Suicidal Behavior in a National Sample of Older Homeless Veterans

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Objectives. We examined self-reported suicidal behavior of older homeless veterans to establish frequencies and predictors of recent suicidal behaviors, and their impact on transitional housing interventions.

Methods. We analyzed the records of a national sample of 10 111 veterans who participated in a transition housing program over a 6-year period, ending in 2008.

Results. Approximately 12% of homeless veterans reported suicidal ideation before program admission; 3% reported a suicide attempt in the 30 days before program admission. Older homeless veterans exhibiting suicidal behavior had histories of high rates of psychiatric disorders and substance abuse. Regression analyses showed that self-report of depression was the primary correlate of suicidal behavior. Suicidal behavior before program entry did not predict intervention outcomes, such as program completion, housing outcome, and employment.

Conclusions. Suicidal behavior was prevalent in older homeless veterans and was associated with a history of psychiatric disorder and substance abuse. Self-reported depression was associated with these behaviors at the time of housing intervention. Despite the association with poor mental health history, suicidal behavior in older homeless veterans did not impact outcomes of transitional housing interventions. (*Am J Public Health.* 2012;102:S147–S153. doi:10.2105/AJPH.2011.300436)

Across all age groups, suicide is the 11th leading cause of death and seventh leading cause of death among men.[1] Historically, the rate of suicide has been highest in the elderly, and the rate among older men is approximately 7 times that among women. Suicide attempts among the elderly are more likely to be lethal than among younger age groups. This finding has been attributed to declines in physical condition, making survival less likely, social isolation reducing the probability of successful rescue, and suicide attempts that are more carefully planned.[2] Several factors constitute notable risk factors for suicide among the elderly.[3] These include the presence of physical health factors, alcohol abuse, stressful life events, social isolation, and Axis I psychiatric disorders (especially depressive disorders). In interviews with surviving relatives of older suicide victims, Duberstein et al.[4] found that being unmarried, unemployed, financially disabled, and having a psychiatric disorder were the most common factors. Suicidal ideation is typically, but not always, a precursor to suicide attempts or self-harm and provides an estimate of the population that is usually considered to be at immediate risk. In analyses of data from the Canadian Community Health Survey, Corna et al.[5] reported relatively low general population rates (slightly more than 2%) of suicidal ideation occurred in the past year. Estimates of lifetime suicide ideation and attempts among a nationally representative sample of US adults suggested a similar presence. Results from analyses of data obtained from the 2008 National Survey of Drug Use and Health reported that 3.7% of adults thought about suicide in the past 12 months, and 0.5% reported a suicide attempt.[6]

Because US veterans are predominantly older individuals with substantial medical morbidities, high levels of substance abuse and mental illness, and increased knowledge of and access to firearms,[7–9] it is not surprising that some research reported that male veterans were at approximately twice the risk for suicide than male nonveterans.[10] However, the associations between history of military service and risk for suicide are not clear.[11] For example, subsequent studies of male veterans in the general population failed to identify increased risk among middle-aged and elderly males.[12] Among veterans receiving care from the Veterans Health Administration (VHA), suicide risk for men and women combined across all age groups was estimated to be 66% higher than that observed in the general population.[13] For male veterans, the risk in age groups 50 to 70 years was 56% to 108% greater than that in the general male population. The frequency of suicidal ideation also appeared to be higher in veterans receiving VHA health services. In a study of older veterans receiving services in Veterans Affairs (VA) primary care clinics, Ayalon et al.[14] found that 5% of veterans reported suicidal ideation in the 2 weeks before assessment. Notably, this same study found that poorer cognitive functioning contributed to the occurrence of suicidal ideation.

