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Homelessness and Money Mismanagement in Iraq and Afghanistan Veterans

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Abstract

Objectives—We examined the empirical link between money mismanagement and subsequent homelessness among veterans.

Methods—We used a random sample of Afghanistan/Iraq era veterans from the National Post-Deployment Adjustment Survey in 2009–2011.

Results—Veterans were randomly selected from a roster of all U.S. military service members in Operation Iraqi Freedom or Operation Enduring Freedom who were separated from active duty or in the Reserves/National Guard. Veterans (n = 1090) from 50 states and all military branches completed 2 waves of data collection 1 year apart (79% retention rate). Thirty percent reported

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Contributors

E.|B. Elbogen secured funding for this project, developed the analytical strategy, undertook data analyses and interpretation, and wrote the article. C.|P. Sullivan was involved in the development of the analytical strategy and commented on the article at several stages in its preparation. J. Wolfe contributed to the interpretation of the results and commented on the article at several stages in its preparation. H.|R. Wagner provided statistical consultation throughout preparation of the article, undertook data analyses, and commented on the article at several stages in its preparation. J.|C. Beckham helped secure funding for this project, was involved in design of the study, provided assistance and advice about undertaking the study, and commented on the article.

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Human Participant Protection

This study was approved by institutional review boards at the University of North Carolina at Chapel Hill and the Durham Veterans Affairs Medical Center.

money mismanagement (e.g., bouncing or forging a check, going over one's credit limit, falling victim to a money scam in the past year). Multivariate analysis revealed money mismanagement (odds ratio [OR] = 4.09, 95% CI = 1.87, 8.94) was associated with homelessness in the next year, as were arrest history (OR = 2.65, 95% CI = 1.33, 5.29), mental health diagnosis (OR = 2.59, 95% CI = 1.26, 5.33), and income (OR = 0.30, 95% CI = 0.13, 0.71).

Conclusions—Money mismanagement, reported by a substantial number of veterans, was related to a higher rate of subsequent homelessness. The findings have implications for policymakers and clinicians, suggesting that financial education programs offered by the US Departments of Defense and Veterans Affairs may be targeted to effectively address veteran homelessness.

Explaining the disproportionate number of veterans in the homeless population is a challenge that has stymied policymakers. ¹⁻⁶ Estimates have varied but have indicated that veterans constitute as much as 32% of the homeless population in the United States, ^{3,5,7,8} though recent data have indicated that veterans make up approximately 16% of homeless adults at a given point in time. ⁹ Because they make up about 10% of the general US population, veterans appear to be overrepresented in the homeless population. ¹⁰ This revelation is not new, and for the past 20 years researchers have tried to pinpoint reasons for the high levels of veteran homelessness. ⁴ Posttraumatic stress disorder (PTSD), ^{11–13} depression, ^{3,5} bipolar disorder, ^{8,14} alcohol and drug abuse, ^{3,5,15,16} younger age, ⁹ and contact with the criminal justice system ^{5,8,17,18} have each been identified as risk factors for homelessness among veterans.

With all these possible explanations, an occasionally overlooked potential contributor to veterans' homelessness is achieving financial stability after military service. In this regard, veterans face an array of barriers, including lack of stable employment, inability to budget and make ends meet, limited financial knowledge, poor judgment in making financial decisions, and lack of material security. These financial factors can exist independent of mental health diagnoses and other risk factors previously mentioned, outlining the need to investigate the effects of these financial factors on homelessness.

