encounters for that condition and 35% of medical encounters at the BH clinics were not for BH disorders but for other BH-related stressors. The inconsistent BH treatment course and large number of cases without BH diagnoses seen at BH clinics suggest that improvements in the triage system may

help shift some Soldiers to other venues such as Army Wellness Centers, Army Community Services (ACS), MFLCs, and Chaplains to maximize the flow, targeting, and capacity of BH care management. The DHA’s Targeted Care initiative takes this approach (Escalona, Sarver, and Pasley 2023), helping Soldiers and other Service members determine which care venue would serve to best address the concern for which care is sought. This initiative also makes greater use of enlisted BH technicians (68X) as provider extenders, including for triage, health care, and follow-up, rather than diverting them to activities and roles unrelated to behavioral health (DHA 2022; PHCoE 2019; Holliday et al. 2019).

8. POINT OF CONTACT

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APPENDIX A

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APPENDIX B

MEASURE DETAILS

Table B-1. Codes for Behavioral Health Encounters from the International Classification of Diseases, Tenth Revision

Encounter Category	ICD-10 Codes					
Behavioral Health	F01–F99 (excluding F17)					
Behavioral Health Screening	Z04.6, Z04.71, Z04.72, Z13.4					
Behavioral Health-Related Stressors						
Partner Relationship Problems	Z63.0					
Family Circumstance Problems	Z62, Z63.5–Z63.9					
Maltreatment	T74, T76, Z69, Z69.82					
Life Circumstance Problems	Z72.810, Z72.811, Z73–Z73.6, Z55–Z55.9, Z56–Z56.9, Z60–Z60.9, Z65–Z65.9					
Substance Abuse Counseling	Z7.14–Z71.42, Z71.5–Z71.52					
Personal Trauma History	Z91.4, Z62.81, Z69.010, Z69.11, Z69.81					
Suicidal Ideation	R45.851					
Suicide Attempt/Intentional Self-harm	Z91.5,	X83,	X83.XX,	T39.92X,	T36.0X2,	T36.1X2,
	T36.2X2,	T36.3X2,	T36.4X2,	T36.5X2,	T36.6X2,	T36.7X2,
	T36.8X2,	T36.9X2,	T37.0X2,	T37.1X2,	T37.2X2,	T37.3X2,
	T37.4X2,	T37.5X2,	T37.8X2,	T37.9X2,	T38.0X2,	T38.1X2,
	T38.2X2,	T38.3X2,	T38.4X2,	T38.5X2,	T38.6X2,	T38.7X2,
	T38.802,	T38.812,	T38.892,	T38.902,	T38.992,	T39.012,
	T39.092,	T39.1X2,	T39.2X2,	T39.312,	T39.392,	T39.4X2,
	T39.8X2,	T40.0X2,	T40.1X2,	T40.2X2,	T40.3X2,	T40.4X2,
	T40.5X2,	T40.602,	T40.692,	T40.7X2,	T40.8X2,	T40.902,
	T40.992,	T41.0X2,	T41.1X2,	T41.202,	T41.292,	T41.3X2,
	T41.42,	T41.5X2,	T42.0X2,	T42.1X2,	T42.2X2,	T42.3X2,
	T42.4X2,	T42.5X2,	T42.6X2,	T42.72,	T42.8X2,	T43.012,
	T43.022,	T43.1X2,	T43.2.02,	T43.212,	T43.222,	T43.292,
	T43.3X2,	T43.4X2,	T43.502,	T43.592,	T43.602,	T43.612,
	T43.622,	T43.632,	T43.692,	T43.8X2,	T43.92,	T44.0X2,
	T44.1X2,	T44.2X2,	T44.3X2,	T44.4X2,	T44.5X2,	T44.6X2,
	T44.7X2,	T44.8X2,	T44.902,	T44.992,	T45.0X2,	T45.1X2,
	T45.2X2,	T45.3X2,	T45.4X2,	T45.512,	T45.522,	T45.602,
	T45.612,	T45.622,	T45.692,	T45.7X2,	T45.8X2,	T45.92,
	T46.0X2,	T46.1X2,	T46.2X2,	T46.3X2,	T46.4X2,	T46.5X2,
	T46.6X2,	T46.7X2,	T46.8X2,	T46.902,	T46.992,	T47.0X2,
	T47.1X2,	T47.2X2,	T47.3X2,	T47.4X2,	T47.5X2,	T47.6X2,
	T47.7X2,	T47.8X2,	T47.92,	T48.0X2,	T48.1X2,	T48.202,
	T48.992,	T48.3X2,	T48.4X2,	T48.5X2,	T48.6X2,	T48.902,
	T48.992,	T49.0X2,	T49.1X2,	T49.2X2,	T49.3X2,	T49.4X2,
	T49.5X2,	T49.6X2,	T49.7X2,	T49.8X2,	T49.92,	T50.0X2,
	T50.1X2,	T50.2X2,	T50.3X2,	T50.4X2,	T50.5X2,	T50.6X2,
	T50.7X2,	T50.8X2,	T50.902,	T50.992,	T50.A12,	T50.A22,