From the standpoint of health risk, a particularly vulnerable group of veterans are those that are homeless. The most recent estimates[15] indicate that approximately one seventh of the adult homeless population consists of veterans. Current point-in-time population estimates suggest that 75 000 or more veterans are homeless on any given night, and about twice as many experience homelessness at some point during the course of a year. Veteran status is associated with increased risk for homelessness; a larger percentage of veterans are homeless than in either the general population or the population living in poverty. Studies of homeless veterans revealed exceptionally high rates of significant psychiatric disorders, alcohol and drug abuse, and chronic medical conditions.[16] These factors are potentiated by the impact of aging in the veteran population. Current estimates show that more than 20% of homeless veterans are aged 55 years or older. Thus, cognitive decline because of aging and possible early onset of degenerative dementias adds to the cumulative

impact of health risks in older homeless veterans. Although it is anticipated that the increasing health vulnerability produced by these risk factors increases morbidity and reduces life expectancies because of all-cause mortality, few studies have approached these issues in a programmatic manner. Much of what we know about homeless suicidal behavior is based on data from the Access to Community Care and Effective Services and Supports (ACCESS) program.[17] The ACCESS program provided clinical mental health services to 7224 individuals in 15 cities across the country. All participants were homeless adults with evidence of serious mental illness who self-reported a suicide attempt in the 30 days before admission to the program or a 2-week period of persistent serious thoughts of suicide in the same 30-day period. In the aged 55 years and older ACCESS group, 3.5% of participants reported a suicide attempt, and 19.0% reported persistent suicidal ideation in this 30-day period.[18] Roughly equivalent estimates were obtained in studies of veterans. In a sample of 34 245 veterans (mean age = 46.6 years) who sought treatment of substance abuse or psychiatric disorders, 3.4% of veterans reported an attempted suicide in the month before seeking services.[19] A similar study of 600 veterans (mean age = 56.3 years) who sought treatment of substance abuse at a Midwestern VA revealed that 40.0% reported current suicidal ideation as determined by an established cutoff score on a suicidal ideation self-report scale.[20]

The limited research to date suggests that older homeless veterans may be at substantively greater risk for suicidal behavior than are individuals in the general population. We attempted to expand the research literature on suicidal behavior in this target group by reporting analyses of self-reported suicidal behavior (ideation and attempts) in a large sample of older homeless veterans admitted into a nationwide VA housing intervention program. The data set allowed us to provide estimates of the frequencies of recent suicidal behaviors, predictors of suicidal behaviors, and the impact of suicidal behaviors on interventional outcomes.

METHODS

Data for this study were provided by the VA Northeast Program Evaluation Center and consisted of de-identified records of veterans aged 55 years and older who were admitted into, and discharged from, the VA Grant and Per Diem (GPD) program during federal fiscal years 2003 to 2009. The GPD program provides grants to community-based providers to acquire and renovate facilities to create furnished housing for veterans. The program also funds per diem to defray operational expenses and the cost of supportive services, which may include vocational, substance abuse, and educational interventions. The GPD program provides housing support for up to 2 years and is designed as a transitional program leading to permanent housing. Community-based providers differ in terms of the requirements for admission and the mix of services provided. Homeless veterans typically enter the GPD program from the street or a shelter, but may move into GPD programs directly from a hospital, halfway house, or other short-term housing situations. To examine predictors and sequelae of suicidal behaviors, we limited our analysis to records of completed first admissions; that is, the first admission occurring on or after the first day of fiscal year 2003 (October 1, 2002) with a discharge on or before September 30, 2008. The dataset was composed of the records of completed first admissions for 10 111 unique veterans who had complete data on suicidal behavior variables.

The analyses were based on data from 2 sources of information. The first source was Form X, which is a comprehensive structured interview administered by program staff to veterans at the time of admission to specialized VA homeless service programs. Form X captures sociodemographic, psychosocial, health, housing, and employment information (e.g., recent work history). Form X contains 2 items that require "yes/no" responses for the experience of "serious thoughts of suicide" and for "suicide attempt" in the previous 30 days. The second source was Form D, an administrative form that captures basic information at the point of discharge from the GPD program (e.g., reason for discharge, work status). In this dataset, Form X was administered no more than 14 days before admission and no more than 5 days after admission.

