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**Title**

*PTSD symptom improvement and smoking cessation among a sample of veterans*

**Priority 1 (Research Category)**

Behavioral, psychosocial, and mental illness

**Presenters**

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**Abstract**

Context: Poor health behaviors are common in persons with posttraumatic stress disorder (PTSD). PTSD symptom improvement has been followed by better health behaviors such as medication adherence and use of nutrition, weight loss, and substance abuse treatment programs. Whether PTSD improvement is associated with smoking cessation is uncertain. Objective: To determine if patients with, compared to without, clinically meaningful improvement (≥20 points vs. <20 points) in PTSD Checklist (PCL) scores are more likely to stop smoking. Study Design: Retrospective cohort using entropy balancing to control for confounding in Cox proportional hazard models overall and stratified by depression and alcohol abuse/dependence. Dataset: Veterans Health Affairs (VHA) medical record data from 2008-2015.

Population studied: Patients aged 18-70 years with PTSD who had ≥ 1 visit to PTSD specialty care with a PCL score ≥50, at least one PCL score from ≥8 weeks to 12 months following first PCL≥50 (‘exposure year’), and persistent smokers in the exposure year (n=449). Index date is the end of the exposure year.

Intervention/Instrument: Change from first to last PCL score in exposure year classified as clinically meaningful vs. less than clinically meaningful improvement (≥20 point decrease vs. <20 point decrease).

Outcome measures. Time to smoking cessation as documented in VHA administrative medical record data in the 2-years after index. Follow-up time was measured as months from index to either smoking cessation or censoring. Results: Overall, patients were 39.4 (±12.9) years old, 71.5% white, 86.6% male, 19.8% had a clinically meaningful PCL score decrease, and 32.7% quit smoking in the 2-years after index. After entropy weighting, PCL decrease ≥ 20 vs. < 20 was associated with a 57% increased likelihood of smoking cessation (HR=1.57; 95% CI=1.04-2.36). The relationship of PTSD improvement with smoking cessation was similar in patients with vs. without depression and with and without alcohol abuse/dependence. Among patients who quit smoking, about half remained non-smokers in the 12-months after initial quit date. Conclusions: A clinically meaningful reduction in PTSD symptoms was associated with smoking cessation in the 2-years after PTSD improvement. Not all patients with PTSD have access to PTSD treatment modalities that integrate smoking cessation therapy; however, PTSD treatment alone may improve patient self-efficacy and enable smoking cessation.