Table B-1. Codes for Behavioral Health Encounters from the International Classification of Diseases, Tenth Revision (continued)

Encounter Category	ICD-10 Code(s)					
Behavioral Health-Related Stressors (continued)						
Suicide Attempt/Intentional Self-harm, (continued)	T50, T51.0X2, T52.0X2, T52.92, T53.5X2, T54.2X2, T56.0X2, T56.6X2, T57.1X2, T58.12, T59.2X2, T59.812, T60.3X2, T61.772, T62.2X2, T63.032, T63.112, T63.322, T63.442, T63.612, T63.812, T64.82, T65.3X2, T65.832, T71.152,	T50.A92, T51.1X2, T52.1X2, T52.2X2, T53.0X2, T53.6X2, T54.3X2, T56.1X2, T56.7X2, T57.2X2, T58.2X2, T59.3X2, T59.892, T60.4X2, T61.782, T62.8X2, T63.042, T63.122, T63.332, T63.452, T63.622, T63.822, T65.0X2, T65.4X2, T65.892, T71.162,	T50.B12, T51.2X2, T52.2X2, T53.1X2, T53.7X2, T54.92, T56.2X2, T56.8X2, T57.3X2, T58.8X2, T59.4X2, T59.92, T60.8X2, T61.8X2, T62.92, T63.062, T63.192, T63.392, T63.462, T63.632, T63.832, T65.1X2, T65.5X2, T65.92, T71.192,	T50.B92, T51.3X2, T52.3X2, T53.2X2, T53.92, T54.92X, T56.3X2, T56.892, T57.8X2, T58.92, T59.5X2, T59.92, T60.92, T61.92, T63.002, T63.072, T63.2X2, T63.412, T63.482, T63.692, T63.892, T65.212, T65.6X2, T71.112, T71.222,	T50.Z14, T51.8X2, T52.4X2, T53.3X2, T54.0X2, T55.0X2, T56.4X2, T56.92, T57.92, T59.0X2, T59.6X2, T60.1X2, T61.02, T62.0X2, T63.012, T63.082, T63.302, T63.422, T63.512, T63.712, T63.92, T65.222, T65.812, T71.122, T71.232,	T50.Z92, T51.92, T52.8X2, T53.4X2, T54.1X2, T55.1X2, T56.5X2, T57.0X2, T58.02, T59.1X2, T59.7X2, T60.2X2, T61.12, T62.1X2, T63.022, T63.092, T63.312, T63.432, T63.592, T63.792, T64.02, T65.292, T65.822, T71.132,
Sleep Disorder	F51, G47					
Suicide	U03, X60–X84, Y87.0					

Legend:
ICD-10 = International Classification of Diseases, Tenth Revision

Table B-2. Codes for Behavioral Health Diagnoses from the International Classification of Diseases, Tenth Revision

Diagnosis Category	ICD-10 Diagnosis Code(s)
Attention-Deficit/Hyperactivity Disorder (ADHD)	F90
Alcohol Use Disorders	F10
Adjustment Disorders	F43.2, F43.8–F43.9
Anxiety Disorders	F40–F42
Conduct/Emotional Disorder	F91–F94, F98
Developmental Disabilities	F80–F89
Eating Disorder	F50
Gender Identity Disorder	F64
Intellectual Disabilities	F70–F79
Mood Disorders	
Major Depression	F32–F33
Other Depression	F34.1, F34.8–F34.9
Bipolar, Manic, or Cyclothymic Disorder	F30–F31, F34.0
Persistent/Unspecified Mood Disorders	F39
Organic Conditions	F01–F04
Other Behavioral Health Disorders	F05–F09, F25, F48, F53–F55, F63, F68.8, F95, F98
Personality Disorders	F21, F60
Psychoses	
Schizophrenia	F20
Delusional Disorders	F22
Other Psychosis Not Due to Substance or Known Physiological Condition	F23–F25, F28–F29
Posttraumatic Stress Disorder	F43.1
Sexual Disorder	F62, F65–F66
Sleep Disorders	F51
Sexual Disorder	F62, F65–F66
Sleep Disorders	F51
Somatiform/Dissociative Disorders	F44, F68.1, F48.1, F45
Substance Use Disorders	F11–F19
Unspecified Behavioral Health Disorders	F59, F69, F99

Legend:

