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Hazardous drinking and its association with homelessness among veterans in care

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ABSTRACT

Background: While scholarship on alcohol use and homelessness has focused on the impact of alcohol abuse and dependence, little is known about the effects of lower levels of misuse such as hazardous use. Veterans receiving care in the Department of Veterans Affairs Health Care System (VA) constitute a population that is vulnerable to alcohol misuse and homelessness. This research examines the effects of hazardous drinking on homelessness in the Veterans Aging Cohort Study, a sample of 2898 older veterans (mean age = 50.2), receiving care in 8 VAs across the country.
Methods: Logistic regression models examined the associations between (1) hazardous drinking at baseline and homelessness at 1-year follow-up, (2) transitions into and out of hazardous drinking from baseline to follow-up and homelessness at follow-up, and (3) transitioning to hazardous drinking and transitioning to homelessness from baseline to follow-up during that same time-period.
Results: After controlling for other correlates including alcohol dependence, hazardous drinking at baseline increased the risk of homelessness at follow-up (adjusted odds ratio [AOR] = 1.39, 95% confidence interval [CI] = 1.02, 1.88). Transitioning to hazardous drinking more than doubled the risk of homelessness at follow-up (AOR = 2.42, 95% CI = 1.41, 4.15), while more than doubling the risk of transitioning from being housed at baseline to being homeless at follow-up (AOR = 2.49, 95% CI = 1.30, 4.79).
Conclusions: Early intervention that seeks to prevent transitioning into hazardous drinking could increase housing stability among veterans. Brief interventions which have been shown to be effective at lower levels of alcohol use should be implemented with veterans in VA care.

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1. Introduction

Veterans are a population at increased risk for alcohol misuse and homelessness (Goldstein et al., 2008; Department of Housing and Urban Development [HUD], 2008). In a recent study, the Department of Veterans Affairs (VA) identified 800,000 veterans with substance use and alcohol use disorders (McKellar and Dalton, 2006). In a national study conducted on the non-institutionalized general population in the U.S., almost 57% of veterans reported alcohol use in the last month, significantly higher than those who reported use among the non-veteran population. Moreover, 23% of veterans reported episodes of heavy episodic drinking (Wagner et al., 2007). The same proportion of veterans reported drinking almost daily in the past year, which was significantly higher than the prevalence of daily consumption in the general population (Tessler et al., 2005). Scholars have also documented a high prevalence of homelessness among veterans. The VA estimates that on any given day, approximately 75,000 veterans are in emergency

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shelters or transitional housing and comprise 15% of the shelter population of the U.S. (HUD, 2008).

Alcohol use has been referred to as a pandemic among homeless veterans (Goldstein et al., 2008) significantly increasing their homeless tenure (O'Connell et al., 2008) and preventing their exit from current homelessness (Gregoire, 1996). Common risk factors for both alcohol use and homelessness include age (Bray et al., 2002; Cannon et al., 1990; Ferrier-Auerbach et al., 2009; Rosenheck et al., 1994), race (HUD, 2008; Jacobson et al., 2008; Rosenheck et al., 1994), gender (Bradley et al., 2006; Gamache et al., 2003; Ross et al., 1998), poverty (HUD, 2008; Khan et al., 2002; Sosin and Bruni, 1997), illicit substance use (O'Connell et al., 2008; Rounsaville et al., 2003; Rosenheck and Fontana, 1994) and mental illnesses such as depression (Desai et al., 2003; Ghose et al., 2011; Jakupcak et al., 2010; Kuno et al., 2000; Prigerson et al., 2003), schizophrenia (Drake et al., 1989; Etter and Etter, 2004) and posttraumatic stress disorder (PTSD; O'Connell et al., 2008; Shipherd et al., 2005; Steindl et al., 2003).

However, research has not examined the direct link between alcohol use and transitioning into homelessness among veterans. Moreover, while research on alcohol use among veterans has tended to focus on more severe alcohol use disorders such as alcohol abuse and dependence, little is known about the outcomes of lower levels of misuse such as hazardous use. The World Health Organization defines hazardous use as a subthreshold (i.e., below the threshold of abuse or dependence) form of heavy drinking, which consists of a repeated pattern of drinking that confers the risk of harm (Conigliaro et al., 2003; Rinaldi et al., 1988; Sanchez-Craig et al., 1995; Saunders and Lee, 2000). This definition of hazardous drinking has been accepted by the ICD-10 and usually corresponds to 16 or more drinks a week for men and 12 or more for women. The move from an emphasis on alcohol dependence to lower thresholds of consumption mirrors a similar shift in mental health, where subthreshold levels of symptoms have been found to be more prevalent and cause significant functional impairments (Saunders and Lee, 2000).

