

# Homelessness in a National Sample of Incarcerated Veterans in State and Federal Prisons

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Published online: 20 March 2013  
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**Abstract** The Veterans Health Administration (VHA) has been increasing efforts to reach out to assist incarcerated veterans. While previous studies have shown strong associations between incarceration and homelessness, few studies have examined distinctive characteristics of incarcerated homeless and non-homeless veterans. National administrative data on 30,348 incarcerated veterans served by the Health Care for Re-entry Veterans (HCRV) program were analyzed. Incarcerated veterans were classified into four groups based on their history of past homelessness: not homeless, transiently homeless, episodically homeless, and chronically homeless. Multinomial logistic regression was used to compare groups on sociodemographic characteristics, criminal justice status, clinical status, and their interest in using VHA services. Of the sample, 70 % were classified as not homeless,

8 % as transiently homeless, 11 % as episodically homeless, and 11 % as chronically homeless. Thus, 30 % of the sample had a homeless history, which is five times the 6 % rate of past homelessness among adult men in the general population. Compared to non-homeless incarcerated veterans, all three homeless groups reported significantly more mental health problems, more substance abuse, more times arrested in their lifetime, more likely to be incarcerated for a non-violent offense, and were more interested in receiving VHA services after release from prison. Together, these findings suggest re-entry programs, like HCRV, can address relevant mental health-related service needs, especially among formerly homeless veterans and veterans in need of services are receptive to the offer of assistance.

**Keywords** Prisoners · Homeless persons · Veterans · Health services

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## Introduction

Homelessness and incarceration are known risk factors for each other (Greenberg and Rosenheck 2008; Kushel et al. 2005; Metraux and Culhane 2006). Because incarcerated adults are at risk for a host of negative outcomes after their release (Fazel and Baillargeon 2011; Hawthorne et al. 2012), and homeless adults experience a range of physical, mental, and other psychosocial problems (Gelberg and Linn 1989; Tsai and Rosenheck 2012a), incarcerated adults with histories of homelessness are a particularly vulnerable group (Tsai and Rosenheck 2012b).

Among adults in the general population, about 5 % have some history of homelessness (6 % among men) (Greenberg and Rosenheck 2010), while about 15 % of jail inmates have such homeless histories (Greenberg and Rosenheck 2008). More recent estimates of homelessness

among those incarcerated in state and federal prisons, and particularly veterans, are needed.

Greater specificity is also needed in differentiating between different types of homelessness among the incarcerated population. Previous studies of single homeless adults (Kuhn and Culhane 1998) and homeless families (Culhane et al. 2007) in the general population have identified three distinct patterns of homelessness: “transitional”-small number of brief episodes over a multi-year period, “episodic” have more episodes alternating between shelters, hospitals, and other institutions, or “chronic”- long periods of homeless episodes. Using this classification to examine incarcerated adults and identifying individual characteristics relevant to their health care needs may be relevant for treatment and prevention.

The Veterans Health Administration (VHA) has been especially focused on reducing both incarceration (McGuire 2007) and homelessness (United States Department of Veterans Affairs 2009) among veterans. Veterans constitute about 10 % of prison inmates (Noonan and Mumola 2007) and comprise about 16 % of the homeless population (U.S. Department of Housing and Urban Development and U.S. Department of Veterans Affairs 2011). VHA has recently created several programs to prevent the incarceration of veterans who are arrested and to assist in the re-entry to community life of veterans released from prison (McGuire et al. 2003; United States Department of Veterans Affairs 2012).

The current study aimed to (1) characterize the extent of homelessness among a national sample of veterans incarcerated in state and federal prisons; and (2) identify individual characteristics associated with different types of homeless histories.