Recent reports have shown that military experience can uniquely affect financial well-being. 5,19–21 Psychological and physical war injuries can reduce a veteran's employability. 19,20 Many military personnel require retraining to learn skills appropriate for civilian work. 20 Service members who live on base and have their basic needs met may not have the opportunity to learn the skills necessary to being financially independent and manage money, skills that their counterparts in the civilian sector had to master at an earlier age. 21 Active-duty service members have been found to be 3 times more likely than civilians to take out payday loans. 5,21 Predatory lenders are known to target military members and veterans. More payday lending businesses are located in zip codes near military bases than anywhere else in the country. 5 All of this is added to the adverse effects that multiple deployments can have on financial security, disrupting family stability or leading to job loss. 5,19

Therefore, to successfully readjust after military service, veterans need to attain a sufficient level of financial literacy, defined as possessing a working knowledge of financial concepts and tools to make effective decisions regarding management of money. The National Financial Capability Study, however, recently conducted in collaboration with the US Department of the Treasury and the President's Commission on Financial Literacy, pinpointed that money mismanagement was a significant problem for military service members. Despite service members' saving money at the same rate as civilians, they remain less likely than civilians to meet their basic needs and more likely to have significant credit card debt. Enlisted personnel and junior noncommissioned officers also exhibited greater

problems in planning for financial emergencies. Credit card mismanagement was also noted to be a problem for military families in particular, leading to heavy debt, fees, and interest accumulation.

Thousands of veterans are returning from combat in Iraq and Afghanistan. To our knowledge, few empirical efforts have been directed at examining whether veteran homelessness may be related to how veterans manage their finances. We examined longitudinal data from a national survey of Iraq and Afghanistan era veterans to determine to what extent, if any, money mismanagement is associated with subsequent homelessness.

METHODS

The study sample was taken from the National Post-Deployment Adjustment Survey, which was originally drawn by the US Department of Veterans Affairs (VA) Environmental Epidemiological Service in May 2009. It consists of a random selection of more than 1 million US military service members who served after September 11, 2001 (the Iraq/ Afghanistan era), and who were, at the time of the survey, either separated from active duty or in the Reserves or National Guard. The sample was stratified by gender, and female veterans were oversampled to ensure adequate representation. Veterans were surveyed using Dillman survey methodology, ²³ which involves multiple and varied contacts to maximize response rate. Both the baseline and follow-up waves of data collection involved parallel procedures, and participants were reimbursed after completing each wave.

At baseline, participants were first sent an introductory letter about the upcoming survey. Four days later, they were sent an invitation by mail, which contained commemorative postage stamps as an incentive and instructions on how to complete a 35-minute confidential Web-based survey. Sixteen days after the invitations were mailed, potential participants were sent postcards thanking them for completing the survey or reminding them to do so. Two weeks after the postcard mailing, those who had not taken the survey received a paper version with a postage-paid return envelope. Two months after the print survey had been mailed, a final letter was sent encouraging participation and explaining that the survey would close the following week.

The baseline wave of the survey was conducted from July 2009 to April 2010, yielding a 47% response rate and 56% cooperation rate, which is comparable to, or greater than, that achieved in other national surveys of veterans. ^{24–26} Details regarding the baseline wave of the National Post-Deployment Adjustment Survey can be found elsewhere, ²⁷ with data analysis showing little difference on available demographic, military, and clinical variables between those who took the survey after the first invitation versus after subsequent reminders, responders versus nonresponders, and paper versus Web survey completers.

In the follow-up survey, participants who completed the baseline survey received the same letters, incentives, reminders, and reimbursements, with the exception of the introductory letter, which was deemed unnecessary. The follow-up wave was conducted from July 2010 to April 2011. In total, 1090 veterans completed the same survey at 1-year follow-up, yielding a 79% retention rate.

In the final longitudinal sample, the distribution of responders (55.21% Army, 19.92% Air Force, 14.88% Navy, 9.64% Marines, and 0.35% Coast Guard; 48% National Guard or Reserves; 27% non-White) approximated the actual composition of the US armed forces. The majority of the sample (82%) had been deployed specifically to Iraq or Afghanistan. Time since last deployment ranged from 1 to 8 years with a median of 4 years. The remainder of the sample was composed of veterans who served in Operation Iraqi Freedom or Operation Enduring Freedom but were not stationed in the theater of combat. The final

sample was geographically representative of the military, corresponded to known military demographics, and represented the 50 states; Washington, DC; and 4 territories in approximately the same proportion as the actual military.