Preliminary analyses provided descriptive statistics for the sample as a whole, including the frequencies of serious suicidal ideation and suicide attempt. Independent groups were then created on the basis of responses to the Form X suicidal ideation and suicide attempt questions. Participants who responded positively to either of the suicidal behavior questions comprised the suicidal behavior (SUI-BEH) group. The remaining participants constituted the negative suicide behavior (SUI-NEG) group. Descriptive statistics and group comparisons were then conducted on variables in the following domains: demographic characteristics, medical and psychiatric history, work and financial support, and treatment outcomes. Additional variables included suspected diagnoses in several categories (e.g., mood disorder, combat posttraumatic stress syndrome [PTSD]). These diagnoses were not based on formal diagnostic interview or medical records, but were the clinical judgment impressions of staff based on Form X responses and behavior during the Form X interview. Chi-square statistics were calculated to determine significant differences between groups on categorical variables. Independent-sample *t* tests were used to examine differences on continuous variables. When the Levene test for homogeneity of variance was significant, the examination of mean differences was adjusted accordingly.

Because of the large sample size, we anticipated that many analyses would produce results that would be considered significant by examination of *P* values. To aid in meaningful interpretation of results, we calculated effect sizes for all *t* test and χ^2 analyses. The Cohen[21] *d* was computed to provide an effect size for the *t* test. Following the convention offered by Cohen, we interpreted absolute values for *d* of 0.2, 0.5, and 0.8, indicating small, medium, and large effect sizes, respectively. Absolute values for *d* that were less than 0.2 were designated as meaningless, regardless of levels of statistical significance for the *t* test. We calculated Cramer's φ to provide an effect size estimate for χ^2 analyses.[22] φ is a measure of association between 2 binary variables and is similar to the Pearson correlation coefficient in its interpretation.[23] Again following a convention offered by Cohen,[21] we interpreted absolute values for φ of 0.10, 0.30, and 0.50 as indicating small, medium, and large effect sizes, respectively. Absolute values for φ that were less than 0.10 were designated as meaningless, regardless of levels of statistical significance for the χ^2 statistic. Because we focused interpretation of statistical results on

effect sizes, we did not correct *P* values for the number of analyses that were conducted (e.g., by employing Bonferroni adjustments).

Logistic regression analysis was used to identify predictors of suicidal ideation and suicide attempt. In these analyses, predictor variables (e.g., demographic variables, psychiatric history variables) were all allowed to enter the analysis at step 1, using a stepwise forward method of entry with a significant Wald χ^2 test as a criterion for determining entry (at $P < .05$) and removal (at $P > .1$). A second set of logistic regression analyses, using the same procedure, was directed at determining predictors of intervention outcomes (program completions, length of stay, housing on discharge, employment on discharge). In these analyses, suicidal ideation and suicide attempt were treated as predictor variables. In all logistic regression analyses, we calculated the McKelvy–Zavoina index per the recommendation of DeMaris.[24] This index also serves as a measure of effect size, with an explanation of 1% of the variance in the dependent variable considered to be the lower boundary of a small meaningful effect.[21] All analyses were carried out using SPSS (version 19.0; SPSS Inc., Chicago, Illinois).

RESULTS

The sample as a whole had a mean (SD) age of 59.4 (4.8) years and was uniformly male (98.1%) and unmarried (95.1%). A slight majority of participants were White (54.1%), and a minority (34.1%) had been exposed to combat fire during their military service. The majority (81.0%) were referred by outreach staff or community agencies, and almost all (95.7%) completed their Form X interviews at a community site (e.g., shelter, housing provider) rather than at a VA facility. A majority of participants reported positive histories of alcohol or drug abuse (77.7%) and psychiatric disorders (57.9%). Almost half of the sample (48.6%) had histories positive both for alcohol or drug abuse and for psychiatric disorders; 13.1% had no history of either. Serious thoughts of suicide in the 30 days before program admission were reported by 1267 (12.1%) participants. A suicide attempt in the 30 days before program admission was reported by 275 (2.7%) participants. A total of 1267 (12.5%) reported either suicidal ideation or attempt and comprised the SUI-BEH group. The remaining 8844 participants comprised the SUI-NEG group. Group membership was not related to whether Form X was completed before or after admission to the housing program ($\chi^2 = 3.48$; $P > .05$). Table 1 provides descriptive statistics and the results of *t*-tests and χ^2 analyses of comparisons of the SUI-BEH and SUI-NEG groups.