## Methods

### Program Description

The Health Care for Re-entry Veterans (HCRV) program assists incarcerated veterans (in prisons, not jails) in accessing VHA services upon their release into the community with the goal of preventing both re-incarceration and homelessness. The program consists of HCRV specialists who partner with state and federal correctional staff to meet with incarcerated veterans to conduct pre-release assessments, facilitate post-release linkages, and provide short-term clinical management after release. HCRV specialists work closely with correctional institutions to identify veterans and exchange information about their release date. Notably, HCRV specialists do not specifically focus on incarcerated veterans with a homeless history, but attempt to contact all veterans in prison settings. HCRV

specialists usually start outreach through group orientation and information sessions, which are not only attended by veterans who will be released soon, but also by those with life sentences (who are interested in learning about VA benefits, burial services, etc.) and those with no homeless history (who are interested in employment, mental health services, etc.). Contacts with veterans while incarcerated are limited to assessment, information sharing, and planning for post-release treatment and no formal VHA medical services are delivered in the incarceration setting.

Administrative national data across all VA services regions, or Veterans Integrated Service Networks, of outreach assessments by the HCRV program from October 2007 to April 2011 were obtained for this study. Use of this data was approved by the institutional review boards at VA Connecticut Healthcare System and Yale University School of Medicine.

### Sample

A total of 30,348 incarcerated veterans served by the HCRV program nationally were included in this study. Twenty veterans were missing data on homeless history and were excluded from the analyses.

### Measures

Information on homeless history was obtained by questions addressing whether and how long each veteran had been homeless before their current incarceration and how many separate episodes of homelessness they had experienced in the previous 3 years.

Sociodemographic characteristics reported by veterans included their age, gender, race/ethnicity, marital status, military history, and combat exposure. Combat exposure was defined as receiving hostile or friendly fire in a combat zone.

Criminal history variables included type of offense(s) veterans were currently incarcerated for, the length of their current incarceration, the age at which they were first arrested, and the number of times they have been arrested in their lifetime (excluding their current incarceration). The type of offense was classified as either: violent offense (e.g., murder, manslaughter, assault, robbery), property offense (e.g., burglary, motor vehicle theft, stolen property, arson, vandalism), drug offense (e.g., possession, trafficking), public order offense (e.g., weapons offense, prostitution, public intoxication, driving under the influence), probation/parole violation, or other/unspecified. These offense categories were not treated as mutually exclusive, so veterans could have reported multiple offenses in different categories. Veterans were asked whether they had been drinking alcohol or using drugs at the time of the offense. Length of

current incarceration was calculated from their expected release date, which included any time in jail and/or prison. Age of first arrest and lifetimes arrested were based on veteran self-report.

To assess clinical status, psychiatric diagnoses were made by the HCRV specialist based on interviewer observations, assessment, and veteran's self-reported history. Psychiatric diagnoses included substance use disorders (alcohol or drug abuse/dependency), psychotic disorders (schizophrenia or bipolar disorder), mood disorders, personality disorders (any personality disorder), combat-related posttraumatic stress disorder, adjustment disorder, and other or unspecified disorders. Veterans were asked whether they had any serious medical problems, and a mean mental health score was calculated using eight items from the Addiction Severity Index- Psychiatric subscale (McLellan et al. 1980).

Veterans were asked whether or not they had used any VA services in the previous 6 months. Veterans were also asked whether or not they were interested and willing to participate in each of 5 different VA services, including psychiatric or substance abuse treatment, medical services, residential treatment services (including those funded through VHA's Grant and Per Diem program), social-vocational assistance (including VHA's Compensated Work Therapy and Incentive Therapy programs), and case management services.

#### Data Analysis

First, incarcerated veterans were categorized into four separate groups based on past homelessness (which did not include time incarcerated): (1) Not homeless- not currently homeless and no homelessness in the past 3 years; (2) Transiently homeless- homeless at the time of incarceration for less than 1 month or homeless only once in the past 3 years; (3) Episodically homeless- homeless at the time of incarceration for 1 month or more and less than 1 year and/or homeless three times or less in the past 3 years; (4) Chronically homeless- homeless at the time of incarceration for one year or more or homeless more than three times in the past 3 years. This categorization is based on classifications identified in previous research (Culhane et al. 2007; Kuhn and Culhane 1998) and the definition of "chronic homelessness" was established by the federal government (U.S. Department of Housing and Urban Development 2007).