Invitations were mailed, leaving open the possibility that at least some homeless recipients were not reached. However, fewer than 20% of letters were returned, suggesting that the vast majority of mailings were received. We should note that research methods optimized the chances that homeless veterans would complete the survey given use of both print and Web-based surveys. Internet is often the main form of communication used by people who are homeless, given that it can be accessed for free at facilities such as public libraries. Although veterans experiencing severe and chronic homelessness may have dropped out from the study, sending 5 mailings over many months meant veterans with some living instability had a better chance of receiving information about the survey.

Given the nature of longitudinal research, living stability was likely to have at least some impact on retention, so we examined statistically to what extent recent homelessness at baseline was associated with study drop-out. Analyses revealed that recent homelessness at baseline was very weakly related to attrition, accounting for only 1.1% of the variance in whether a participant completed both waves of the survey. As such, the analyses failed to detect substantial bias with respect to surveying homeless veterans. In the end, the percentage of veterans who were retained and who endorsed homelessness during the 1-year study (5%) was consistent with national figures. ¹⁰

Measures

Information was gathered regarding participant age, gender, race/ethnicity, education, marital status, living situation, employment, annual income, arrest history, military branch, and deployments. Combat exposure was measured with a scale from the Neurocognition Deployment Health Study. ²⁹ Drug Abuse Screening Test³⁰ was used to measure drug misuse (cutoff score|>|2), and the Alcohol Use Disorder Identification Test³¹ was used to measure alcohol misuse (cutoff score|>|7). PTSD was measured with the Davidson Trauma Scale³²; a cutoff score of 48 on this measure has shown 0.82 sensitivity, 0.94 specificity, and 0.87 diagnostic efficiency for probable PTSD. ³³ The Patient Health Questionnaire was administered to assess depressive symptoms. ³⁴ Scores higher than 10 have sensitivity and specificity of 0.88 for probable major depressive disorder. ³⁵ The Mood Disorders Questionnaire ³⁶ was used to assess lifetime bipolar disorder. Scores equal to or greater than 7 have yielded good sensitivity (0.73) and very good specificity (0.90) in detecting a mood disorder.

With respect to financial decision-making, Marson et al.³⁷ provided a conceptual framework for financial capacity by making a distinction between financial knowledge and financial judgment, the latter involving a person applying financial knowledge and thereby managing his or her money to meet basic needs (e.g., housing), either effectively or ineffectively.²² This concept of money management is the focus of this article and was assessed by asking veterans whether in the past year they had written bad checks, forged checks, fell victim to a money scam, had gone over their credit limit, or been referred to a collection agency. Answering "yes" to any of these items was operationalized as money mismanagement, consonant with scholarship on financial literacy in civilian populations^{22,38} and with research on money mismanagement in veteran populations.³⁹ Regarding homelessness, participants were prompted to describe their living arrangements in the past year and explicitly asked, "In the past year, have you been homeless for at least one night?"

Analysis

We used SAS version 9.2 (SAS Institute, Cary, NC) for all statistical analyses. Women constituted 33% of the sample but represent an estimated 15.6% of the military, based on September 2009 Defense Manpower Data Center figures. Pata for this study were weighted to reflect the latter proportion to be representative of the military, which adjusted the total sample size to a weight-adjusted follow-up of n = 866. We used univariate analyses to describe the sample and examined bivariate associations using χ^2 statistics between independent variables at initial assessment and homelessness at follow-up. We conducted multiple logistic regression modeling. In the first model, significant (P < 0.01) baseline factors identified in the latter bivariate analyses were tested as putative predictors of homelessness at follow-up. A second model including these same factors was estimated after the addition of baseline homelessness as a covariate.

