Veteran Women: Mental Health–Related Consequences of Military Service

A review of recent research and its relevance for nurses in all settings.

ABSTRACT: The last two decades have seen increasing numbers of women entering all branches of the U.S. armed forces. Now that women in the military are no longer prohibited from holding direct combat positions, they are often exposed to traumatic events that place them at higher risk for mental health conditions. Nurses working within the Veterans Affairs (VA) system and those working in non-VA settings are likely to encounter female veterans. It's essential for all nurses to be knowledgeable about the mental health issues commonly seen in this population, and to understand the importance of screening, not only for mental health issues but also for physical conditions that may be related to service.

Numerous studies have focused on the mental health effects of deployment among military men, but very few have been conducted among military women. To learn more, the literature was searched for relevant articles published between January 2005 and December 2015. The research supports the contention that both active-duty and veteran women are at increased risk for postdeployment mental health problems, including posttraumatic stress disorder, military sexual trauma, and suicide. This article discusses the relevant research; identifies gaps in the literature; and addresses the nursing practice implications, including screening.

Keywords: female veterans, mental health, military, military sexual trauma, posttraumatic stress disorder, suicide, traumatic brain injury, veteran women

Women have served in every military conflict in the history of the United States, beginning with the Revolutionary War.[1] They currently constitute about 15% of U.S. active military forces and 19% of reserve units, and are the fastest-growing group of U.S. military veterans.[2] Historically, women have served mainly as nurses and clerical staff, but during the past two decades, the role of women in the military has expanded significantly. Women now also serve in positions as varied as military police, convoy transportation personnel, intelligence officers, pilots, medics, and mechanics; many work in combat-related positions that directly expose them to enemy fire, resulting in both physical and psychological trauma.[3]

The Department of Defense (DOD) Military Health System provides comprehensive health care to active-duty and retired military personnel. The majority of veterans with service-connected disabilities receive health benefits through the U.S. Department

Kori LaVonda, a homeless Army veteran, during a graduation ceremony from the Renew program, an intensive 12-week therapy program for female veterans who have experienced military sexual trauma, in Long Beach, California. Photo by Monica Almeida / New York Times / Redux.

of Veterans Affairs (VA), with the rest receiving community-based care through its recently expanded programs. In the past, the VA focused on the health care needs of male veterans; as the population of female veterans has grown, the VA has directed more of its attention to their health care needs. In 1980, for the first time, the U.S. Census Bureau asked women whether they had ever served in the military; shortly afterward, Congress granted veteran status to those who had.[4] In 1988, the Veterans Health Administration (VHA) created the Women Veterans Health Program to provide these veterans with access to cost-effective medical and psychosocial care[4]; in 2012, the program's name was changed to Women's Health Services, reflecting an expansion of services that included more comprehensive primary care.[5] Between 2000 and 2013, the number of veteran women using VA health care services more than doubled, rising from 159,000 to 390,000.[6] And nurses working in various non-VA settings are increasingly likely to encounter female veterans as well. It's essential for all nurses to be knowledgeable about the mental health issues commonly seen in this population.

Veterans of both sexes who have served in recent or current conflicts—namely Operation Iraqi Freedom (OIF) and Operation New Dawn (OND), both in Iraq, and Operation Enduring Freedom (OEF) in Afghanistan—have experienced a variety of health concerns, including traumatic brain injury (TBI) from exposure to improvised explosive devices and hazardous exposures to certain chemical, physical, or environmental materials.[7] Deployment can lead to a variety of stressful circumstances, including combat exposures, separation from one's family, and working and living with troops. The recent conflicts have been characterized by multiple deployments of unusually long duration, leaving less "dwell time," the amount of time service members spend at their home stations between deployments. Dwell time affords service members a mental and physical break from combat and gives them time to reconnect with family. There is evidence linking dwell time to postdeployment mental health.[8]

More than one-third of all veterans returning from Iraq and Afghanistan have received mental health diagnoses, with posttraumatic stress disorder (PTSD) the most prevalent.[9] Rates of TBI, depression, anxiety,

suicide, and substance abuse are also elevated in this population.[9-12] One recent literature review found "clear evidence of higher rates of homelessness, alcohol abuse, domestic violence, relationship breakdown, and criminality" among veterans with untreated mental health conditions.[13]