Second, bivariate analyses were conducted using analyses of variance and Chi square tests to compare the four groups on sociodemographic characteristics, criminal justice status, clinical status, and interest in using VA services. Post-hoc analyses were conducted using Tukey's Honestly Significant Difference test and pair-wise Chi square tests to make individual group comparisons. Third, multivariate analyses were conducted using multinomial

logistic regression models to identify sociodemographic characteristics, criminal justice status, clinical status, and measures of interest in VA services, independently associated with each homeless group. Each group served as a reference group for comparison with the other groups. To adjust for multiple comparisons and reduce potential for type I error, statistical significance for all analyses was set at the  $p < 0.01$  level.

#### Results

Of the 30,348 incarcerated veterans in the sample, 30.32 % had some history of homelessness- 7.75 % were transiently homeless, 11.29 % were episodically homeless, and 11.28 % were chronically homeless. Thus, among those with a history of past homelessness, 74.44 % were either episodically or chronically homeless.

Table 1 shows that incarcerated veterans who were chronically homeless were older, more likely to be Black or Hispanic, less likely to be married, more likely to have served during the Vietnam War, and more likely to have no income than incarcerated veterans who were not homeless, transiently homeless, or episodically homeless.

In contrast, incarcerated veterans who were not homeless were less likely to be Black and worked more days in the past month compared to incarcerated veterans with any past homelessness, and were more likely to have served since September 11. Both incarcerated veterans who were chronically homeless and those who were episodically homeless were more likely to report combat exposure than non-homeless incarcerated veterans.

Incarcerated veterans who were not homeless, however, had the longest incarceration sentences; while incarcerated chronically homeless veterans reported being arrested the most times in their lifetime.

On clinical status, chronically homeless incarcerated veterans were most likely to report serious medical problems, alcohol abuse/dependency, drug abuse/dependency, being under the influence of alcohol and/or drugs at the time of their offense, and had higher mental health scores (reflecting greater psychopathology) than all other incarcerated groups. Chronically homeless incarcerated veterans were also the most likely to be interested in using VA services for mental health, medical care, residential treatment, social-vocational assistance, and case management.

Overall, compared to incarcerated veterans who were not homeless, all three groups of homeless incarcerated veterans were less likely to be currently incarcerated for a violent offense and more likely to be incarcerated for a drug offense, a property offense, or for probation/parole violations. All three homeless groups also reported being arrested at a younger age, arrested more times in their

**Table 1** Sociodemographic characteristics, criminal justice status, and clinical status of incarcerated veterans ( $n = 30,348$ )