We took several steps to assess analysis validity. Using bootstrap methodologies (1000 replications), we derived bias estimates on the basis of the ratios between model-based coefficients and corresponding mean estimates derived from bootstrap procedures. To address concerns of overfitting related to the relative low frequency of our dependent measure over the 1-year study interval, we compared a second set of estimates derived using Poisson regression procedures with results derived from the initial logistic regression models. Finally, we assessed the robustness of the findings to modification by reassessing the final model after post hoc inclusion of a number of candidate variables including years since last deployment and changes in money mismanagement over the study period.

RESULTS

The median age of the sample was 34 years, 27.27% of the sample was non-White, 82.34% had higher than a high school education, and 75.14% were employed. The median income was \$50|000. Almost half of the sample, 48.43%, was in the Reserves or National Guard. Of the veterans, 230 (26.56%) indicated that they had been deployed multiple times, and 219 (25.31%) had been deployed for more than 1 year. Officers made up 18.5% of the sample. Participant history was examined, and we found that 153 veterans (17.66%) reported a history of criminal arrest (Table 1). Clinically, Alcohol Use Disorder Identification Test scores revealed that 211 (24.34%) veterans endorsed alcohol misuse. Data collected from the Drug Abuse Screening Test showed that 3.7% reported drug misuse. Of the veterans, 155 (17.89%) met criteria for probable PTSD; 21.9% also met criteria for depression, and 7.4% met criteria for bipolar disorder. In total, 28% of the sample met criteria for a mental health diagnosis of depression, bipolar disorder, or PTSD.

In terms of money mismanagement, 16.9% were contacted by a collection agency, 13.6% wrote a bad check, 20.3% went over their credit limit, 3.4% were victims of a financial scam, and 0.5% forged a check. Of the entire sample, 30.2% mismanaged their money in 1 of these ways. Of the sample, 5% reported being homeless between the 2 waves of the survey. Bivariate associations with homelessness are shown in Table 2. Money mismanagement was the strongest bivariate factor associated with homelessness in the next year (χ^2 |=|39.69; P|<|.001).

Table 3 displays the logistic regression analysis of homelessness at follow-up.[ID]TBL3[/ ID] In model 1, 4 factors were significant: history of previous arrests (odds ratio [OR]|=| 2.65; 95% confidence interval [CI]|=|1.33, 5.29; P|=|.001), mental health diagnosis (OR|=| 2.59; 95% CI|=|1.26, 5.33; P|=|.01), income level (OR|=|0.30; 95% CI|=|0.13, 0.71; P|=|.001), and money mismanagement (OR|=|4.09; 95% CI|=|1.87, 8.94; P|=|.001). Model 2, controlling for baseline homelessness, revealed the following factors were significantly

associated with subsequent homelessness: income (OR|=|0.32; 95% CI|=|0.13, 0.76; P|=|0.01|) and money mismanagement (OR|=|4.29; 95% CI|=|1.94; 9.49, P|=|0.001|).

Both models were validated with bootstrap methodologies and showed little evidence of shrinkage in the original estimates, indicating bias estimates for most coefficients of less than 2%. Poisson regressions yielded models with the same variables showing statistically significant associations with subsequent homelessness.

We reran multivariate models to control for years since last deployment, which failed to be significantly associated with homelessness. We also reran models to control for changes in money mismanagement, which did yield significant findings. Specifically, worse money mismanagement between baseline and 1-year follow-up significantly increased odds of homelessness (OR|=|1.59; 95% CI|=|1.16, 2.20; P|=|.001). This finding was in addition to those for baseline money mismanagement (OR|=|7.74; 95% CI|=|0.44, 17.39; P|<|.001) and baseline homelessness (OR|=|10.90; 95% CI|=|4.47, 26.58; P|<|.001).

Figure 1 illustrates findings from multivariate analyses by depicting percentages of homelessness at follow-up as a function of baseline money mismanagement and income. The highest rates of homelessness were found among those with low income and those who reported money mismanagement; conversely, the lowest rates were found among those with high income and no money mismanagement. The group of veterans with high income and money mismanagement experienced approximately the same level of homelessness in the next year as veterans with low income and no money mismanagement.

