



Full length article

Factors associated with cognitive impairment in a cohort of older homeless adults: Results from the HOPE HOME study



Emily Hurstak^{a,*}, Julene K. Johnson^{b,c}, Lina Tieu^{a,d}, David Guzman^{a,d}, Claudia Ponath^a, Christopher T. Lee^{a,d}, Christina Weyer Jamora^{c,e}, Margot Kushel^{a,d,*}

^a Division of General Internal Medicine, University of California, San Francisco, Zuckerberg San Francisco General Hospital and Trauma Center, San Francisco, CA, USA

^b Institute for Health and Aging, University of California, San Francisco, San Francisco, CA, USA

^c Center for Aging in Diverse Communities, University of California, San Francisco, San Francisco, CA, USA

^d Center for Vulnerable Populations at Zuckerberg San Francisco General Hospital and Trauma Center, University of California, San Francisco, San Francisco, CA, USA

^e Department of Psychiatry, University of California, San Francisco, Zuckerberg San Francisco General Hospital and Trauma Center, San Francisco, CA, USA

ARTICLE INFO

Keywords:

Cognitive impairment
Homeless persons
Alcohol misuse

ABSTRACT

Background: We evaluated cognitive function and factors associated with cognitive impairment in a cohort of older homeless adults. We hypothesized that substance use and a history of traumatic brain injury would be associated with cognitive impairment.

Methods: We recruited 350 homeless individuals aged ≥ 50 years using population-based sampling and conducted structured interviews and neuropsychological testing. We evaluated alcohol use with the Alcohol Use Disorder Identification Test, defining high-severity alcohol use as a total score ≥ 16 or ≥ 4 on the alcohol dependency sub-scale. We assessed global cognition with the Modified Mini-Mental State Test (3MS) and processing speed and executive function with the Trail Making Test (TMTB), defining impairment as performing 1.5 standard deviations below the standardized mean. We used multivariable logistic regression to examine the association between alcohol use and cognition.

Results: Participants had a median age of 58 years [IQR 54–61], 76.7% were men, and 79.9% were African American. A quarter (25.1%) of participants met criteria for impairment on the 3MS; 32.9% met criteria for impairment on TMTB. In models adjusted for sociodemographic variables and health conditions, high-severity alcohol use was associated with global cognitive impairment (AOR 2.39, CI 1.19–4.79) and executive dysfunction (AOR 3.09, CI 1.61–5.92).

Conclusions: Older homeless adults displayed a prevalence of cognitive impairment 3–4 times higher than has been observed in general population adults aged 70 and older. Impaired cognition in older homeless adults could impact access to housing programs and the treatment of health conditions, including the treatment of alcohol use disorders.

1. Introduction

The median age of single homeless adults in the United States is rising, and now approaches 50 (Culhane et al., 2013; Hahn et al., 2006). Those born in the latter half of the baby boom (1954–1963) have had an elevated risk of homelessness throughout their lives (Culhane et al., 2013). For older homeless adults, chronic medical conditions, including geriatric syndromes, are causally linked to healthcare utilization and mortality (Brown et al., 2016b; Brown et al., 2012; Garibaldi et al., 2005; Gelberg et al., 1990).

Prior studies have found a high prevalence of cognitive impairment among homeless adults (point estimates range from 4 to 40%) and

impairment occurring at an earlier age than in the general population (Brown et al., 2012; Buhrich et al., 2000; Burra et al., 2009; Depp et al., 2015; Gonzalez et al., 2001; Nishio et al., 2015; Pluck et al., 2011; Spence et al., 2004). However, the majority of these studies relied on samples either recruited from shelter environments, which may not be representative of the homeless population overall, (Burra et al., 2009; Spence et al., 2004) or from specific populations (e.g., persons with mental health conditions) (Bousman et al., 2010; Seidman et al., 1997; Stergiopoulos et al., 2015). Most studies of cognitive function in homeless adults have used global tests of cognition (e.g., Modified Mini Mental Status Exam [MMSE]) (Burra et al., 2009; Depp et al., 2015). Few studies have examined specific domains, such as memory and

* Corresponding authors at: UCSF/ZSFG Box 1364, San Francisco, CA, 94143, USA.

