Adverse Outcomes of Polysedative Use in Veterans with PTSD

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Background: While department of Veterans Affairs (VA) clinical practice guidelines recommend against their use, benzodiazepines are prescribed to 30-40% of veterans with posttraumatic stress disorder (PTSD). Nationally, opioid abuse has been labeled as epidemic, and inpatient chemical dependency admissions involving the combination of opioids and benzodiazepines have risen more than 500% in the last decade. Therefore, our objective was to determine whether benzodiazepines, opioids, and other sedatives – particularly in combination – are associated with adverse events in veterans with PTSD.

Methods: National VA administrative data were used to identify veterans with PTSD. Among these patients, new benzodiazepine starters during FY04-09 (N=66,406) were matched to nonusers (N=128,062) using high dimensional propensity scores. Adverse events were based on prior work involving sedative use in veterans and included emergency visits and hospitalizations for wounds/injuries, drug-related accidents/overdoses, and self-inflicted injuries identified by ICD-9 coding. One year adverse event risk was determined using a stratified Cox proportional hazards model. Exposure to opioids and other sedatives was modeled with time-dependent covariates. Prazosin use was included as a control exposure because it is prescribed in PTSD for the treatment of nightmares and other sleep disturbances but does not have significant sedating properties.

Results: Adverse events occurred within one year in 2,926 (1.5%) patients. Hazard ratios (95% C.I.) for adverse events were: benzodiazepines, 1.8 (1.6-2.0); opioids, 1.4 (1.2-1.7); atypical antipsychotics, 1.9 (1.7-2.1); and hypnotics, 1.4 (1.1-1.8). In addition, the benzodiazepine-opioid interaction was significant (p<.001), indicating a multiplicative effect where the hazard ratio for this combination was 3.8 compared to nonusers of both. Among dual users of benzodiazepines and opioids, 78% were prescribed by different providers. Prazosin exposure and other interaction terms were not significantly associated with adverse events.

Conclusions: Polysedative use in veterans with PTSD leads to incremental risk for serious adverse events. The combination of benzodiazepines and opioids is particularly troublesome given the synergistic interaction and the tendency toward being prescribed by different providers. The clinical complexity of caring for veterans with PTSD creates an environment that, without careful coordination of care, can lead to high-risk polysedative use.
Comparing Homeless Persons’ Care Experiences in Tailored versus Non-Tailored Primary Care Settings

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**Background:** Although the Affordable Care Act’s expansion of coverage may increase access to primary care (PC) for vulnerable populations, like the homeless, a key challenge will be to promote innovative delivery models that can sustain their engagement in PC. Some agencies tailor PC services for homeless patients in ways that include outreach, care in shelters or streets, team-based care, co-location of providers, provider education, tangible items (i.e. clothing, food), or a consumer governance role. To date, there has been no study of whether these “tailored” service designs yield a better patient experience. Using a new survey we developed for this population, we compared homeless patients’ perceptions of PC across settings that differed in the degree of PC service tailoring.

**Methods:** We surveyed homeless-experienced patients at 3 mainstream PC settings in the Veterans Administration (VA) (n=312), a homeless-tailored VA clinic (n=94), and a highly tailored non-VA Health Care for the Homeless Program (n=195). Patient ratings were obtained with the 33-item Primary Care Quality-Homeless (PCQ-H) survey. Derived from interviews and the application of Item Response Theory, the PCQ-H survey results in 4 scales: 1) Patient-Clinician Relationship, 2) Cooperation among clinicians, 3) Accessibility/Coordination, and 4) Homeless-Specific Needs. A categorical “unfavorable experience” was defined by the number of "negative" responses in the top 33% for each scale. A negative response is agreement with a negative item (e.g. “It is often difficult to get health care at this place”) or disagreement with a positive item. In comparing sites, we adjusted for patient health and demographic characteristics with linear and logistic regression.