DISCUSSION

To our knowledge, this study is the first to examine whether money mismanagement is empirically linked to homelessness in veterans. We analyzed data using bivariate analysis, multivariate modeling controlling for initial homelessness and covariates, and logistic and Poisson regression techniques and comparing rates of homelessness at different income levels. In each case, we arrived at a similar conclusion: money mismanagement made a significant and unique contribution to predicting higher odds of subsequent homelessness in veteran populations, above and beyond other variables.

Consistent with recent reports, 5,19–21 money mismanagement was reported by a substantial number of veterans and urgently needs to be addressed. Future research is needed to investigate in greater detail both civilian- and veteran-specific contributors to money mismanagement. With respect to the former, research on financial literacy has highlighted civilian risks of accruing severe debt by covering minimum payments on credit cards: civilians may not understand that interest rates are charged on outstanding credit card balances. 40,41 Other common vulnerabilities shown in the civilian population include impulse spending and spending money freely and regularly on tobacco products or lottery tickets, without awareness of how this could affect their monthly budget. 42–44 With respect to veteran-specific issues, veterans may be unaware of vocational programs available through the US Department of Veterans Affairs (VA) or that many companies and stores provide military and veterans savings discounts. They might mistakenly believe they will lose disability benefits if they work. 45 Veterans receiving disability may be vulnerable to financial exploitation by predatory lenders or even family members. 46

On the basis of current data, military personnel could likely benefit from additional financial literacy training before separation. Early in their service, Army soldiers are required to complete a 1-day course on personal financial management training. Additional financial services and classes are offered on base through financial readiness programs but are not

required. During discharge processing, soldiers are exposed to a short segment on budgeting during the 1-week Transition Assistance Program. On the basis of the current data, it may be useful to evaluate the effectiveness of the personal financial management training and Transition Assistance Program, which, at the very least, could be used to develop additional opportunities for military personnel to receive the training to reduce chances of money mismanagement after separation.

Our finding that money mismanagement increases the odds of homelessness also has implications for services provided to homeless veterans. Within the VA, an array of homelessness programs—US Department of Housing and Urban Development—VA Supportive Housing, Supportive Services for Veteran Families, and Health Care for Homeless Veterans—provide case management and community support for veterans that can include assistance with money management but do not typically require formal financial education. The VA Fiduciary Program assigns third parties to manage disability funds for veterans determined to be unable to manage their financial affairs. The Adviser-Teller-Money Manager program targets veterans with substance use problems, psychiatric problems, or both and does provide assistance with money management, offering weekly meetings with money managers who monitor access to funds, train veterans to budget, and link spending to treatment goals.⁴⁷

After separation, VA homelessness programs that assist veterans to find stable residence could add formal money management training to teach veterans the financial skills necessary to maintain a residence over time. Contact with veterans during disability screens may also present another opportunity to assess current money-management skills or plan for needed training. Financial literacy programs have been shown to improve savings, reduce debt, and lower delinquency in mortgage payments. ^{38,48,49} Applied to homeless veterans, financial education even on simple issues such as how to create a budget, avoid financial scams, open a bank account, balance a checkbook, obtain a credit report, apply for and manage loans, use a calendar to pay bills on time, and daily strategies to save money could readily and inexpensively be added into pre- and postseparation work with veterans.

Several study limitations should be considered. The amount of variance that the regression accounts for indicates that alternative explanations are possible. Because data were from a survey, participants may have underreported money mismanagement, mental health or substance abuse problems, or homelessness. Nonresponse may have been higher among homeless veterans because of survey methods, as previously indicated. Verification of this national sample was not feasible; still, rates of mental health and substance abuse issues appear comparable with extant research. ^{25,50,51} Also, a substantial number of participants were willing to report money mismanagement.

Although the current sample consisted only of veterans, the link between money management and homelessness may also apply to civilians. The veteran population may be at increased risk, yet veterans may also have strengths to draw on from their military service, including esprit de corps and VA resources that are unavailable to civilians. Future research should examine whether money mismanagement contributes to homelessness in the broader general population, and whether financial education efforts are effective when accounting for other problems such as income, substance use, and mental health diagnosis.

