Association of Engagement in Substance Use Treatment with Negative Separation from the Military Among Soldiers with Post-Deployment Alcohol Use Disorder

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Link to published manuscript[7]

INTRODUCTION

- Military servicemembers engage in binge drinking at higher rates than their same age civilian peers, which increases the risk of alcohol use disorder (AUD)[1,2]
- Barriers to treatment including perceived stigma and fear of career harm for seeking care contribute to AUD underdiagnosis and undertreatment[3]
- Untreated AUD can have significant consequences for individual servicemembers and the Department of Defense more broadly

Study Aims

- We evaluated rates of substance use treatment initiation and engagement among soldiers diagnosed with AUD
- We additionally examined the association between treatment engagement and negative separation

METHODS

- Data source: the Substance Use and Psychological Injury Combat (SUPIC) Study dataset[4]
  - Data from fiscal years 2008-10 were utilized
- Sample: N=4,726 active duty Army soldiers diagnosed with AUD within 150 days of post-deployment health re-assessment survey (PDHRA) completion
- Heckman probit models sequentially analyzed significant predictors first of treatment initiation and then engagement , as defined by the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS)
- Cox regression examined predictors of negative separation during a maximum time-to-event window of 2 years

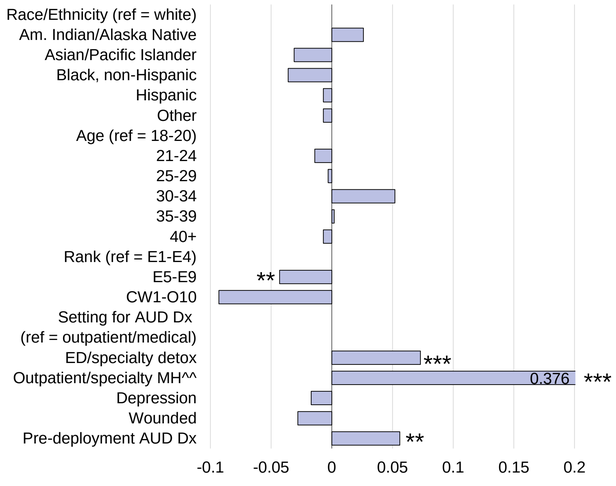
Measures and Definitions

- Sociodemographic and military characteristics: gender, marital status, race/ethnicity, age, rank, history of prior deployment, and fiscal year of index deployment
- Alcohol use severity groups adapted from AUDIT-C[5]: Low, at-risk, severe, stratified by gender
- Comorbidities
  - Post-traumatic stress disorder and depression screens within PDHRA
  - Self-report of significant injury on deployment within PDHRA
  - Traumatic brain injury (TBI) assessed if diagnosed within 90 days prior to AUD diagnosis
- Treatment initiation[6]: At least 1 SUD-related medical encounter within 14 days of AUD diagnosis
- Treatment engagement[6]: At least 2 additional SUD-related visits within 30 days of initiation
- Negative separation: Leaving active service prior to contract expirations for negative reasons including misconduct, poor performance, disability, and death

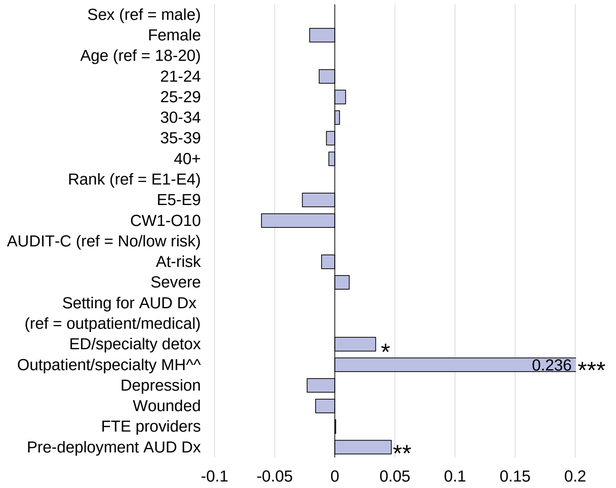
RESULTS

	Soldiers with AUD Diagnosis N = 4,726	Soldiers with AUD and Negative Separation N = 1,639 (34.7%)
Initiated Treatment	1,898 (40.2%)	777 (40.9%)
Remained Engaged	1,120 (23.7%)	483 (43.1%)

Correlates of Treatment Initiation After AUD Diagnosis



Correlates of Treatment Engagement after AUD Diagnosis



*Note: FTE providers = full time equivalent mental health providers per 100,000 patients at each soldier's military treatment facility. * p < 0.05; ** p < 0.01; *** p < 0.001*

^^Marginal effect at the mean for outpatient/specialty mental health exceeds chart maximum for both initiation and engagement and was capped to better present remaining model effect sizes. The true value for each is labeled.