To date, most of the research concerning deployment-related mental health has been conducted in predominantly male populations; and it has focused largely on combat exposures, such as insurgent attacks and witnessing injury or death, stressors that have been shown to contribute to the development of mental health disorders. Research specific to the mental health of both active-duty servicewomen and veteran women is limited. One study by Schnurr and colleagues, conducted among female veterans with PTSD, found that, of the lifetime traumas they reported, sexual trauma (including military sexual trauma) was the most common, followed by physical assault; combat exposure was the least common.[14]

"symptom clusters" that are necessary for a PTSD diagnosis: intrusion (such as "recurrent, involuntary, and intrusive distressing memories" or nightmares), avoidance (such as avoidance of people or places that serve as reminders of the trauma), negative alterations in cognitions or mood (such as dissociative amnesia or feelings of alienation from others), and alterations in arousal and reactivity (such as self-destructive or aggressive behaviors, or an exaggerated startle response).[15]

A substantial amount of research has been conducted regarding the consequences—primarily the mental health consequences—of deployment and reintegration.[16-18] There is evidence suggesting that military women in particular may experience severe health outcomes following deployment, and that deployment and combat exposures can increase the risk of developing PTSD. For example, Seelig and colleagues prospectively studied associations between combat deployment and mental health in more than 17,000 U.S. military women, using data from the

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This article synthesizes the recent research on mental health conditions that affect female veterans, including PTSD, military sexual trauma, and suicide; identifies gaps in the literature; and addresses the practice implications for nurses.

Literature review. A literature search was performed to identify relevant articles published between January 2005 and December 2015 using the MEDLINE and CINAHL databases. The following search terms were used: *mental health*, *psychological health*, *psychiatric health*, *women*, *military*, *posttraumatic stress disorder*, *military sexual trauma*, *military women*, *deployment*, and *traumatic brain injury*. All English-language literature reviews, case studies, and research studies (of any design) on mental health in military and veteran women published in peer-reviewed journals were considered for inclusion. All abstracts and full-text manuscripts were reviewed for additional relevance.

PTSD

PTSD can be precipitated by a variety of traumatic events, including combat, physical assault, sexual assault, and noncombat war-zone exposure. The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*, released in 2013, describes four

Millennium Cohort Study, a 21-year longitudinal study examining the health effects of military service.[19] They found that women who were deployed and had combat exposure reported symptoms of a mental health condition, including PTSD, at nearly twice the rate seen in nondeployed women.

Several studies have investigated the effects of increased stress among military women and its relationship to the development of PTSD. In a study conducted through the VA's Health Services Research and Development Service, Mattocks and colleagues surveyed 19 female veterans of OIF and OEF using semi-structured interviews.[20] The participants identified stressful military experiences (including combat-related experiences, military sexual trauma, and separation from family) and postdeployment reintegration problems as major stressors. Thirty-two percent had been diagnosed with PTSD. In a larger pilot study, conducted by Dutra and colleagues with partial support from the VA's National Center for PTSD, 54 active-duty servicewomen were evaluated regarding their exposure to combat experiences and military sexual harassment.[21] Participants completed screenings for PTSD, sexual harassment, and other combat-related experiences within three months after returning from Iraq. Approximately one-third of the

participants showed either clinical or subclinical levels of PTSD symptoms; 11% screened positively for PTSD. Between 9% and 17% reported one or more symptoms of depression.

It's been established that exposure to traumatic events, such as deployment-related combat, can increase the risk of PTSD in military men.[22] Given the expanded roles of women in the military, it's increasingly important to understand the differences in how men and women respond to such events. Further research specific to the experiences of female veterans is needed.

