Posttraumatic Stress Disorder & Depression in Female Service Members: Findings From a 2010 – 2016 Literature Review

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The Psychological Health Center of Excellence (PHCoE) within the Defense Health Agency (DHA) sought to better understand the current state of the science of the unique mental health (MH) needs of female service members, both active duty and veterans, as well as gender differences and disparities in the delivery, effectiveness, barriers and access to mental health treatment and prevention services.


A broad literature search was performed to identify studies that examined the mental health and substance use needs of women service members between 2010 and 2016:

- 354 publications met initial inclusion criteria
- 179 publications were included in this report following review of full text and validation of the primary focus of the papers
- 120 studies were exclusively active duty or veteran women and were emphasized
- 95 additional studies on both male and female service members and veterans that reported results by gender were included to augment the findings

The number of studies focused on female service members has increased since the IMHS Strategic Action #28 literature review, particularly on the topics of depressive disorders and posttraumatic stress disorder (PTSD).

Nineteen publications that focused on posttraumatic stress disorder (PTSD) in female active duty (AD) service members (including National Guard/Reserve) and Veterans met the review criteria. An additional four publications examining gender differences in PTSD findings were also included.

- A large cross-sectional study of female Army enlistees (n = 42,397) concluded that combat trauma is a risk factor for post-deployment PTSD (Adams et al., 2016); cumulative combat exposure was the factor most likely to predict mental health (MH) problems for both men and women.
- Studies examining gender differences and PTSD found that women service members are at higher risk for post-deployment PTSD (Crum-Cianflone & Maguen, 2014; Jacobson et al., 2015; Kinkade et al., 2015; Klingsenstern, Tsai, Mota, Southwick, & Pietrzak, 2014; Maguen, Cohen, Ren, et al., 2012; Maguen, Luxton, Skop, & Madden, 2012; Millegan et al., 2015; Seelig et al., 2012; Stahlman et al., 2015; Street et al., 2013; Walsh et al., 2014; Wooten, 2012).
- A study of MH comorbidities in male and female Veterans with PTSD found that women (n = 7,255) were significantly more likely than men (n = 67,238) to present with comorbid depression (70 percent), anxiety disorders (32 percent, and eating disorders (2 percent) (Maguen, Cohen, Ren, et al., 2012).
- A study of Veterans (n = 3,848) reported that those with chronic pain were more likely to be women with a MH diagnosis, notably PTSD, compared to those without chronic pain (Higgins et al., 2014).
- In a national cross-sectional survey of female Veterans (n = 3,585), those with mild and moderate-to-severe alcohol or other drug had higher rates of comorbid PTSD; non-users of VA services who were diagnosed with PTSD had a high prevalence of alcohol misuse (Hoggatt, Williams, Der-Martirosian, Yano, & Washington, 2015).
- In surveillance data (2001 – 2010) of all women service members who served in the Army, Air Force, Marine Corps, and Coast Guard who completed at least one week of deployment, the frequency of PTSD diagnoses increased relative to deployment length and number; PTSD was more frequently diagnosed when deployments were longer than nine months (APHHC, 2012a).
- There was a paucity of investigations regarding the role gender may play in treatment selection and efficacy of gender-specific treatment modalities.
- We identified several small studies examining PTSD treatment approaches in samples of women-only Veterans, but their generalizability is limited, because of methodological flaws in the study design and/or small sample size.

Most studies did not distinguish between mild, moderate, or major depressive disorders.

Thirteen publications on depression in AD and Veteran women met the review criteria; an additional 15 publications which presented findings separately by gender were included. Depression disorders were 1.4 to 1.9 times more often diagnosed in AD women compared to AD men, based on the presence of MH-related ICD-9-CM V-codes in the Defense Medical Surveillance System records of AD Service members from 1 January 2001 to 31 December 2011 (APHHC, 2012b).

The estimated prevalence of depression among female service members ranged from 4.3 percent to 7.5 percent (Ursano, Wang, et al., 2016).
- In a study of 1,700 Veteran and AD (n = 346) women, 46.5 percent of women had a lifetime diagnosis of Major Depressive Disorder (MDD), significantly more than men (36.3 percent) (Curry et al., 2014); there were no gender differences in age of onset or age of assessment.
- Female National Guard (NG) soldiers were diagnosed with depression significantly more frequently than men, based on data from a longitudinal study of MH outcomes after OIF deployment (Keble et al., 2011); depression prevalence was as high as 27 percent in this study, which also examined associations among depressive symptoms, diagnosable depression, deployment and combat exposure.
- Data from the Millennium Cohort Study showed a significant positive association between combat exposure during deployment and new onset depression among 10,178 women service members who had not been previously diagnosed with depression (Wells et al., 2010).

- Women who experienced combat were 1.55 times more likely to report depressive symptoms than those who did not deploy; of note, women who deployed without combat exposure were significantly less likely to be diagnosed with depression than women who had not deployed (Seelig et al., 2012).
- As the level of combat exposure increased, the risk of depression in women increased (Adams et al., 2016).
- A systematic literature review of 10 studies revealed that women with combat experience were at higher risk for depression, while men were at higher risk for substance abuse (Conard & Sauls, 2014).
- The incidence of perinatal depression (PND), which includes both the prenatal and postpartum periods, is estimated to be as high as 24 percent in female service members; similar civilian studies provided incidence rates ranging from 5 to 25 percent (Klaman & Turner, 2016).

- The highest prevalence of PND symptoms (16.6 percent) was found in female service members who had deployed after childbirth and who experienced combat exposure (Nuyen, 2013; Klaman & Turner, 2016).

In a review of 86 articles on interventions for depression in women Veterans, only 14 reported on gender differences (Duan-Porter et al., 2015).