Time-to-Event Analysis of Negative Separation Following AUD Diagnosis

Variable	Hazard Ratio	95% Confidence Interval
Sex (ref = male)		
Female*	**0.727**	**(0.569, 0.929)**
Marital Status (ref = Married)		
Separated	1.125	(0.881, 1.438)
Single, never married	0.987	(0.886, 1.098)
Race/Ethnicity (ref = white)		
Am. Indian/Alaska Native	1.083	(0.756, 1.551)
Asian/Pacific Islander	0.970	(0.841, 1.119)
Black, non-Hispanic*	1.178	(1.027, 1.351)
Hispanic	1.017	(0.867, 1.192)
Other	0.464	(0.149, 1.447)
Age (ref = 18-20)		
21-24* **	**0.740**	**(0.643, 0.850)**
25-29* **	**0.558**	**(0.469, 0.665)**
30-34* **	**0.515**	**(0.401, 0.661)**
35-39* **	**0.448**	**(0.322, 0.623)**
40+ **	**0.512**	**(0.327, 0.801)**
Rank (ref = E1-E4)		
E5-E9* **	**0.585**	**(0.500, 0.685)**
CW1-O10* **	**.334**	**(0.177, 0.632)**
Prior Deployment (ref = No)		
Yes	0.925	(0.808, 1.058)
Setting for AUD Dx (ref = outpatient/med)		
ED/specialty detox **	**1.368**	**(1.094, 1.712)**
Outpatient/specialty MH* **	**1.91**	**(1.598, 2.282)**

Variable (cont.)	Hazard Ratio	95% Confidence Interval
Fiscal year deployment (ref = 2008)		
2009	0.885	(0.771, 1.016)
2010	0.971	(0.844, 1.117)
FTE providers	0.999	(0.996, 1.002)
TBI Diagnosis (ref = no)		
Yes	1.039	(0.88, 1.228)
PTSD Positive Screen (ref = no)		
Yes*	**1.174**	**(1.023, 1.348)**
Depression Positive Screen (ref = no)		
Yes* **	**1.406**	**(1.245, 1.589)**
Wounded, injured, assaulted (ref = no)		
Yes	1.086	(0.964, 1.224)
Pre-deployment AUD Dx (ref = no)		
Yes* **	**1.279**	**(1.123, 1.457)**
Treatment engagement (ref = no)		
Yes* **	**1.255**	**(1.125, 1.401)**

Note: FTE providers = full time equivalent mental health providers per 100,000 patients at each soldier's military treatment facility

* p < 0.05
** p < 0.01
*** p < 0.001

DISCUSSION

- Overall, only a minority of soldiers with AUD initiated or engaged with substance use treatment
  - Few sociodemographic factors contributed to initiation or engagement
  - However, treatment setting and previous AUD diagnosis significantly contributed to both
- Contrary to expectations, we found that soldiers with AUD who engaged in treatment were more likely to leave military service for a negative reason compared to those who did not engage
- Treatment itself is unlikely to be a primary contributor to negative separation. Rather, additional contextual variables likely play a larger role
  - Significance of pre-deployment AUD diagnosis in rates of initiation, engagement, and negative separation suggest those who engage in treatment may have more severe presentations.
  - Receipt of SUD treatment has often been mandatory following disciplinary action. Additional punitive measures and closer monitoring likely increases risk of negative separation
- Younger soldiers with high rates of additional comorbidities have highest risk of negative separation following AUD treatment engagement
  - Early identification of at-risk drinking and/or AUD diagnosis may be an ideal window to refer to integrative treatment
- We recommend the DoD continue to identify barriers to increasing substance use treatment initiation and engagement by incorporating consistent screening and referrals from settings with lower levels of initiation, such as primary care

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