Demographic and Background Characteristics

Examination of demographic characteristics revealed several significant differences between the SUI-BEH and SUI-NEG groups. SUI-BEH participants were slightly older, more frequently White, more likely to be married, and more likely to report being under fire in combat during their military service. The SUI-BEH participants were less likely to have worked in the 30 days before admission, but no less likely to have had full-time employment in the past 3 years. VA pension support was significantly more common in the SUI-BEH group, but there were no differences between the 2 groups on non-VA support. Notably, significant differences between groups on demographic and background variables were all characterized by effect sizes that failed to reach a level of meaningful interpretation.

Health, Substance Use, and Mental Health Variables

Numerous comparisons between veterans in the SUI-BEH and SUI-NEG groups in measures of health, alcohol and substance use, and mental health were conducted, and all produced significant differences. An effect of medium size was obtained for serious depression in the 30 days before admission, in which the SUI-BEH group reported twice the rate of the SUI-NEG group. Small effect size differences showing higher frequencies were found for current drug abuse, current psychiatric problems, history of hospitalization for psychiatric disorder, and use of psychiatric medications in the 30 days before admission. The SUI-BEH group had greater frequencies than the SUI-NEG group for the reported presence of a serious medical problem, current and past alcohol abuse, previous hospitalization for alcohol abuse, past drug abuse, previous hospitalization for drug abuse, and use of VA health services in the previous 6 months. However, these differences did not reach the level of a meaningful effect.

Diagnostic Impressions and Treatment Outcomes

High frequencies of diagnoses of alcohol and drug abuse, schizophrenia and other psychotic disorders, mood disorders, and combat PTSD were suspected by homeless program staff in both the SUI-BEH and SUI-NEG veterans. Suspected diagnoses were significantly more common in the SUI-BEH group, but only achieved status of a small effect for mood disorder.

A small majority of both SUI-BEH and SUI-NEG veterans finished homeless intervention programs, with program stays that averaged approximately 5 months. There were no differences between the groups in program completion or in length of program stay. Approximately one half of all veterans had a permanent residence on discharge; there was no difference between groups in this outcome. There was no difference between the SUI-BEH and SUI-NEG groups in frequency of employment on discharge—less than one quarter of the veterans had a positive status on this outcome measure.

Predictors of Suicidal Behavior

On the basis of the univariate analyses results and the literature on homeless veterans, the following predictors were used in conducting the logistic regression analysis for presence of suicidal behavior: race (White vs non-White), any employment in the 30 days before admission, number of reported medical problems, days drinking in the 30 days before admission, days of drug use in the 30 days before admission, report of serious depression in the 30 days before admission, and diagnostic impression of mood disorder by program staff. Table 2 presents the results of this analysis. Six predictor variables made significant contributions to the prediction of suicidal behavior, together explaining 26.9% of the variance in risk for suicidal behavior. However, the only variable that made a meaningful contribution was the report of serious depression in the 30 days before admission to the program, which alone explained 24.9% of the variance in risk and accounted for 93% of the predictive ability of the 6-variable model.

TABLE 1—Characteristics and Outcomes in a National Sample of Homeless Veterans: United States, 2003–2008