**Results:** Mean PCQ-H scores at the tailored non-VA site were higher than those from 3 Mainstream VA sites (p<0.001). Adjusting for patient characteristics, these differences remained significant for scales assessing Patient-Clinician Relationship (p<0.001) and Cooperation (p=0.004). In categorical analysis, an unfavorable experience was 1.5-2 times more common at Mainstream VA sites compared to the Tailored non-VA site (all p<0.05, Figure), remaining significant after adjusting for patient characteristics for the Relationship, Cooperation and Access/Coordination scales.

**Conclusions:** Tailored primary care service design is associated with a superior experience for homeless patients. Further research will need to identify which aspects of tailoring matter most, and are most readily adopted in new settings.
Women Veterans and Comprehensive Care: Challenges for Designated Women’s Health PCP’s

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**Background:** A key aspect of VA’s plan for improving care for women veterans is to establish a national model of comprehensive and integrated clinical primary care. Using this approach, a single designated women’s health primary care provider (PCP) in the same location sees patients for not only primary care issues, but also gender-specific care. Although it is ultimately expected to be the predominant model of care for women veterans at every VA site, on a local level at the Indianapolis Roudebush VA Medical Center, there have been difficulties with rolling out the one-provider model. The goal of this qualitative study was to identify barriers and facilitators encountered by PCPs to providing comprehensive women’s health care services.

**Methods:** In-depth interviews were conducted with 15 of the 36 designated women’s health PCPs across five primary care clinics at the Roudebush VA Medical Center in Indianapolis, IN. Purposive and snowball sampling techniques were used to identify PCPs, aiming for diversity in sex, experience, length of VA service, and practicing site/service.

**Results:** Qualitative thematic analysis of the interviews revealed six major barriers: 1) space and structure; 2) time; 3) support staff; 4) comfort level; 5) education; and 6) scheduling/logistics. Problems with space and structure pertained to not having a sufficient number of rooms to conduct pap and pelvic exams, an awkward layout of the available rooms, and a lack of privacy. As for time, 30 minutes was not perceived as sufficient to address primary care needs, chronic pain, mental health, and military sexual trauma issues, along with gender-specific care. For pap and pelvic exams in particular, time is needed to search for equipment, a female chaperone, and to wait for the patient to get undressed and dressed. Moreover, according to some PCPs, women veterans are more communicative than male veterans.

Another barrier discussed by PCPs was difficulty in finding support staff to assist, (i.e., insufficient numbers of support staff), lack of support staff knowledge and/or comfort assisting, with some refusing to assist. Comfort level was also a barrier for PCPs, based on perceived patient discomfort with gender-specific care due to military sexual trauma, perceived patient discomfort when the patient-provider relationship is new, and finally, perceptions by male PCPs that women veterans prefer female PCPs. Education and Training were discussed as barriers by several PCPs insofar as they were not given sufficient educational resources to keep their skills up, and they did not know what training was required and what was optional. Finally, the barrier of scheduling and logistics pertained to the inability, as discussed by several PCPs, to plan ahead for pap smear and pelvic exam appointments.

**Conclusions:** Gaining in-depth knowledge about PCPs’ struggles in one VA medical center with moving to the one-provider model, can help to shed light on potential challenges faced by PCPs across other sites. Specific strategies are outlined that can potentially inform wider implementation efforts as well as serve as a brainstorming platform from which new work flow process solutions can emerge.
The Effect of a Yoga Intervention on Alcohol and Drug Abuse Risk in Veteran and Civilian Women with PTSD.

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Background: Post-traumatic Stress Disorder (PTSD) is of particular importance to the Veteran population. Many patients with PTSD have co-morbidities, including alcohol and substance abuse, which may impede diagnosis and treatment of PTSD. There is growing interest among Veterans and civilians in complementary and alternative medicine (CAM), though evidence for the efficacy of CAM in PTSD is sparse. In this study, we investigated the impact of a yoga intervention on alcohol and drug abuse risk in women with PTSD.