	1) Not homeless ( $n = 21,747$ )	2) Transiently homeless ( $n = 2,351$ )	3) Episodically homeless ( $n = 3,427$ )	4) Chronically homeless ( $n = 3,423$ )	Test of difference <sup>a</sup>
<b>Sociodemographics</b>					
Age	48.48 (11.13)	48.10 (9.56)	47.73 (9.22)	49.05 (8.69)	$F(3,30940) = 9.80^{**}$ 4 > 1,2,3; 1 > 3
Gender (Male)	21,400 (98.40 %)	2,313 (98.38 %)	3,361 (98.07 %)	3,350 (97.87 %)	$X^2(3) = 6.41$
<b>Ethnicity</b>					
White	12,084 (55.77 %)	1,168 (49.96 %)	1,513 (44.34 %)	1,334 (39.14 %)	$X^2(9) = 447.78^{**}$ 1 > 2 > 3 > 4
Black	7,757 (35.80 %)	978 (41.83 %)	1,559 (45.69 %)	1,646 (48.30 %)	
Hispanic	1,333 (6.15 %)	144 (6.16 %)	234 (6.86 %)	314 (9.21 %)	
Other	494 (2.28 %)	48 (2.05 %)	106 (3.11 %)	114 (3.35 %)	
<b>Marital status</b>					
Married	3,752 (17.25 %)	244 (10.38 %)	363 (10.59 %)	280 (8.18 %)	$X^2(6) = 311.44^{**}$ 1 > 2,3 > 4
Widowed/ separated/divorced	12,189 (56.05 %)	1,408 (59.89 %)	2,002 (58.42 %)	2,093 (61.15 %)	
Never married	5,804 (26.69 %)	699 (29.73 %)	1,062 (30.99 %)	1,050 (30.67 %)	
<b>Period of service</b>					
Before vietnam war	783 (3.60 %)	29 (1.23 %)	42 (1.23 %)	50 (1.46 %)	$X^2(12) = 328.79^{**}$
Vietnam war	5,891 (27.09 %)	654 (27.82 %)	818 (23.87 %)	939 (27.43 %)	1 > 4 > 2 > 3
Post-vietnam	9,501 (43.69 %)	1,140 (48.49 %)	1,831 (53.43 %)	1,810 (52.88 %)	
Persian gulf	4,653 (21.40 %)	434 (18.46 %)	620 (18.09 %)	559 (16.33 %)	
After September 11, 2001	919 (4.23 %)	94 (4.00 %)	116 (3.38 %)	65 (1.90 %)	
Combat exposure	3,315 (15.28 %)	342 (14.62 %)	441 (12.91 %)	455 (13.32 %)	$X^2(3) = 19.70^{**}$ 1 > 3,4
Days worked in past month	5.09 (9.37)	4.36 (8.92)	3.43 (8.22)	3.63 (8.43)	$F(3,30941) = 51.89^{**}$ 1 > 2 > 3,4
<b>Total income in past month</b>					
No income	13,767 (63.60 %)	1,532 (65.55 %)	2,473 (72.42 %)	2,318 (67.96 %)	$X^2(6) = 134.00^{**}$ 4 > 3 > 1,2
Less than \$1,000	7,350 (33.95 %)	757 (32.39 %)	871 (25.51 %)	1,057 (30.99 %)	
\$1,000 or more	530 (2.45 %)	48 (2.05 %)	71 (2.08 %)	36 (1.06 %)	
<b>Criminal Justice Status</b>					
<b>Current incarceration offense</b>					
Violent offense	7,872 (39.23 %)	562 (26.89 %)	682 (21.78 %)	877 (27.60 %)	$X^2(3) = 534.46^{**}$ 1 > 2,4 > 3
Property offense	4,446 (22.50 %)	637 (30.22 %)	1,036 (32.93 %)	988 (30.75 %)	$X^2(3) = 256.98^{**}$ 3 > 2 > 1; 4 > 1
Drug offense	4,585 (23.20 %)	502 (23.87 %)	877 (27.78 %)	886 (27.80 %)	$X^2(3) = 55.33^{**}$ 3,4 > 2 > 1
Public order offense	3,201 (16.35 %)	317 (15.23 %)	426 (13.70 %)	380 (12.07 %)	$X^2(3) = 46.91^{**}$ 1 > 3,4; 2 > 4
Probation/parole violation	3,927 (20.02 %)	616 (29.14 %)	991 (31.26 %)	950 (29.72 %)	$X^2(3) = 346.51^{**}$ 2,3,4 > 1
Other	1,443 (7.43 %)	193 (9.25 %)	247 (7.97 %)	235 (7.45 %)	$X^2(3) = 9.56$
Length of current incarceration (months)	55.09 (71.51)	33.68 (50.37)	29.82 (47.00)	43.07 (63.14)	$F(3,29308) = 190.40^{**}$ 1 > 4 > 2,3
<b>Using substances at time of offense</b>					
No	6,703 (53.67 %)	549 (46.41 %)	714 (39.53 %)	632 (36.83 %)	$X^2(3) = 430.92^{**}$ 1 > 2 > 3 > 4
Under influence of alcohol	2,669 (21.37 %)	231 (19.53 %)	386 (21.37 %)	336 (19.58 %)	
Under influence of drugs	1,646 (13.18 %)	194 (16.40 %)	356 (19.71 %)	337 (19.64 %)	
Under influence of alcohol & drugs	1,472 (11.79 %)	209 (17.67 %)	350 (19.38 %)	411 (23.95 %)	