ICD-10 = International Classification of Diseases, Tenth Revision

Table B-3. Provider Codes for Behavioral Health-Credentialed Providers

Care Source	Provider Specialty	Provider Specialty Code
Direct Care	Psychiatrist	070
	Child Psychiatrist	071
	Psychoanalyst	072
	Psychiatric Resident/Intern with License	073
	Physicians/Psychiatry and Neurology/Addictive/Psychiatry	076
	Psychiatry Consultant	505
	Psychiatric Nurse Practitioner	611
	Clinical Psychologist	702
	Social Worker (providing therapy)	703
	Psychiatry	953
	Psychology	954
Purchased Care	Psychiatry	26
	Clinical Psychologist (Billing Independently)	62
	Certified Clinical Social Worker	85
	Clinical Psychiatric Nurse Specialist	91
	Certified Marriage and Family Therapist	94

Table B-4. MEPRS Codes by Clinic Type

Clinic Type	MEPRS Code(s)
Embedded Behavioral Health	BFD4
Multi-Disciplinary Behavioral Health	BFDA, BFDB, BFDC, BFDD, BFDE, BFDF, BFDG
Other Direct Behavioral Health	BFA5, BFAA, BFAB, BFAC, BFAE, BFBA, BFBB, BFBC, BFCA, BFCC, BFCS, BFD2, BFDH, BFDI, BFDK, BFDL, BFDN, BFDR, BFDT, BFDY, BFEA, BFEQ, BFES, BFZA, BFZW
Primary Care	AAA, AAN, ACB, ABH, ADA, ADD, ADE, ADX, ADZ, AGA, AGD, BAA, BBA, BBD, BBL, BCA, BCB, BDA, BDB, BDX, BDZ, BG, BHA, BHB, BHF, BHG, BHH, BHI, BHZ, BLB, DJE, FBB
Specialty Clinics (e.g., neurology)	AAF, AAJ, AAZ, ABA, ABD, ABE, ABF, ABG, ABK, AEA, AFA, BAB, BAC, BAE, BAF, BAG, BAJ, BAK, BAL, BAM, BAN, BAO, BAP, BAQ, BAR, BAS, BAV, BBA, BBB, BBC, BBD, BBF, BBI, BBK, BBM, BBN, BCD, BEA, BED, BEF, BHC, BHD, BHE, BIA, BJA, BKA, BLA, CAA, DCA, DFA, DGA, DGE, DHA, FCA, FEA
Special Public Health Programs (e.g., behavioral health promotion and prevention)	FA, FB
Substance Use Clinic	AFB, BFF

Legend:

MEPRS = Medical Expense and Performance Reporting System

APPENDIX C

ADDITIONAL TABLES

Table C-1. Annual Prevalence of Diagnosed Behavioral Health Disorders among Active Duty U.S. Army Soldiers, 2016–2020, by Sex, with Test for Trend

	Prevalence (%)					Trend ^a	
	2016	2017	2018	2019	2020	β	p-value
Men							
Any BH Disorder	14.95	15.05	13.93	13.89	12.56	−0.006	.021
Adjustment Disorder	6.97	6.48	6.20	6.23	5.62	−0.294	.012
Mood Disorder	3.33	3.09	2.69	2.58	2.35	−0.246	.002
Anxiety Disorder	3.54	3.14	2.63	2.47	2.37	−0.300	.010
PTSD	2.85	2.49	2.07	1.95	1.81	−0.261	.007
Alcohol Use Disorder	1.76	2.84	2.70	2.67	2.29	0.089	.594
ADHD	1.16	1.00	0.89	0.87	0.83	−0.079	.016
Drug Use Disorder	0.43	0.86	0.76	0.78	0.65	0.036	.578
Personality Disorder	0.12	0.12	0.11	0.12	0.12	<−0.001	.815
Psychosis	0.09	0.08	0.08	0.08	0.07	−0.003	.074
Eating Disorder	0.01	0.01	0.01	0.02	0.02	<−0.001	.134
Women							
Any BH Disorder	23.58	23.39	21.59	21.77	21.13	−0.007	.025
Adjustment Disorder	13.56	13.15	12.53	12.85	12.41	−0.260	.049
Mood Disorder	7.73	7.18	6.06	5.74	5.46	−0.597	.007
Anxiety Disorder	6.36	6.04	5.14	4.97	5.03	−0.372	.030
PTSD	3.42	3.20	2.77	2.86	2.73	−0.171	.034
Alcohol Use Disorder	1.06	1.82	1.75	1.65	1.52	0.074	.516
ADHD	1.25	1.12	0.91	0.85	0.94	−0.091	.067
Drug Use Disorder	0.24	0.51	0.46	0.50	0.44	—	1.000
Personality Disorder	0.37	0.40	0.34	0.40	0.41	0.007	.513
Psychosis	0.09	0.09	0.08	0.07	0.07	−0.005	.005
Eating Disorder	0.13	0.15	0.14	0.16	0.14	0.003	.551

Legend:

BH = behavioral health

PTSD = posttraumatic stress disorder

ADHD = attention-deficit/ hyperactivity disorder.