Examining the link between transitioning into and out of hazardous drinking on homelessness might inform the use of early interventions with alcohol users in order to increase the likelihood that they remain housed. Moreover, scholars note that studies examining the link between addictive disorders and homelessness have generally not differentiated between disorders that preceded homelessness and those that followed it (Winkleby et al., 1992). Thus the longitudinal link between alcohol use and homelessness has been largely unexamined. This research seeks to address these issues by examining the effects over time, of hazardous drinking on homelessness in the Veterans Aging Cohort Study (VACS), a sample of 2898 older veterans attending the general medical clinic of 8 VAs across the country. We hypothesize that after controlling for other correlates: (a) hazardous drinking at baseline is positively associated with homelessness at follow-up, (b) transitioning to hazardous drinking from baseline to follow-up is positively associated with homelessness at follow-up, (c) reducing hazardous drinking to non-hazardous levels from baseline to follow-up is negatively associated with homelessness at follow-up, and (d) transitioning to hazardous drinking is positively associated with transitioning to homelessness from baseline to follow-up.

2. Methods

2.1. Sample

The VACS is a longitudinal study of HIV-infected and uninfected patients seen in VA infectious disease and general medical clinics. The study examines the role of alcohol and comorbid medical and psychiatric disease on clinical outcomes in HIV infection. Initiated in 2002, the eight-site study includes veterans being treated in VAs in Atlanta, Baltimore, New York, Houston, Los Angeles, Pittsburgh, and Washington, DC. Subjects were randomly selected from the VA Immunology Case Registry of all HIV infected veterans in care at the sites. Age, race and site-matched HIV-negative control subjects from the general medicine clinic were simultaneously recruited into the study. The study was approved by the internal review boards at each site. Consented subjects completed a survey questionnaire and were followed up with annually. Overall, 9% of those recruited declined to participate, while 59% of HIV-infected veterans were recruited into the study. Participants were more likely than non-participants to be older and African American. Further details of the methodology are described elsewhere (Justice et al., 2006) and are available online (www.vacohort.org). We used data from the baseline and the one-year follow-up (n = 2898) and information from VA medical records for this study.

A majority of veterans were African Americans (55.8%, n = 1583), while Hispanic veterans comprised 11.6% (329) and women 5.1% (145) of the sample (Table 1). The mean age of veterans in this sample was 50.2 (range = 21–86) years. There was a high prevalence of mental illness and substance use in this sample: 14% (396) of veterans were using illicit substances weekly, 9.5% (269) suffered from major depression, 7.7% (219) from post-traumatic stress disorder, and 3.5% (98) from schizophrenia. Almost half the sample (42.6%, n = 1208) lived in poverty.

Table 1
Proportions for dependent and independent variables (n = 2898).

Factors	Proportions (n)
Alcohol use	
Hazardous use at baseline	35.9 (1018)
Hazardous use at year two	23.2 (658)
Increase to hazardous use (baseline to follow-up)	10.2 (289)
Decrease from hazardous use (baseline to follow-up)	17.9 (506)
Homelessness	
Homeless at baseline	5.6 (159)
Homeless at follow-up	7.3 (206)
Homeless at follow-up, housed at baseline	4.6 (131)
Demographics	
Women	5.1 (145)
Hispanic	11.6 (329)
African American	55.8 (1583)
Mental illness and substance use	
Post-traumatic stress disorder	7.7(219)
Schizophrenia	3.5 (98)
Depression	9.5 (269)
Weekly illicit substance use	14.0 (396)
Economic vulnerability	
Living in poverty	42.6 (1208)

2.2. Measures

2.2.1. Dependent variable. Homelessness was measured at baseline and at one-year follow-up and operationalized as being homeless for at least one night in the four weeks prior to the survey. Focusing on the month immediately preceding the survey ensures a measure of recent homelessness and is comparable to similar measures of recent veteran homelessness (HUD, 2008).

2.2.2. Primary predictor variable. Our independent measure of interest was hazardous alcohol use which was measured using the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) scale (Reinert and Allen, 2002) which has a demonstrated sensitivity ranging from 0.85 to 0.98 and a specificity ranging from 0.66 to 0.80 for hazardous drinking (score of 4 and above on a 3-item scale) among primary care patients in the U.S. (Gordon et al., 2001; Seale et al., 2006). Gordon et al. (2001) found that the AUDIT-C, an abbreviated version of the AUDIT, identified hazardous drinkers as well as the full AUDIT. Increase in use from non-hazardous to hazardous use was operationalized as an increase in the AUDIT-C score from below 4 in the first year, to a score of 4 and above in the second year, while decrease in use was operationalized as a decrease in score from 4 and above at baseline, to below 4 at follow-up.

2.2.3. Control variables. Control variables included the factors highlighted in the literature reviewed above, that have been found to be associated with alcohol use and homelessness. They included demographic variables such as race and gender, HIV status, substance use, alcohol dependence, poverty and mental illnesses such as schizophrenia, depression and post-traumatic stress disorder (PTSD). High substance use was operationalized as use of an illicit substance at least once a week. Poverty was operationalized as having a family income below the federal poverty line specified for the number of members in the participant's household. Hospital administrative data were used to extract demographic measures (race and gender), HIV status and diagnoses for alcohol dependence, depression, schizophrenia and PTSD. The mental health and alcohol dependence diagnoses were based on the World Health Organization's International Classification of Diseases, 9th Revision (ICD-9), whose validity and reliability has been established in previous research (Fischer et al., 2011; Grant, 1996; Hiller et al., 1993).