TBI

One direct consequence of war-zone deployment is an increased risk of TBI. Research investigating the effects of combat-related TBI has focused primarily on men, simply because until recently relatively few women experienced combat. Over the past decade, as increasing numbers of women have been deployed to combat zones, many have experienced head trauma.[23] For both sexes, the vast majority of cases involve mild TBI or concussion.[23] These injuries are often subtle and are characterized by a confused or disoriented state lasting less than 24 hours, with imaging studies yielding inconclusive results. Of the 182,886 cases of TBI reported to the Armed Forces Health Surveillance Center between January 2000 and December 2012, 12% were women.[24]

MILITARY SEXUAL TRAUMA

Sexual trauma is a global phenomenon affecting men and women of every race, in every culture, and in every socioeconomic group.[25] But since the early 1990s there has been an alarming increase in incidents of military sexual trauma reported by U.S. servicewomen.[25,26] The VA defines military sexual trauma as "sexual assault or repeated, threatening sexual harassment that occur[s] while a veteran was in the military"; it includes "any sexual activity in which one is involved against one's will."[27] In an annual report on sexual assault in the military, published in 2014, the DOD revealed that overall reported rapes and sexual assaults had increased 50% in just one year, from 3,374 cases in 2012 to 5,061 cases in 2013.[28]

Estimates of the incidence of military sexual trauma among women vary. Kelly and colleagues have stated that military sexual trauma is reported by 20% to 40% of female veterans.[17] In a large study by Kimerling and colleagues, conducted among more than 125,000 OIF and OEF veterans who had received VHA health care services, 15% of the female veterans reported military sexual trauma.[29] And an analysis of data from the VHA's universal screening program for military sexual violence found that 22% of women reported experiencing military sexual trauma.[30] It's believed that the actual percentage is higher, with military culture fostering victims' fear of reprisals or promoting a quid pro quo—offers of benefits in exchange for silence. One qualitative study by Burns and colleagues explored the experiences and perceptions of military sexual trauma among servicewomen deployed overseas.[31] Factors identified as contributing to military sexual trauma included deployment dynamics, military culture, and lack of consequences for perpetrators. Barriers to reporting included fear of being blamed and not believed, stigma, and confidentiality concerns; unit cohesion was named both as a facilitator of and as a barrier to reporting.

Military sexual trauma has been linked to significant mental health issues, including PTSD, anxiety, and depression.[17,29,32] In a study by Kelly and colleagues of 135 female veterans who sought mental health care services, 83% were found to have suffered military sexual trauma.[17] A study by Katz and colleagues, assessing readjustment to civilian life among 15 female veterans of OIF and OEF, found that those who had suffered military sexual trauma had greater difficulties with readjustment, particularly in social domains.[33] These difficulties included feelings of alienation and isolation, feeling unneeded, and "having difficulty going from 'soldier' to 'girl.'"

The effects of multiple traumas—specifically, sexual trauma during deployment coupled with combat–related trauma—on female veterans' mental health and ability to reintegrate into society are less well understood. Further research in this area is needed.

HOMELESSNESS

According to a report from the U.S. Department of Housing and Urban Development, in January 2014, 578,424 people were homeless on any given night; of these, 49,993 were veterans, including 4,722 women.[34] Of particular concern is that veterans are more likely than their civilian counterparts to experience homelessness.[35] And mental health issues are associated with an increased risk of homelessness.[36]

One study found that veteran women were two to four times more likely to be homeless than nonveteran women.

But there is scant research investigating homelessness among veteran women. A study by Gamache and colleagues found that veteran women were two to four times more likely to be homeless than nonveteran women.[37] Risk factors for homelessness that have been identified among veteran women include military sexual trauma, unemployment, poor physical health or disability, screening positively for anxiety or PTSD, and substance abuse[35,38,39]; completion of

college and being married appear to be protective factors.[39] Younger female veterans were found to be at higher risk than their older counterparts.[35]

SUICIDE

Among Americans, suicide ranks as the 10th most common cause of death in the general population, with men at higher risk than women.[40] Historically, military personnel have demonstrated a lower risk of suicide than have people in the general population; but beginning in the early 2000s, suicide rates among active-duty military personnel began to increase dramatically, the rate in 2008 surpassing the civilian rate in 2005 (20.2 and 19.5 suicide deaths per 100,000, respectively), for example.[41] Rates among military veterans of both sexes have also risen.

To better understand this trend, the U.S. Army, in collaboration with the National Institute of Mental Health, conducted the multicomponent Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). One of the component studies, an analysis of administrative data by Schoenbaum and colleagues, found that between 2004 and 2009 the suicide rate rose not only among currently and previously deployed soldiers but also among soldiers who were never deployed.[42]

All nurses should ask every patient about military service during the initial encounter.