**Table 1** continued

	1) Not homeless ( <i>n</i> = 21,747)	2) Transiently homeless ( <i>n</i> = 2,351)	3) Episodically homeless ( <i>n</i> = 3,427)	4) Chronically homeless ( <i>n</i> = 3,423)	Test of difference <sup>a</sup>
Age first arrested for crime	27.26 (12.16)	25.27 (10.52)	24.41 (9.67)	24.79 (10.12)	$F(3,30934) = 101.95^{**}$ 1 > 2,3,4
No. of times arrested in lifetime	6.92 (10.35)	10.05 (13.45)	10.74 (13.07)	12.27 (15.45)	$F(3,30936) = 304.52^{**}$ 4 > 2,3 > 1
Clinical status					
Any serious medical problems	12,412 (58.28 %)	1,356 (59.01 %)	2,051 (61.70 %)	2,231 (67.48 %)	$X^2(3) = 107.09^{**}$ 4 > 3 > 1,2
Psychiatric diagnosis					
Alcohol abuse/dependency	8,677 (40.03 %)	1,189 (50.94 %)	1,920 (56.26 %)	2,053 (60.28 %)	$X^2(3) = 745.78^{**}$ 4 > 3 > 2 > 1
Drug abuse/dependency	8,058 (37.16 %)	1,283 (54.76 %)	2,162 (63.27 %)	2,282 (66.84 %)	$X^2(3) = 1748.35^{**}$ 4 > 3 > 2 > 1
Psychotic disorder	1,331 (6.12 %)	168 (7.15 %)	286 (8.35 %)	308 (9.00 %)	$X^2(3) = 55.52^{**}$ 3 > 1; 4 > 1,2
Mood disorder	5,433 (25.07 %)	773 (33.09 %)	1,146 (33.64 %)	1,206 (35.50 %)	$X^2(3) = 271.15^{**}$ 2,3,4 > 1
Personality disorder	2,648 (12.23 %)	221 (9.47 %)	282 (8.28 %)	306 (9.01 %)	$X^2(3) = 75.32^{**}$ 1 > 2,3,4
Combat-related PTSD	1,318 (6.08 %)	160 (6.86 %)	197 (5.79 %)	220 (6.38 %)	$X^2(3) = 3.64$
Adjustment disorder	4,458 (20.57 %)	438 (18.69 %)	770 (22.55 %)	597 (17.52 %)	$X^2(3) = 31.68^{**}$ 1,3 > 2,4
Other psychiatric disorder	2,165 (10.01 %)	285 (12.22 %)	420 (12.36 %)	453 (13.35 %)	$X^2(3) = 50.25^{**}$ 2,3,4 > 1
Mental health score	1.03 (1.63)	1.51 (1.86)	1.69 (1.92)	1.85 (1.98)	$F(3,30936) = 349.55^{**}$ 4 > 3 > 2 > 1
Used any VA services, past 6 months	877 (4.06 %)	243 (10.43 %)	387 (11.41 %)	283 (8.35 %)	$X^2(3) = 443.68^{**}$ 2,3 > 4 > 1
Interested and willing to use VA services for:					
Mental health	10,490 (52.44 %)	1,478 (67.77 %)	2,369 (74.31 %)	2,507 (77.81 %)	$X^2(3) = 1204.67^{**}$ 4 > 3 > 2 > 1
Medical care	16,089 (79.93 %)	1,832 (83.84 %)	2,711 (85.06 %)	2,843 (88.24 %)	$X^2(3) = 165.33^{**}$ 4 > 3 > 2 > 1
Residential treatment	5,365 (27.11 %)	1,147 (53.52 %)	1,828 (58.53 %)	2,050 (64.45 %)	$X^2(3) = 2735.47^{**}$ 4 > 3 > 2 > 1
Social-vocational assistance	5,967 (30.08 %)	1,070 (50.02 %)	1,707 (54.59 %)	1,882 (59.33 %)	$X^2(3) = 1642.05^{**}$ 4 > 3 > 2 > 1
Case management	6,805 (34.19 %)	1,182 (54.87 %)	1,832 (58.44 %)	2,035 (63.77 %)	$X^2(3) = 1614.91^{**}$ 4 > 3 > 2 > 1