Methods: We conducted a pilot study of a randomized controlled trial at a VA medical center comparing a 12-session weekly yoga intervention with control. Veteran and civilian women ages 18-65 with PTSD or sub-threshold PTSD were included. Participants were excluded if they attended a yoga class in the last six months or reported substance abuse in the previous three months. The intervention consisted of a hatha yoga class taught according to trauma-sensitive yoga guidelines, and the control group completed weekly assessments. All participants completed self-reported measures at baseline, post-intervention, and at one-month follow-up, including Alcohol Use Disorder Identification Test (AUDIT) and Drug Use Disorder Identification Test (DUDIT). Mean AUDIT and DUDIT scores were calculated at each time point and compared using Wilcoxon Rank Sum tests. AUDIT and DUDIT scores were dichotomized into high or low risk of harmful use and compared with Fisher’s exact tests.

Results: Thirty-eight women were randomized to the yoga intervention (n=20) and assessment-only control (n=18). Participant mean age was 43.3; 24% were Veterans. The majority of participants (76%) completed the study. There was no difference in baseline AUDIT and DUDIT scores of participants lost to follow-up.

By dichotomizing AUDIT and DUDIT score, we observed at baseline, 8% and 21% of participants had high risk drinking and drug use behaviors, respectively. At post-intervention and follow-up, there were no higher risk alcohol or drug users in the yoga group compared to 2-3 higher risk users in the control group. This difference was not statistically significant.

Mean AUDIT scores decreased over the study period in the yoga group, declining from 1.95 (SD=2.35, 95% CI: 0.85-3.05) at baseline to 1.29 (SD= 1.20, 95% CI: 0.59-1.98) post intervention, and 1.00 (SD=1.35, 95% CI: 0.18-1.92) at follow-up. The mean difference between intervention and control groups approached significance over time. (Post-intervention p = 0.247, Follow-up p=0.052) Post-intervention, mean DUDIT scores were lower in the yoga group (0.07, SD=1.92, 95% CI: -0.08-0.23) than the control group (1.09 SD=1.79, 95% CI: -0.20-2.38); this difference approached significance (p=0.081), although it disappeared at follow-up (p=0.209).

Conclusions: A pilot study of a yoga intervention for women with PTSD resulted in lower alcohol use and drug use risk scores compared to controls, with results approaching statistical significance. Findings suggest that yoga may be a feasible adjunctive treatment for patients with PTSD and substance abuse disorders. Further studies into the efficacy of CAM in the treatment of PTSD are warranted.
The Huddle: Trainee experiences in team-based primary care in an innovative interprofessional education program


Background: Team-based primary care delivery is a central component of the patient-centered medical home model. Brief team meetings, or “huddles,” have been identified as an important component of safe, effective team-based care. Inclusion of trainees in huddles can provide valuable interprofessional learning opportunities, particularly for development of skills in communication and coordination of care. This qualitative study examines trainee perceptions of the role of huddles in team-based primary care, key elements of huddles, and their impact on provider and patient experience.

Methods: In 2011, the San Francisco VA and the University of California San Francisco established the Education in Patient Aligned Care Teams (EdPACT) Program to prepare Internal Medicine residents (R2s) and Adult Nurse Practitioner students (NP2s) to work in teams with staff to care for a panel of primary care patients. EdPACT encourages regular huddles before clinic to formalize interprofessional communication. Semi-structured interviews were conducted with EdPACT trainees about their experiences with huddles. Two authors reviewed interview transcripts for alignment with a framework for interprofessional collaboration that includes relational, process, and organizational factors. The authors developed a coding scheme based on this framework, independently coded the transcripts and reconciled to consensus, then analyzed coded passages for themes.

Results: 19 of 23 trainees participated in interviews. Nearly all trainees identified huddles as valuable to their clinic experience; all described the role of relational factors in their huddle and 18 out of 19 described process factors. The most common relational factors were 1) team dynamic (i.e., getting to know members, establishing a team identity), 2) consistent participation in huddles, and 3) defined roles and role clarity. Trainees highlighted team dynamic as particularly important for effective huddles and noted improvements over the year. The two process factors most commonly referenced were 1) communication related to clinical tasks, and 2) having established routines. Many trainees described pre-huddle review of patient charts and ordering tests/procedures, i.e. “scrubbing,” as an important routine that improved the efficiency of huddles and clinic. The VA-supported team structure (PACT) was the primary organizational factor mentioned by trainees. PACT was a new concept that some trainees found challenging in the beginning of the year but was appreciated more as the year progressed and relational and process factors improved.