In another of the component studies, a cross-sectional survey of 5,428 nondeployed soldiers, Nock and colleagues found that 49.8% of male and 38.6% of female soldiers who reported attempting suicide indicated that their first attempt occurred before enlistment.[43] Five mental health disorders were found to be predictive of postenlistment first suicide attempts: preenlistment panic disorder, preenlistment PTSD, postenlistment depression, and both pre- and postenlistment intermittent explosive disorder. Female soldiers were at significantly higher risk for suicide than male soldiers. The researchers also found that soldiers who attempted suicide tended to be lower in rank and to have been previously deployed. Although these studies provide some insight into risk factors for suicide, further research is needed. Prevention efforts should include screening for mental health disorders that exist preenlistment or emerge during active duty in service members who are at increased risk.

REPRODUCTIVE HEALTH

There has been a limited amount of research investigating the reproductive health of active-duty servicewomen and female veterans, especially as it relates to mental health. Indeed, veterans' reproductive health care is a recent addition to the VA's Women's Health Services; historically, it had been left to the private sector, with obstetric care being carried out primarily through referrals to community providers.

In a qualitative study by Manski and colleagues investigating the reproductive health experiences of 22 military women of any status who had been deployed in 2001 or later, participants reported having limited access to contraception and to female health care providers.[44] Stigma associated with seeking health care, whether for physical or mental health reasons, was also a reported barrier. And in a retrospective study, Cohen and colleagues reviewed archived VA data for more than 70,000 female veterans of OIF and OEF.[45] They found that those veterans with mental health diagnoses (such as PTSD) had significantly greater prevalences of sexually transmitted infections, urinary tract infections, infertility, and other gynecologic problems than those without such diagnoses.

Little is known about the mental health problems or treatment of female veterans who become pregnant. Mattocks and colleagues examined data from the Defense Manpower Data Center to determine the prevalence of mental health problems among more than 43,000 female veterans who received pregnancy-related care in the VHA system.[46] During the five-year study period, 2,966 women (7%) had at least one pregnancy-related health care encounter. Of that group, 32% received one or more mental health diagnoses, compared with 21% of the women who had not been pregnant. Those who had been pregnant were twice as likely to be diagnosed with depression, anxiety, PTSD, bipolar disorder, or schizophrenia as those who had not been pregnant. The researchers concluded that more research on mental health care among pregnant military women is needed. Further studies should also explore associations between deployment-induced mental health disorders and maternal and child outcomes. Women who have been deployed may be susceptible to postpartum depression or have difficulties bonding with their children after prolonged absences.[47-49]

PRACTICE IMPLICATIONS

Improving collaborative care. In 2000, in a collaborative effort to meet the increasing postdeployment health care needs of military personnel, the DOD and the VA jointly issued the *Clinical Practice Guideline for Post-Deployment Health Evaluation and Management* (it has since been retired).[50] This and similar efforts were intended in part to support primary care–based detection and treatment of depression, PTSD, and other "medically unexplained" symptoms for both military and civilian providers. In 2010, the VHA began implementing the Patient Aligned Care

Team (PACT) model, a collaborative, patient-centered model that emphasizes "seamless" communication and coordination of established patient goals between VA and non-VA providers.[51] The PACT model was implemented first in primary care and has since been extended to specialty care, women's health, and other areas.

an initiative called Have You Ever Served in the Military? (www.haveyoueverserved.com), which provides tools and resources to help health care professionals screen patients for service-related medical issues.

Advanced practice RNs (APRNs) currently represent about 8% of the U.S. nursing workforce[55]; their

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Addressing female veterans' unique needs. Recognizing that veteran women have unique health care needs, the VA has also implemented several initiatives specifically aimed at ensuring comprehensive care (and eliminating barriers to such care) for this population. Such initiatives have included opening VA women's health centers within VA facilities and community-based outpatient clinics; and developing a behind-the-scenes program called Enhance the Veteran Experience and Access to Healthcare, which is designed to expand access to care to underserved populations, including women.[52] In 2010, the VHA created a policy aimed at ensuring that all VHA facilities had designated women's health primary care providers.[53] The policy also called for all female veterans to be assigned such a provider, who would be "interested and proficient in the delivery of primary health care to women, irrespective of where they are seen." But a study evaluating the VHA's implementation of this policy found that although by 2012, all of the VHA's 140 health care systems had at least one designated women's health primary care provider on staff, only 63% of female veterans saw one.[54] Moreover, 48% of female veterans saw both designated women's health and "other" primary care providers, which again points to the need for all nurses to understand the challenges faced by this population.