\*  $p < 0.01$ , \*\*  $p < 0.001$

<sup>a</sup> Reference groups are White, married, Before Vietnam War, no income, not using substances at time of offense

lifetime, and were more likely to have used VA services in the past 6 months, were identified as having a mood disorder or some “other” psychiatric disorder than incarcerated non-homeless veterans.

Table 2 shows significant variables identified in backward stepwise multinomial regressions related to homeless history. Compared to non-homeless incarcerated veterans, incarcerated veterans who were transiently homeless, episodically homeless, and chronically homeless were all significantly less likely to be married, more likely to have a drug abuse/dependency or alcohol abuse/dependency diagnosis, had higher mental health scores reflecting

greater psychopathology, and were more interested in participating in VA residential treatment, social–vocational assistance, or case management services.

All three homeless incarcerated veteran groups were also significantly more likely to be currently incarcerated for a property offense or probation/parole violation, and had been arrested more times in their lifetimes than non-homeless incarcerated veterans. Also notable is that compared to non-homeless incarcerated veterans, both episodically and chronically homeless veterans were more likely to be of racial/ethnic minority. Chronically homeless incarcerated veterans were also more likely to have served

during the Vietnam War or the post-Vietnam era, but were less likely to report combat exposure than non-homeless incarcerated veterans.

Additional analyses comparing groups reporting past homelessness showed that compared to incarcerated veterans who were transiently homeless, episodically homeless incarcerated veterans were significantly more likely to be interested in participating in VA psychiatric or substance abuse treatment (OR = 1.49; 95 % CI = 1.15–1.92;  $p < 0.01$ ) and chronically homeless incarcerated veterans were significantly more likely to be Black (OR = 1.45; 95 % CI = 1.20–1.75;  $p < 0.001$ ) or Hispanic (OR = 2.59; 95 % CI = 1.79–3.75;  $p < 0.001$ ), and to have served during the Vietnam War (OR = 2.15; 95 % CI = 1.37–3.38;  $p < 0.01$ ), post-Vietnam era (OR = 2.31; 95 % CI = 1.50–3.56;  $p < 0.001$ ), and the Persian Gulf (OR = 2.38; 95 % CI = 1.50–3.77;  $p < 0.001$ ), interested in participating in VA medical services (OR = 1.56; 95 % CI = 1.01–2.17;  $p < 0.01$ ), length of current incarceration (OR = 1.00; 95 % CI = 1.00–1.01;  $p < 0.01$ ), and work in the past month (OR = 0.98; 95 % CI = 0.97–0.99;  $p < 0.01$ ).

Compared to incarcerated veterans who were episodically homeless, chronically homeless incarcerated veterans were significantly more likely to be Hispanic than White (OR = 1.74; 95 % CI = 1.29–2.35;  $p < 0.001$ ), and to have served during the Vietnam War than after September 11, 2001 (OR = 1.86; 95 % CI = 1.20–2.87;  $p < 0.01$ ), but they were less likely to have an adjustment disorder (OR = 0.65; 95 % CI = 0.53–0.79;  $p < 0.001$ ) or have used VA services in the past 6 months (OR = 0.66; 95 % CI = 0.50–0.88;  $p < 0.01$ ). Chronically homeless incarcerated veterans were also significantly more likely to be interested in participating in VA medical services (OR = 1.82; 95 % CI = 1.33–2.50;  $p < 0.01$ ), had longer current incarceration periods (OR = 1.01; 95 % CI = 1.00–1.01;  $p < 0.001$ ), and fewer days worked (OR = 0.98; 95 % CI = 0.97–0.99;  $p < 0.01$ ) than episodically homeless incarcerated veterans.