Variable	Condition: Negative for Suicidal Behavior (n = 8844), Mean ±SD or No. (%)	Condition: Positive for Suicidal Behavior (n = 1267)	Statistical Tests: *t* or $\chi^{2\,a}$	df	*P*	*d* or φ[b]
Demographics/background						
Age, y	59.55 ±4.89	58.64 ±3.85	7.54	1904	<.001	0.19
Caucasian	4720 (53.4)	750 (59.2)	15.14	1	<.001	0.039
Married	411 (4.6)	81(6.4)	7.29	1	.007	0.027
Combat fire	2966 (33.5)	478 (37.7)	8.66	1	.003	0.029
Full-time work, past 3 y	2487 (28.1)	330 (26.0)	2.37	1	.123	–0.015
Any work, past 30 d	1536 (17.4)	156 (12.3)	20.32	1	<.001	–0.045
VA SC/NSC pension	2684 (30.3)	458 (36.1)	17.40	1	<.001	0.041
Non-VA support	3051 (34.5)	414 (32.7)	1.63	1	.201	–0.013
Health/substance use/mental health						
No. of medical problems	2.69 ±1.88	3.41 ±2.05	–11.70	1587	<.001	0.38
Days drinking in past 30 d	3.64 ±7.71	5.89 ±9.34	–8.198	1523	<.001	0.28
Days intoxicated in past 30 d	2.21 ±6.19	3.94 ±7.91	–7.483	1491	<.001	0.27
Days used drugs in past 30 d	1.90 ±5.81	3.55 ±7.79	–7.274	1473	<.001	0.27
Days used multidrugs in past 30 d	0.73 ±3.58	1.55 ±5.26	–5.351	1436	<.001	0.22
Serious medical problem	5406 (61.4)	935 (74.2)	77.83	1	<.001	0.088
Current alcohol abuse	2925 (33.1)	580 (45.8)	79.60	1	<.001	0.089
Past alcohol abuse	5579 (63.1)	916 (72.4)	41.07	1	<.001	0.064
Ever hospitalized for alcohol abuse	3893 (44.2)	665 (52.7)	32.31	1	<.001	0.057
Current drug abuse	2113 (23.9)	465 (36.8)	95.96	1	<.001	0.097
Past drug abuse	3992 (45.2)	711 (56.15)	53.18	1	<.001	0.073
Ever hospitalized for drug abuse	3064 (34.7)	549 (43.4)	36.31	1	<.001	0.060
Current psychiatric problem	4256 (48.2)	1114 (88.1)	706.61	1	<.001	0.265
Ever hospitalized for psychiatric problem	2533 (28.7)	802 (63.4)	604.14	1	<.001	0.245
Used VA services in past 6 mo	5939 (67.3)	1000 (79.1)	71.80	1	<.001	0.084
Serious depression in past 30 d	3644 (41.2)	1190 (93.9)	1232.22	1	<.001	0.349
Psychiatric medications in past 30 d	2980 (33.8)	868 (68.8)	573.61	1	<.001	0.238
Diagnostic impressions						
Alcohol abuse	4844 (54.8)	819 (64.6)	43.75	1	<.001	0.066
Drug abuse	3362 (38.0)	626 (49.4)	60.18	1	<.001	0.077
Schizophrenia	346 (3.9)	86 (6.8)	22.34	1	<.001	0.047
Other psychotic disorder	319 (3.6)	101 (8.0)	53.01	1	<.001	0.072
Mood disorder	3187 (36.0)	845 (66.7)	434.30	1	<.001	0.207
Combat PTSD	1316 (14.9)	300 (23.7)	63.85	1	<.001	0.079
Treatment outcomes						
Days in program	150.73 ±168.78	135.94 ±147.31	3.27	1778	.001	0.09
Complete program	5206 (58.9)	748 (59.0)	0.014	1	.907	0.001
Has residence at discharge	4559 (51.5)	653 (51.5)	0.000	1	.995	0.000
Employed at discharge	1803 (20.4)	256 (20.2)	0.023	1	.881	–0.001

Note. df = degree of freedom; NSC = not service-connected; PTSD = posttraumatic stress disorder; SC = service connected; VA = Veterans Affairs.
[a] *t* test for means ±SD and χ^2 for number (%).
[b] d for mean ±SD and φ for number (%).

Predictors of Treatment Outcomes

Table 3 presents the results of logistic regression analyses conducted to predict treatment outcome, using program completion, housing status, and employment status as outcome variables. On the basis of previous analyses and research, the following predictors were used: number of days drinking in the 30 days before program admission, number of

TABLE 2—Logistic Regression Analysis for Presence of Suicidal Behavior in National Sample of Homeless Veterans: United States, 2003–2008

Significant Predictors	OR (95% CI)	*P*	Increase in McKelvy-Zelvoina R^2
Serious depression in previous 30 d	16.66 (13.09, 21.22)	< .001	24.9
Mood disorder	1.53 (1.34, 1.76)	< .001	0.07
Days of drug abuse in past 30 d	0.98 (0.97, 0.98)	< .001	0.05
No. of medical problems	0.93 (0.90, 0.96)	< .001	0.03
Race	1.34 (1.17, 1.53)	< .001	0.03
Days of drinking in past 30 d	0.99 (0.98, 1.00)	.003	0.02