Trainees characterized the huddle as the primary event for interprofessional collaboration. Some suggested that huddles improved the primary care experience for both providers and patients. Several trainees said regular communication about tasks and scheduling before clinic increased team efficiency. Others stated that multiple team members knowing the patients and providing different services contributed to better care for patients.

Conclusions: Trainees valued huddles for building interprofessional relationships and as key for delivering team-based primary care. Some trainees believed that huddles contributed to efficiency in clinic and better patient outcomes through improved relationships, communication, and coordination between team members. Several of the relational and process factors highlighted by trainees suggest areas in need of focused training and feedback to maximize huddle effectiveness.
Off-label antipsychotic prescriptions in Iraq and Afghanistan Veterans with posttraumatic stress disorder in VA Healthcare, 2001-2011

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**Background:** Over one quarter of veterans who have returned from Iraq and Afghanistan and entered VA care have received a diagnosis of posttraumatic stress disorder (PTSD). PTSD has been associated with metabolic abnormalities and cardiac risk factors, even in these younger age veterans. Antipsychotics have been increasingly prescribed for off-label uses, including treatment of PTSD. Given concern about the potentially harmful metabolic side effects of antipsychotics as well as recent trials that failed to demonstrate efficacy for PTSD symptoms, we used a large national VA sample to explore the use of off-label antipsychotics among Iraq and Afghanistan veterans with PTSD. We evaluated the prevalence of off-label antipsychotic use and identified sociodemographic factors, military service characteristics, and psychiatric comorbidities that were associated with their use.

**Methods:** We used de-identified Department of Defense data and national VA electronic medical records to select Iraq and Afghanistan veterans who had enrolled in VA care between 10/1/2001 and 12/31/2010, and followed them through 12/31/2011. We used ICD-9 codes to determine mental health and medical diagnoses and pharmacy records to evaluate medication use. We only included medications that were prescribed after the date of PTSD diagnosis and had a supply of at least 30 days. We excluded patients that used antipsychotics but had comorbid diagnoses indicating on-label use (i.e. schizophrenia, bipolar disorder, depression with concurrent use of an antidepressant medication). To evaluate factors independently associated with off-label antipsychotic use, we used Poisson regression models that included age, gender, race, marital status, military component (Active Duty vs. National Guard/Reserve), rank (officer vs. enlisted), branch, multiple deployments, and rural vs. non-rural location. We developed similar models evaluating the association of psychiatric comorbidities with off-label antipsychotic use.

**Results:** The mean age of our study population was 29.2 years (SD 9) and 9.6% were women. Of the 155,926 patients with PTSD examined, 22% (34,142) received no psychiatric medications, 66.2% (103,276) received psychiatric medications other than antipsychotics, and 11.9% (18,508) received off-label antipsychotics. In fully adjusted models, several factors were independently associated with off-label antipsychotic use, including male sex (adjusted relative risk 1.47, 95% CI 1.39-1.55), Active Duty status (1.32, 1.28-1.37), enlisted vs. officer (1.71, 1.55-1.87), and rural vs. non-rural location (1.11, 1.08-1.14). Several comorbid psychiatric diagnoses were also associated with increased likelihood of off-label use, including personality disorder (2.05, 1.91-2.19), drug use disorder (1.77, 1.69-1.86), panic disorder (1.57, 1.48-1.67), and alcohol use disorder (1.43, 1.37-1.50).

**Conclusions:** A substantial minority of Iraq and Afghanistan veterans with PTSD diagnoses received off-label antipsychotics. Male veterans, those who were Active Duty, lower rank, or lived in rural locations, and those with psychiatric comorbidities were more likely to receive off-label antipsychotics. Off-label antipsychotics may be prescribed to more symptomatically complex and behaviorally challenging patients, who may be more difficult to engage in conventional psychotherapy. Still, providers should be cautious about off-label antipsychotic use given their known metabolic risks and questionable benefits for PTSD.