

burden, and bi-directional influences. Women with epilepsy warrant special consideration due to many factors, including hormonal influences on seizure susceptibility, reproductive health considerations, and unique psychiatric and clinical profiles. However, there is yet to be large-scale research characterizing women with DRE. The present study characterized psychiatric conditions, treatment, and hospitalization data in a Veterans Health Administration (VHA)-wide sample of women Veterans and then compared results to a male Veteran sample to explore sex differences.

Participants and Methods: Data from 52,579 Veterans enrolled in VHA care between FY2014 and 2nd Quarter FY2020 were gathered from the VHA Corporate Data Warehouse administrative data. The sample was comprised of 5,983 women (11.4%) and 46,596 men (88.6%). Demographics, psychiatric diagnoses, psychiatric medications, ER visits, and hospitalizations were characterized. Chi-square analyses were used to examine group differences between men and women.

Results: The vast majority of the women Veteran sample had at least one psychiatric diagnosis (86.1%), with over half of the sample diagnosed with depression (68.3%), PTSD (54.1%), and/or anxiety disorders (57.7%). When compared to men, women Veterans were more likely to have a psychiatric diagnosis (86.1% vs. 68.1%), evidenced a higher number of co-morbid psychiatric conditions (2.4 vs. 1.6), and were prescribed more psychiatric medications (3.4 vs. 2.3; all significant at $p < 0.001$). All individual psychiatric diagnoses were more prevalent in women than men and, notably, suicidality was also higher in women (13.5% vs. 10.0%; $p < 0.001$). Women Veterans also had a higher number of ER visits (6.9 vs. 5.5; $p < 0.001$) and psychiatric hospitalizations than men (.4 vs. .3, $p < 0.001$).

Conclusions: The present study represents the largest known investigation to date of women with DRE and is also the largest study of women Veterans with any form of epilepsy. It highlights a vast psychiatric burden in this subset of women Veterans, with high rates of psychiatric comorbidity, lending to downstream effects on psychiatric medication burden and risk for emergency care usage and psychiatric hospitalization. Comparisons to men emphasize that women are differentially impacted by the psychiatric toll of DRE and warrant special consideration. The markedly higher rates of depressive disorders and suicidality in women

Veterans with DRE is especially notable when considering risk of harm and mortality. Overall, the present work adds to the paucity of literature of women Veterans with seizures and gaps in the broader DRE research base, with implications for specialized screening and maximizing treatment interventions in this population.

Categories: Epilepsy/Seizures

Keyword 1: epilepsy / seizure disorders

Keyword 2: emotional processes

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2 1991 Gulf War Women Veterans: Neurotoxicant Exposures and Cognitive Outcomes

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Objective: The women who served in the 1990-1991 Persian Gulf War (GW) are unique in that they were the first group to have fewer restrictions in terms of military occupations and exposure to combat. Of the nearly 41,000 US troops who were women deployed to the GW, many were serving in frontline positions and were exposed to the same toxicants as their male counterparts. Toxicant exposures such as pesticide sprays and creams, oil well fires, diesel fuels, chemical and biological warfare (CBW) agents and anti-nerve gas (PB) pills have been found to result in cognitive impairments across a range of neuropsychological tests. Our research team has been following cohorts of women who were deployed to the GW and correlated exposures with neuropsychological outcomes. Overall, in small cohorts of women veterans we found that higher levels of exposures to pesticide sprays and creams and CBW are correlated with short-term memory, mood, and motor deficits. These findings were different from those of their male counterparts. In a recently developed data-repository we have compiled larger groups of women veterans to validate our prior findings.

Participants and Methods: The current study is an analysis of data from a national bio/data-repository (Boston Biorepository Recruitment and Integrative Network for Gulf War Illness; BBRAIN) which includes key data samples from prior GW studies that have been merged and combined into retrospective datasets. Data include general health and chronic symptom questionnaires, demographics, deployment and self-reported exposure histories (separated into no exposure, fewer than 7 days exposure and greater than or equal to 7 days exposure), as well as key neuropsychological test variables. Three separate datasets were combined to include 62 women. Exposures to chemical alarms, oil well fires, pesticide cream or spray, pesticide fogging, and PB pills were self-reported. Linear regression models were produced for each continuous cognitive outcome, modeled on a given exposure, and controlling for age, education level, PTSD, and other exposures.

Results: Of the 62 women, the majority were White (77%). 74% of women surveyed were employed and 55% were married. 63% of women had at least a high school education. Deployed women who had > 7 days of exposure to pesticide sprays, CBW, smoke from oil well fires, and PB pills were more likely to show deficits in the areas of verbal learning and short-term memory ($p < .03$) and those with exposure to CBW, smoke from oil well fires, pesticides creams and PB pills had more errors on a test of executive functioning ($p < .01$). These data differ from the findings from cohorts of men.

Conclusions: These data validate the findings of our prior studies and add credence to the need for separate analyses for men and women. The unique outcomes may lead to individualized treatments for women veterans that may also help women with similar exposures from other deployments in addition to women with occupational exposures.

Categories: Drug/Toxin-Related Disorders (including Alcohol)

Keyword 1: neurotoxicity

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3 The Menopause Transition in Women with Traumatic Brain Injury

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Objective: All premenopausal women who survive traumatic brain injury (TBI) will eventually experience menopause. Challenges experienced by women with TBI are superimposed on challenges associated with hormonal changes in midlife. Some women with stressful life contexts such as TBI are more vulnerable to the added burdens of the menopause transition, potentiating its effects. Although it may be argued that TBI research correctly overrepresents the male experience given disparities in injury rates (4:1), there are important differences in how females and males age, their specific health needs, and the psychosocial context of midlife. Development of evidence-based interventions begins with understanding the experience of menopause after TBI, including where and when key problems may emerge.

Participants and Methods: All participants were women 40-60 years old, not taking hormones (i.e., replacement therapy or other systematic hormones), with intact ovaries. Women with TBI were > 2 years post injury, whose menstrual period returned after injury, and were living in the community. Severity of injury ranged from complicated-mild to severe TBI. Pre/peri and postmenopausal status was determined by presence/absence of menstrual period in previous 6 months, respectively. Eighteen common menopause symptoms (vasomotor, somatic, psychological, and cognitive) were assessed for presence and frequency (rarely-always), along with Quality of Life in Neurological Disorders (Neuro-QOL) Sleep Disturbance and Traumatic Brain Injury