We found that money mismanagement, reported by a substantial number of veterans, was strongly associated with higher odds of homelessness at follow-up. The US Department of Defense and the VA already have optional financial education programs available. Figure 1 illustrates that such programs may provide viable and low-cost options to reduce

homelessness in veterans. Indeed, Secretary of Veterans Affairs Eric Shinseki has publically recognized that

too many veterans carrying the burdens of PTSD or TBI [traumatic brain injury], compounded by limited financial literacy and atypical behaviors, begin a downward spiral towards isolation, depression, substance abuse, joblessness, failed relationships, homelessness—and sometimes suicide. It usually doesn't happen overnight—it's a long, slow slide. But it begins somewhere, and it would be shortsighted for any of us to presume that these conditions only ensue after the uniform comes off.⁵²

Heightened awareness of the importance of financial well-being before and after military service suggests the need for increased opportunities for military personnel to learn the basic skills required to succeed economically when returning to civilian life. Providing, and perhaps at times even requiring, military personnel to take advantage of financial education will allow our country to provide more complete support to its veterans as they transition out of deployment.

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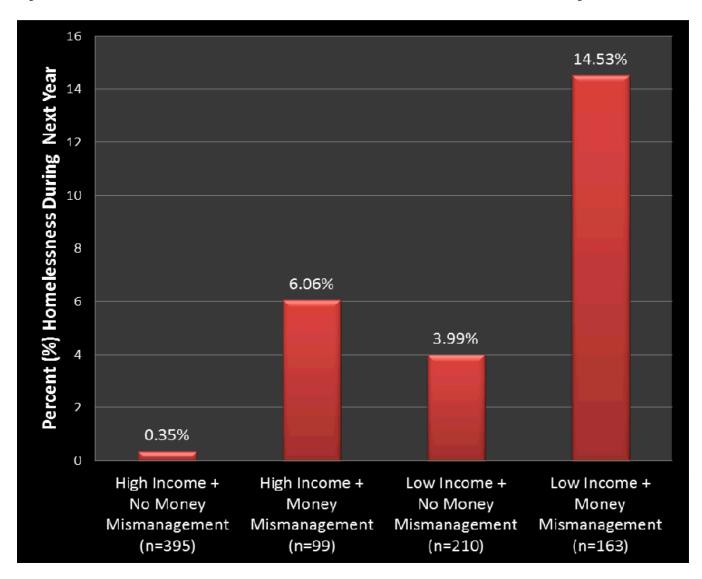


FIGURE 1.

Percentage of homelessness in the next year as a function of baseline money mismanagement and annual income: National Post-Deployment Adjustment Survey, United States, 2009–2011.

Note. This model was statistically significant (χ^2_3 |=|54.046; P|<|.001). Weighted numbers are rounded and as a result do not add up to the reported sample size of n|=|866. Annual income was dichotomized as high (median |\$50|000) vs low (median <|\$50|000). Money mismanagement was operationalized as a participant reporting in the previous year that he or she had written bad checks or bounced checks, gone over his or her credit limit, been turned over to a collection agency, forged a check, or been a victim of a money scam. In total, 30.2% of the sample endorsed at least 1 of these money mismanagement items.

TABLE 1

Characteristics of Veterans Surveyed: National Post-Deployment Adjustment Survey Longitudinal Sample, United States, 2009–2011