E-mail addresses: Emily.hurstak@ucsf.edu, Emilyhurstak@gmail.com (E. Hurstak), Margot.kushel@ucsf.edu (M. Kushel).

<http://dx.doi.org/10.1016/j.drugalcdep.2017.06.002>

Received 7 February 2017; Received in revised form 27 April 2017; Accepted 1 June 2017

Available online 04 July 2017

0376-8716/ © 2017 Elsevier B.V. All rights reserved.

executive function (Bousman et al., 2010; Brown et al., 2012; Ennis et al., 2014). Executive function is defined as high-level cognitive processing involved in the control and regulation of goal-directed behaviors (Alvarez and Emory, 2006). Studies of homeless adults recruited from shelters identified a high prevalence of executive dysfunction (Brown et al., 2012; Gonzalez et al., 2001; Seidman et al., 1997; Seidman et al., 2003). Preserved executive function is essential to making plans, prioritizing, and completing tasks and thus may be of particular importance to homeless adults attempting to navigate complex social services to address their basic needs (Burra et al., 2009).

There is a poor understanding of the risk factors associated with cognitive impairment in homeless adults. Potential explanations include comorbid conditions such as vascular disease, substance use, traumatic brain injury (TBI), neurodevelopmental disorders, and psychiatric disease (Backer and Howard, 2007). Alcohol misuse and TBI are known causes of cognitive impairment in the general population (Brandt et al., 1983; Gardner et al., 2017), but few studies have explored these risk factors among homeless adults (Seidman et al., 2003; Topolovec-Vranic et al., 2012). We evaluated global cognitive function and executive function in a population-based sample of homeless adults aged ≥ 50 . We chose this age range because of the high prevalence of geriatric conditions occurring in homeless adults 50 and older (Brown et al., 2012, 2013). We examined the relationship between substance use, TBI, and cognitive impairment, hypothesizing that high-risk substance use and a history of traumatic brain injury (TBI) are associated with cognitive impairment.

2. Methods

2.1. Participants

During July 2013–June 2014, we enrolled a population-based sample of 350 homeless adults from overnight shelters, homeless encampments, meal programs, and recycling centers in Oakland, California for the Health Outcomes in People Experiencing Homelessness in Older Middle age (HOPE HOME) study. This outreach approach expanded on prior methods (Burnam and Koegel, 1988) to include homeless encampments and recycling centers to ensure inclusion of unsheltered adults. We recruited individuals from all overnight homeless shelters in Oakland that served single adults, all free and low-cost meal programs that served homeless persons ≥ 3 prepared meals a week, a recycling center, and places where unsheltered people stay overnight (Brown et al., 2016a; Lee et al., 2016a). Individuals were eligible to participate if they spoke English, were homeless as defined by the federal Homeless Emergency Assistance and Rapid Transitions to Housing (HEARTH) Act (2010) Department of Housing and Urban Development (2011), and were aged ≥ 50 . Participants provided written informed consent. We excluded individuals who could not provide informed consent as demonstrated by an inability to state the goals and risks of participation through a teach-back method (Carpenter et al., 2000). We excluded individuals unable to communicate due to hearing impairment. Research assistants documented possible intoxication with drugs or alcohol for all participants at the time of the interview (Fig. 1). Participants received a \$25 dollar gift card. The institutional review board at the University of California San Francisco approved this study.

2.2. Measures

2.2.1. Dependent variables: neuropsychological tests

A licensed neuropsychologist (CWJ) trained all research assistants in the administration and scoring of the neuropsychological tests and supervised staff to ensure fidelity.