Note. CI = confidence interval; OR = odds ratio.
McKelvy-Zelvoina R^2 provides an estimate of the percent of variance in the outcome measure explained by the predictor variable (e.g., 0.6 = 0.6 of 1%; 10.3 = 10.3%).

days using drugs in the 30 days before program admission, history of hospitalization for alcohol abuse, history of hospitalization for drug abuse, history of hospitalization for psychiatric disorder, race (White vs non-White), number of days worked in the 30 days before program admission, VA financial support, number of reported medical problems, and presence of suicidal behavior. Suicidal behavior was not a significant predictor for any of the outcome variables. There were several significant predictors for each of the outcome variables and, in general, previous hospitalizations for any reason and number of days drinking in the month before program admission explained variance in outcomes across the 3 outcome measures. For the program completion and housing status outcome variables, the best predictor for each analysis explained less than 1% of the variance in the outcome measure, and the set of significant predictors in each analysis explained only approximately 1% of the variance. For the employment status outcome variable, the VA financial support predictor explained 5% of the variance in outcomes. Approximately 25% of veterans not receiving VA financial support were employed on discharge. In contrast, only 10.1% of veterans receiving such support were employed on discharge. No other predictor variable explained as much as 1% in incremental variance for this analysis.

TABLE 3—Logistic Regression Analyses Examining 3 Program Intervention Outcome Variables in a National Sample of Homeless Veterans: United States, 2003—2008

Significant Predictors	OR (95% CI)	*P*	Increase in McKelvy-Zelvoina R^2
Outcome: complete program			
Past hospitalization for drug abuse	1.25 (1.15, 1.36	< .001	0.6
VA financial support	1.20 (1.10, 1.31)	< .001	0.3
Past hospitalization for psychiatric disorder	1.14 (1.04, 1.24)	.004	0.1
No. of days drinking in the 30 d before program admission	0.99 (0.99, 1.00)	.007	0.1
Outcome: homeless at discharge			
No. of days drinking in the 30 d before program admission	0.99 (0.98, 0.99)	< .001	0.5
No. of days employed in the 30 d before program admission	1.01 (1.01, 1.02)	< .001	0.2
Past hospitalization for alcohol abuse	1.16 (1.07, 1.26)	< .001	0.1
No. of days using drugs in the 30 d before program admission	0.99, (0.98, 0.99)	.001	0.1
Race	1.09 (1.00, 1.18)	0.04	0.1
Outcome: employed at discharge			
VA financial support	3.05 (2.67, 3.48)	< .001	5.0
No. of days drinking in the 30 d before program admission	1.02 (1.02, 1.03)	< .001	0.9
No. of days employed in the 30 d before program admission	0.98 (0.97, 0.99)	.001	0.2
No. of reported medical problems	0.96 (0.94, 0.99)	.001	0.1
Past hospitalization for drug abuse	0.84 (0.76, 0.94)	.005	0.1
Past hospitalization for psychiatric disorder	1.13 (1.01, 1.27)	.027	0.1

Note. CI = confidence interval; OR = odds ratio; VA = Veterans Affairs. Analyses used forward stepwise method of entry with Wald. McKelvy-Zelvoina R^2 provides an estimate of the percent of variance in the outcome measure explained by the predictor variable (e.g., 0.6 = 0.6 of 1%; 10.3 = 10.3%).