Note:

^a Significant trend if $p < .05$, as indicated with bold type. Results from linear regression except from Jonckheere-Terpstra test for drug use disorder among women where prevalence did not follow a normal distribution.

Table C-2. Characteristics of Active Duty U.S. Army Soldiers with Behavioral Health Encounters, ^a by Sex, over the 5-Year Period 2016–2020

Characteristics, n (%) ^b	Men		Women	
Total ^c	322 389	(46)	71 995	(55)
Age				
17–24	97 763	(35)	26 686	(47)
25–34	118 925	(46)	27 567	(58)
35–44	75 830	(64)	13 061	(69)
45–64	29 871	(73)	4 681	(74)
Race-Ethnicity				
American Indian/Alaska Native	2 437	(50)	690	(58)
Asian/Pacific Islander	15 932	(42)	4 403	(49)
Black	71 477	(55)	27 348	(62)
Hispanic	46 324	(44)	11 750	(51)
White	183 228	(44)	27 035	(52)
Marital Status				
Single/Never Married	104 219	(34)	24 870	(45)
Married	198 133	(55)	36 179	(60)
Formerly Married ^d	20 008	(66)	10 935	(74)
Education Level				
Some High School/High School Diploma	204 281	(44)	40 518	(54)
Some Undergraduate	31 797	(58)	6 406	(67)
Undergraduate Degree	58 980	(46)	17 533	(54)
Graduate Degree	26 016	(54)	7 210	(56)
Rank				
E1–E4	135 085	(39)	34 465	(50)
E5–E6	91 358	(53)	18 991	(68)
E7–E9	50 430	(69)	7 289	(76)
W1–W5	9 803	(61)	1 238	(71)
O1–O10	35 713	(40)	10 012	(46)

Legend:

E = Enlisted

O = Commissioned Officer

W = Warrant Officer

Notes:

^a Includes both outpatient encounters and hospitalizations.

^b Percentage is out of all AD Soldiers with that characteristic.

^c Total number of Soldiers includes those with missing information: race (men: n=2991, women: n=769), education (men: n=1315, women: n=328), marital status (men: n=29, women: n=11).

^d Includes widowed and divorced.

GLOSSARY

ACRONYMS AND ABBREVIATIONS

ACS

Army Community Services

AD

Active Duty

ADHD

Attention Deficit/Hyperactivity Disorder

AFHSB

Armed Forces Health Surveillance Branch (now Division)

AFHSD

Armed Forces Health Surveillance Division

aOR

adjusted odds ratio

APA

American Psychological Association

APHC

U.S. Army Public Health Center (now Defense Centers for Public Health–Aberdeen)

AR

Army Regulation

BH

behavioral health

BSHOP

Division of Behavioral and Social Health Outcomes Practice

CI

confidence interval

COCOM

combatant command

COVID

Coronavirus disease 2019

Public Health Report No. S.0094101.3-23, Behavioral Health Monitoring, Active Duty U.S. Army Soldiers, 2016–2020

DCPH-A

Defense Centers for Public Health–Aberdeen, formerly U.S. Army Public Health Center

DHA

Defense Health Agency

DMDC

Defense Manpower Data Center

DoD

Department of Defense

DX1

Primary diagnosis in a medical record

E1–E9

Enlisted grade

GAD-7

Generalized Anxiety Disorder Assessment, a screening tool based on 7 questions

ICD-10

International Classification of Diseases, Tenth Revision

IQR

Interquartile range

JBLM

Joint Base Lewis-McChord

LDD

limited duty days

MDR

Military Health System Data Repository

MEPRS

Medical Expense and Performance Reporting System

MFLC

marriage and family life counselors

MHS

Military Health System

MODS

Medical Operational Data Systems

MRT

Master resiliency trainer

MWR

Family and Morale Welfare and Recreation programs

NCO

Noncommissioned officer

NHIS

National Health Interview Survey

NIDA

National Institute on Drug Abuse

O1–O10

Commissioned Officer grade

OR

odds ratio

P3

Performance Triad

PCS

permanent change of station

PHCoE

Psychiatric Health Center of Excellence

PHQ-8

Patient Health Questionnaire, a screening tool for depression based on 8 questions

PTSD

Posttraumatic stress disorder

SAMHSA

Substance Abuse and Mental Health Services Administration

SDoH

Social determinants of health

Public Health Report No. S.0094101.3-23, Behavioral Health Monitoring, Active Duty U.S. Army Soldiers, 2016–2020

W1–W5

Warrant Officer grade