## Discussion

In this national sample of incarcerated veterans in state and federal prisons, 30 % had a history of homelessness, which is five times the 6 % rate found among adult men in the general population (Greenberg and Rosenheck 2010), and twice the 15 % rate among jail inmates (Greenberg and Rosenheck 2008), illustrating the strong association between incarceration and homelessness consistent with previous studies (Kushel et al. 2005; McGuire 2007; Metraux and Culhane 2006). Of incarcerated veterans with a homeless history, nearly three-fourths were either

episodically or chronically homeless, which contrasts with findings that the majority of homeless single adults in the general population who use shelters can be classified as transiently homeless (Kuhn and Culhane 1998), and suggests that most incarcerated veterans with homeless histories need more permanent solutions to address their risk of becoming homeless after their release from prison.

Given the increased focus on recent returning veterans, it is important to point out that those who served after September 11, 2001 and were incarcerated appeared to be less likely to have a history of chronic homelessness compared to veterans of other service eras, especially those who served during the Vietnam and post-Vietnam era, consistent with studies of the non-incarcerated veteran population (Edens et al. 2011; Tsai et al. 2012).

Multivariate analyses, controlling for sociodemographics and other covariates, showed that compared to incarcerated veterans with no homeless history, incarcerated veterans with a homeless history reported greater psychopathology and were more likely to have substance abuse problems. Although certain mental health disorders, such as personality and adjustment disorders, were associated with a reduced likelihood of homelessness, a large majority (79 %) of the sample had a mental disorder and the finding may simply reflect that less severe mental disorders were associated with a reduced likelihood of homelessness. Incarcerated veterans with a homeless history also reported having more lifetime arrests and being arrested at a younger age than non-homeless incarcerated veterans. Given these findings coupled with previous studies showing mental health and substance abuse problems are risk factors for criminal recidivism and homelessness (McNiel and Binder 2007; Solomon et al. 1994; Watson et al. 2001), incarcerated veterans with homeless histories thus represent an especially vulnerable group in need of mental health treatment and special interventions to prevent recurrence of homelessness.

It is also notable that incarcerated veterans with a homeless history were more likely to be currently incarcerated for a non-violent offense, most often a property offense, than non-homeless incarcerated veterans. This is consistent with previous studies of homeless populations that have found most have criminal histories involving misdemeanor and other more minor or substance abuse-related offenses (Burt et al. 1999; Fischer 1988; Metraux and Culhane 2006), and supports the notion that these veterans struggle with mental health, substance abuse, and other psychosocial problems that result in minor infractions with the law.

Partially reflecting their greater needs, incarcerated veterans with a homeless history reported they were more interested and willing to participate in a variety of VHA services than non-homeless incarcerated veterans, especially



**Table 2** Significant variables identified in backward stepwise multinomial regressions associated with homeless histories of incarcerated veterans

Variables	Odds ratios	95 % confidence intervals for odds ratios
<b>Not homeless versus transiently homeless</b>		
Married <sup>a</sup>	0.54**	0.42–0.70
Drug abuse/dependency <sup>b</sup>	1.55**	1.32–1.81
Adjustment disorder	0.71**	0.59–0.85
Used VA medical services in past 6 months	1.67**	1.27–2.18
Property offense	1.51**	1.29–1.78
Probation/parole violation	1.54**	1.31–1.82
Interested and willing to participate in VA residential treatment services	2.12**	1.73–2.60
Interested and willing to participate in VA social–vocational assistance	1.35*	1.10–1.66
Interested and willing to participate in VA case management services	1.45*	1.18–1.79
Mental health score	1.16**	1.11–1.21
Length of current incarceration (months)	1.00**	0.99–1.00
Times arrested in lifetime	1.01**	1.01–1.02
<b>Not homeless versus episodically homeless</b>		
Black <sup>c</sup>	1.38**	1.21–1.58
Married	0.55**	0.44–0.68
Alcohol abuse/dependency	1.24*	1.09–1.42
Drug abuse/dependency	1.71**	1.49–1.95
Personality disorder	0.61**	0.48–0.77
Other disorder	0.66**	0.53–0.82
Used VA medical services in past 6 months	1.95**	1.56–2.43
Property offense	1.59**	1.39–1.82
Probation/parole violation	1.44**	1.25–1.66
Interested and willing to participate in VA medical services	0.69**	0.56–0.85
Interested and willing to participate in VA residential treatment	2.18**	1.82–2.60
Interested and willing to participate in VA social–vocational assistance	1.35*	1.13–1.61
Mental health score	1.17**	1.13–1.22
Length of current incarceration (months)	0.99**	0.99–1.00
Age first arrested	0.99*	0.98–1.00
Times arrested in lifetime	1.01*	1.00–1.01
<b>Not homeless vs. Chronically homeless</b>		
Black	2.25**	1.56–3.25
Hispanic	1.73**	1.51–2.00