We measured global cognitive function using the Modified Mini-Mental State Test (3MSE), an extended version of the Mini-Mental State Examination (MMSE), which assesses memory, concentration,

orientation, and visuospatial functioning (Bland and Newman, 2001; Teng and Chui, 1987). Scores range from 0 to 100; higher scores indicate better performance. We defined impairment as a score ≤ 1.5 standard deviations (7th percentile) below age- and education-adjusted norms (Bravo and Hebert, 1997). We used the Trail Making Test part B (TMTB), a measure of task switching (Sanchez-Cubillo et al., 2009b) to test executive function (Reitan, 1958; Sanchez-Cubillo et al., 2009a). The score is the amount of time (in s) to complete the test up to a maximum score of 300 s (Wong et al., 2016). We excluded participants unable to complete the tests (e.g., interruptions, health conditions). We defined impairment as a score ≤ 1.5 standard deviations of age- and sex adjusted norms (Heaton et al., 2004).

2.2.2. Independent variables

2.2.2.1. Demographics. We collected self-reported demographic information including age, sex, and ethnicity (Latino or not Latino), race (American Indian/Alaskan Native, Asian, Black/African American, Native Hawaiian/other Pacific Islander, White, and other), highest educational attainment, occupational status, and history of serving in the military in a combat zone. We classified participants' highest educational attainment into three categories: less than a high school education, high school or a high school equivalency test (GED), and post-high school education (college or vocational school). We classified occupational status into four categories: jobs involving unskilled labor, semi-skilled labor, clerical or skilled manual labor, and jobs involving executive, managerial or higher level administrative positions.

2.2.2.2. Housing. We asked participants to report the date when they were last stably housed, defined as a non-institutional setting where they stayed for at least 12 months (Burt, 1999). Participants were also asked where they stayed each night over the previous 6 months using a residential follow-back calendar (i.e., shelters, unsheltered places etc.) (Tsemberis et al., 2007).

2.2.2.3. Substance use. We administered the World Health Organization (WHO) Alcohol Use Disorders Identification Test (AUDIT) to assess current risk and severity of alcohol use disorders (Babor et al., 2001). We modified AUDIT by asking about alcohol use in the last six months. The test includes three questions on alcohol consumption, three questions on drinking behavior and possible alcohol dependence, and four questions on drinking consequences. Scores range from 0 to 40, with higher scores indicating greater alcohol use. A total score ≥ 8 on AUDIT is associated with hazardous or harmful alcohol use (Conigrave et al., 1995); scores ≥ 8 have good sensitivity and specificity for an alcohol use disorder (Lundin et al., 2015; Rumpf et al., 2002). The WHO classifies scores as 8–15 as risky drinking, 16–19 consistent with high-risk or harmful level of alcohol use, and ≥ 20 as high-risk with possible alcohol dependence. Scores ≥ 4 on the alcohol dependence sub-scale suggest risk for alcohol dependence (Babor et al., 2001). We considered a total score of ≥ 8 as suggestive of hazardous drinking and ≥ 16 and/or ≥ 4 on the alcohol dependency sub-scale as suggestive of high-severity alcohol use.

We administered the WHO Alcohol, Smoking and Substance Involvement Screening Test (ASSIST, scores range 0–39) to assess illicit substance use during the six months prior to the interview, classifying current substance risk as moderate (4–26) individually for four substances (marijuana, cocaine, opioids, or amphetamines) (Humeniuk et al., 2010).

2.2.2.4. Mental health. We assessed mental health conditions in three ways. First, we administered the Center for Epidemiologic Studies Depression Scale (CES-D), a reliable measure of depressive symptoms in homeless populations (Ritchey et al., 1990; Wong, 2000), using a standard cut-off CES-D score of ≥ 16 as indicative of depressive symptoms (Weissman et al., 1977). Second, we screened participants for post-traumatic stress disorder (PTSD) using the Primary Care PTSD

Download English Version:

<https://daneshyari.com/en/article/5120388>

Download Persian Version:

<https://daneshyari.com/article/5120388>

[Daneshyari.com](https://daneshyari.com)