The role of nurses. In the United States, nurses are the single largest group of health care providers; and nurses working in various non-VA settings are likely to encounter female veterans. It's essential for non-VA nurses to be knowledgeable about the mental health issues commonly seen in this population, and to understand the importance of screening, not only for mental health issues but also for physical conditions that may be related to service. All nurses should ask every patient about military service during the initial encounter. To that end, the American Academy of Nursing recently launched

presence in primary care has risen steadily in the past 20 years, and their role in the VA has expanded.[56] In 2014 the DOD and the VA jointly announced a plan to ensure that adequate mental health counseling services are available to all active-duty military personnel, veterans, and their families.[57] The plan, which involves adding 470 mental health positions in primary care settings, is aimed at using more nurses and NPs trained in mental health in order to fill projected demands. And this past May, the VA further proposed amending its medical regulations "to permit full practice authority of all VA [APRNs] when they are acting within the scope of their VA employment."[58] (It's worth noting that the VA's proposal to expand the role of nurses has met with some resistance among physician groups.)

Screening tools and resources. There are several resources available to assist nurses in screening for and treating mental health disorders. One important

Resources

Department of Veterans Affairs, Women Veterans Health Care
www.womenshealth.va.gov/WOMENSHEALTH/index.asp
This program "provides programmatic and strategic support to implement positive changes in the provision of care for all women veterans."

Department of Veterans Affairs, Community Provider Toolkit
www.mentalhealth.va.gov/communityproviders
This Web site offers several resources for non-VA providers.

Joining Forces
www.whitehouse.gov/joiningforces
This initiative "works hand in hand with the public and private sectors to ensure that service members, veterans, and their families have the tools they need to succeed throughout their lives."

screening tool is the Primary Care PTSD Screen (www.ptsd.va.gov/professional/assessment/screens/pc-ptsd.asp). The four-question tool, which focuses on symptoms rather than trauma history, allows for quick screening when providers' time is limited, and has demonstrated good reliability.[59] A positive result doesn't confirm a diagnosis, but rather serves to alert providers to potential PTSD cases and opens the door to further discussion about traumatic experiences. Another tool, the Deployment Risk and Resilience Inventory-2, is a "suite" of 17 separate scales that gathers information about a range of deployment experiences and their impact on mental health.[60] The tool was originally developed for research purposes and has not been validated in a clinical population, but it may be useful for encouraging discussions between patients and providers.

In 2011 the VA launched the PTSD Consultation Program, which offers support to VA and non-VA mental health professionals, primary care clinicians, social workers, peer support specialists, nurses, and researchers working with veteran men and women. For more information on this service, visit www.ptsd.va.gov/professional/consult/index.asp. The VA has also instituted several initiatives aimed at ending homelessness among all veterans, including health care outreach programs serving veterans and their families. For more information about these initiatives, visit www.va.gov/homeless/prevention.asp. It should also be noted that women entering military service tend to be of childbearing age, and nurses performing postdeployment mental health assessments should consider their reproductive health. For more useful Web sites, see *Resources*.

CONCLUSION

The creation of VA women's health centers within many of its hospitals and community-based outpatient clinics are steps in the right direction. But more work needs to be done. Further research should analyze early screening measures designed to identify veterans at risk for mental health disorders, and should evaluate psychosocial interventions that are aimed at promoting a positive readjustment to civilian life. Nurses' knowledge, expertise, and leadership skills make them invaluable resources in meeting the mental health needs of both active-duty and veteran women. The role of nurse as patient advocate is essential. It helps to build rapport, trust, and good communication, which in turn facilitates engagement and encourages women to take an active role in their mental health care. ▼

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