**Table 2** continued

Variables	Odds ratios	95 % confidence intervals for odds ratios
Asian/other	2.16**	1.70–2.74
Married	0.39**	0.30–0.50
Vietnam war era <sup>d</sup>	2.06**	1.41–3.01
Post-vietnam era	2.07**	1.44–2.99
Combat exposure	0.73*	0.60–0.90
Alcohol abuse/dependency	1.30**	1.13–1.50
Drug abuse/dependency	1.94**	1.68–2.25
Personality disorder	0.54**	0.42–0.69
Adjustment disorder	0.61**	0.52–0.72
Property offense	1.60**	1.38–1.85
Probation/parole violation	1.54**	1.32–1.79
Interested and willing to participate in VA residential treatment	2.75**	2.29–3.31
Interested and willing to participate in VA social–vocational assistance	1.42**	1.18–1.71
Mental health score	1.24**	1.19–1.29
Length of current incarceration (months)	1.00**	1.00–1.00
Days worked in past month	0.98**	0.97–0.99
Times arrested in lifetime	1.02**	1.01–1.02

\*  $p < 0.01$ , \*\*  $p < 0.001$ <sup>a</sup> Reference group is not married<sup>b</sup> Reference group for psychiatric disorders was the absence of the given disorder<sup>c</sup> Reference group is White<sup>d</sup> Reference group was service after September 11, 2001

VHA residential treatment, social–vocational assistance, and case management services. Episodically homeless incarcerated veterans were more interested and willing to participate in VA psychiatric or substance abuse treatment than incarcerated veterans who were transiently homeless. Chronically homeless incarcerated veterans were more interested and willing to participate in VA medical services than episodically homeless incarcerated veterans, perhaps because they often have chronic medical conditions (Larimer et al. 2009; Sadowski et al. 2009).

Together, the findings of this study demonstrate the strong association of incarceration and homelessness, and suggest that re-entry programs, like HCRV, that connect incarcerated veterans with mental health and social services after their release, address important needs and risks. Furthermore, veterans in need of these services are receptive to them and report they are interested in accessing VHA services for the medical, mental health, and psychosocial needs. This study also extends a previous

classification of different types of homelessness (Culhane et al. 2007; Kuhn and Culhane 1998) to the incarcerated veteran population. This type of classification may be useful in identifying which veterans needs transitional types of housing and which need more permanent supported housing and long-term care programs, in addition to mental health and substance abuse services.

There were several limitations of the study worth noting. Because information on homeless history was based on veteran self-report, its accuracy is unknown. Psychiatric diagnoses were not formally assessed with structured diagnostic instruments and their validity relied on the clinical expertise of HCRV specialists. The cross-sectional design of the study precludes inferences about the directionality of the associations found or whether they hold true over time. The study sample consisted only of incarcerated veterans assessed by the HCRV program and may not be representative of all incarcerated veterans, although the HCRV program serves a broad sample of incarcerated veterans and there is no inherent bias to contact those with homeless histories. Replication of these findings is needed with a population-based sample using validated indicators of homelessness and more comprehensive clinical measures.

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