DISCUSSION

In these analyses, we examined the frequency of recent suicidal behavior in a large sample of older homeless veterans admitted to a transitional housing intervention program. Older individuals have historically been at high risk for suicide relative to other age groups, and older men are particularly at risk. There is evidence to suggest that risk among veterans is enhanced, and we hypothesized that suicidal behavior might be especially prevalent among homeless older veterans because of the cumulative vulnerability resulting from substance abuse, mental illness, poor health, and limited access to health care. Our descriptive analyses suggested that suicidal behavior was quite common in older homeless veterans seeking to enter housing intervention programs. Approximately 12% of our large national sample reported suicidal ideation before program admission. Although this was substantially higher than estimates of 12-month prevalence of suicide ideation among the general population, this rate was substantially lower than that reported by Benda[20] for a small sample of substance-abusing veterans and might reflect differences in assessment methodology. Our suicidal ideation variable was based solely on responses to a single question, whereas the smaller sample of Benda[20] was based on a psychometric cutoff for a multi-item Likert scale. Approximately 3% of our sample reported a suicide attempt in the 30 days before program admission. This result was quite consistent with the 30-day prevalence reported previously for older homeless individuals (3.48%) by Desai et al.[18] and for veterans seeking treatment of

substance abuse or psychiatric disorders (3.4%) by Tiet et al.[19]

Consistent with previous research on the elderly,[3] we found that older veterans with suicidal behavior had more problematic histories than older veterans without such behavior, as indicated by significant differences in measures of physical health, alcohol and substance use, and mental health. Most of these differences were questionably meaningful, but current serious depression in combination with a current psychiatric problem and history of hospitalization for psychiatric disorder appeared to be a key pattern of pathology characterizing suicidal behavior in older homeless veterans. There did not appear to be any differences in housing intervention outcomes based on the presence of suicidal behavior at the time of program admission.

We used logistic regression analysis to address the relative importance of demographic, background, health, and mental health variables on predicting the presence of suicidal behavior at the time of program admission. Although numerous significant predictors were identified, the importance of a report of recent serious depression was the sentinel variable. Logistic regression analyses were also used to examine the relative importance of suicidal behavior preceding program admission to program intervention outcomes. In essence, these analyses addressed the question of whether suicidal behavior had a negative impact on outcomes. These analyses identified a number of significant, but questionably meaningful predictors of outcome, but none included suicidal behavior as a significant predictor.

Limitations

We noted several caveats with regard to the results. Although Form X captures fairly comprehensive information at program intake, data for suicidal behavior is captured from only 2 questions, and the presence of serious depression is assessed with only a single question. There are no available data on the reliability of these questions. Given our findings, future research on characteristics of homeless veterans at point of entry into homeless housing programs should employ any one of several reliable multi-item self-report instruments for the assessment of suicidal ideation and depression.

A critical issue was whether the groups with and without suicidal behavior were comparable on important variables not addressed in this study. One particularly important confounding factor could have been the receipt of mental health services before program entry that might have ameliorated suicidal behaviors. Data were not available to address this issue specifically, but we noted that the large majority of veterans in the sample were referred by community agencies, and virtually all veterans were administered Form X in the community rather than in a VA health care setting. These findings suggested that no veterans in either group were actively receiving mental health treatment in VA health care facilities at the time of program admission.

Conclusions

The results of this study added evidence to the small body of literature documenting the increased prevalence of suicidal behavior in homeless veterans and extended previous research by illuminating the characteristics of older homeless veterans. Consistent with previous studies, older homeless veterans exhibiting suicidal behavior were found to have histories characterized by high rates of psychiatric disorders and substance abuse. A particularly strong finding was the significance of the relationship between suicidal behavior and self-reported serious depression in the period before program admission. Notably, the presence of suicidal behavior was not found to have an impact on short-term intervention outcomes, such as program completion, housing outcome, and employment. Future studies of older homeless veterans would be most valuable if they employed longitudinal approaches to determine the significance of suicidal behavior on long-term homelessness, long-term housing intervention outcomes, health care access, health status, and mortality. Such studies would allow the development of informed policies for identifying, treating, and protecting veterans with suicidal behavior in VA housing programs. ■

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Contributors

J. A. Schinka conceptualized the project, conducted analyses, and contributed to writing the article. K. C. Schinka assisted in conceptualizing the project, conducted the literature review, and participated in writing the article. R. J. Casey contributed to abstracting the data and interpretation of findings. W. Kasprow conducted data abstracting and assisted in the analysis. R. Bossarte assisted in interpretation of findings and editing the article.

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An institutional review board of the Department of Veterans Affairs determined that approval was not required.

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