Data Type	Weighted Sample Size, No.	Weighted Median or %	
Demographic and background data			
-Age, y		34.4	
-Annual income, \$		50,000	
-Education beyond high school	713	82.3	
-Female	134	15.5	
-Race non-White	236	27.2	
-Employed	651	75.1	
-History of previous arrests	153	17.6	
Military data			
-Officer	160	18.5	
-> 1 y deployment	219	25.3	
-Multiple deployments	230	26.5	
-High combat exposure	425	49.1	
-Reserves or National Guard	420	48.4	
Clinical data			
-Alcohol misuse	211	24.3	
-Drug misuse	32	3.7	
-Any substance use diagnosis	221	25.5	
-Probable PTSD	155	17.9	
-Depression	190	21.9	
-Bipolar disorder	64	7.4	
-Any mental health diagnosis	243	28.0	
Financial data			
-Contacted by collection agency	145	16.9	
-Wrote a bad check	116	13.6	
-Victim of a financial scam	29	3.4	
-Forged a check	4	0.5	
-Went over credit limit	173	20.3	
-Any money mismanagement	262	30.2	
Follow-up data			
-Homeless during year of study	39	4.5	

 $\textit{Note}.\ PTSD|=|posttraumatic\ stress\ disorder.\ The\ weighted\ sample\ size\ was\ n|=|866.$

TABLE 2

Bivariate Associations between Baseline Factors and Homelessness in the Next Year: National Post-Deployment Adjustment Survey Longitudinal Sample, United States, 2009–2011

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Factor at Baseline	No.	Homelessness at follow-up, n	%	%	Ь
Age					
median	439	12	2.84	5.68	.001
< median	428	27	6.21		
Education > high school					
No	153	6	6.13	1.07	NS
Yes	713	30	4.21		
History of previous arrests					
No	713	21	2.98	22.83	< .001
Yes	153	18	11.85		
Combat > median					
No	441	10	2.32	10.20	.001
Yes	425	29	6.85		
Alcohol misuse					
No	959	22	3.34	9.05	.001
Yes	211	18	8.30		
Drug misuse					
No	834	35	4.19	6.38	.01
Yes	32	4	13.67		
Probable PTSD					
No	711	21	3.00	21.74	< .001
Yes	155	18	11.61		
Probable depression					
No	929	17	2.48	30.45	< .001
Yes	190	23	11.91		
Bipolar disorder					
No	802	30	3.69	18.01	< .001
Yes	49	10	15.14		

H - 47 7 - 4	ž	Homelessness at	è	2	£
Factor at Baseline	No.	ronow-up, n	%	×	F
Annual income \$50 000					
No	373	32	8.59	24.63	< .001
Yes	494	7	1.49		
Money mismanagement					
No	605	10	1.61	39.69	< .001
Yes	262	30	11.32		

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 $\textit{Note}. \ NS | = | nonsignificant; \ PTSD | = | posttraumatic \ stress \ disorder. \ The \ weighted \ sample \ size \ was \ n | = | 866.$

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TABLE 3

Multivariate Models of Veteran Homelessness in the Next Year: National Post-Deployment Adjustment Survey Longitudinal Sample, United States, 2009–2011

	Model 1: Factors Only ^a			
Factor at Baseline	OR (95% CI)	P	OR (95% CI)	P
History of previous arrests	2.65 (1.33, 5.29)	.001		NS
Mental health diagnosis	2.59 (1.26, 5.33)	.01		NS
Annual income \$50 000	0.30 (0.13, 0.71)	.001	0.32 (0.13, 0.76)	.001
Money mismanagement	4.09 (1.87, 8.94)	.001	4.29 (1.94, 9.49)	.001
Homelessness at baseline (added in model 2)			11.24 (4.66, 27.12)	< .001

Note. CI|=|confidence interval; OR|=|odds ratio. Age, education, combat exposure, and substance misuse were nonsignificant in these analyses. Bootstrapping of model 1 showed very good model fit, with a mean concordance|=|0.91; <math>SD|=|0.001; 95% CI|=|0.86, 0.95. Likewise, bootstrapping of model 2 showed very good model fit, with a mean concordance|=|0.85; SD|=|0.001; 95% CI|=|0.78, 0.92. The weighted sample size was n|=|866.

^aPseudo- r^2 |=|.23; χ^2_4 |=|64.63; P|<|.001.

 $^{^{}b}$ Pseudo- r^{2} |=|.26; χ^{2} 3|=|75.44; P|<|.001.