Health and Social Adjustment of Homeless Older Adults With a Mental Illness

Rebecca J. Gordon, Psy.D. Robert A. Rosenheck, M.D. Richard A. Zweig, Ph.D. Ilan Harpaz-Rotem, Ph.D.

Objective: To better inform treatment strategies, this study compared mental health, substance use, physical health, and social support among young, middle-aged, and older homeless adults before and after participation in intensive case management services. Methods: Data were obtained from the Access to Community Care and Effective Services and Supports (ACCESS) public database. Young (age 18 to 34; N=2,469), middle-aged (age 35 to 54; N=4,358), and older (age 55 or older; N=408) homeless adults with a mental illness were compared on the basis of demographic characteristics and measures of substance use, mental and general medical health, and social support at baseline by using Kruskal-Wallis and chi square tests and at three-month and 12-month follow-ups by using mixed-model analysis. Results: Older adults had fewer severe mental health and substance abuse problems than the two groups of younger adults at baseline. At 12-month follow-up, all age groups had improvements in housing, substance use, and psychiatric symptoms, but rates of psychiatric symptoms had improved the most among young adults, and their scores for psychiatric symptoms were the lowest on average of any group. Compared with older adults, adults in the younger groups showed greater decreases in substance use. **Conclusions:** Older homeless adults appeared to follow a different treatment trajectory than their younger counterparts, possibly because of lower severity of mental illness at baseline, and may need specific interventions to address their unique pathways to homelessness. (Psychiatric Services 63: 561–568, 2012; doi: 10.1176/appi.ps.201100175)

here has been considerable concern among clinicians and program planners that the distinctive service needs of older homeless adults have not been well characterized or addressed clinically. Until now, the focus of attention has been on the considerably larger population of younger homeless adults

(1–4). Yet as the population of the United States ages and baby boomers approach older age, the proportion of homeless individuals who are older adults may increase, although the availability of Social Security may continue to keep their numbers disproportionately low (5).

Estimates of the percentage of the

overall homeless population who are over 55 vary widely, from 3% to over 20% (1,6), but are generally considerably lower than the percentage of the U.S. population (24.3%) represented by adults over 55 (7). Homeless older adults are more likely than younger homeless adults to be Caucasian, to be male, and to have physical health problems (1,4,8–11).

Some studies have found high rates of mental illness (12) and substance abuse (13,14) among homeless older adults. Previous studies have found that compared with homeless younger adults, homeless older adults are more likely to report alcohol dependence but less likely to report drug dependence, psychotic symptoms, and post-traumatic stress disorder (1,8–10).

It has been estimated that between 25% and 33% of homeless adults have a serious mental illness (15). Serious mental illness is a risk factor for homelessness (16) and makes the treatment more complex and challenging (17). Homeless older adults with a serious mental illness represent a vulnerable population that is in need of research-informed treatment. Identifying the unique needs and areas of poorer outcome of homeless older adults may facilitate the development of interventions designed to address their specific needs.

To date, research published about homeless older people has been based on small local samples assessed at one time point and thus has yielded inconsistent results (1,8–10). This study used data from Access to Community Care and Effective Services and Supports (ACCESS), (18), a large, 18-site national demonstration

Dr. Gordon is affiliated with the Department of Psychology, U.S. Department of Veterans Affairs (VA) Connecticut Healthcare System, 950 Campbell Ave., 116B, West Haven, CT 06516 (e-mail: rjgordon@wesleyan.edu). Dr. Rosenheck and Dr. Harpaz-Rotem are with the Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut, and the VA New England Mental Illness Research, Education and Clinical Center, West Haven. Dr. Zweig is with the Department of Psychology, Ferkauf Graduate School, Yeshiva University, Bronx, New York.

project that assessed the impact of efforts to increase service system integration for homeless adults with a serious mental illness. ACCESS was funded by the Center for Mental Health Services of the U.S. Department of Health and Human Services. It remains an important and informative study of homeless adults with mental illness because of its extensive assessment, large sample size, and longitudinal data collection.

This study used data collected by the ACCESS project to compare baseline variables by age group and then used multinomial logistic regression to identify independent characteristics that differentiated the oldest group and the younger groups at the time of program entry. Finally, after control for baseline differences detected by multinomial logistic regression, outcomes of the age groups over a 12-month follow-up period were examined.

Methods

Sample and procedures

Data were obtained from the AC-CESS program public database. Data collection took place between 1994 and 1998. All ACCESS clients received intensive case management services. Of the 18 data collection sites across the country, nine were given extra resources to increase system integration. The results indicated that although the nine experimental sites showed increased service system integration, there were no differences in client improvement at the experimental and the control sites (19).

Participants were eligible if they had spent at least seven of the previous 14 nights at an emergency shelter, outdoors, or in a public building; had been identified as having a serious mental illness by a 30-item screening algorithm developed for a previous homelessness outreach study (20); and were not engaged in more than minimal mental health treatment. Serious mental illness was defined as having symptoms of depression, mania, or psychosis, on the basis of selfreport, or having been observed by an interviewer to have symptoms of psychosis unrelated to substance use. All sites had specialized community outreach teams to recruit homeless people with an untreated mental illness.

Written informed consent was obtained from all participants. Structured interviews were conducted at baseline and at three- and 12-month follow-ups.

Measures

Psychometric information and methods for confirming treatment fidelity were reported in a previous publication (19). Demographic information about gender, race, years of education, marital status, employment, and money earned during the previous month was collected. Homelessness was assessed on the basis of sleeping location during the previous 60 nights. Literal homelessness was defined as sleeping outdoors, in an abandoned or public building or automobile, or at an emergency shelter. Being housed was defined as living in a hotel, boarding home, halfway house, residential program, institution, jail, or one's own or another's residence. Data about the individual's age during the first episode of homelessness, number of episodes of homelessness, and lifetime years of homelessness were also collected.

Psychiatric symptoms, alcohol use, drug use, and history of a suicide attempt were assessed with the relevant subscales of the Addiction Severity Index (ASI), a measure found to be valid with older adults (21,22). Scores range between 0 and 1, with higher scores indicating more severe symptoms. The ASI psychiatric score is calculated by equally weighing 11 questions about symptoms of sadness or anxiety, hallucinations, suicidal ideation, suicide attempt, whether one is currently prescribed psychiatric medication, and how much one is bothered by psychiatric symptoms. The ASI alcohol score is calculated by equally weighing six items about the number of days in the past 30 days one drank alcohol and felt drunk and the amount of money spent on alcohol, how much one is bothered by alcohol problems, and how important one feels it is to get treatment for these problems. The ASI drug score is calculated by equally weighing 11 items assessing over the past 30 days the number of days of use, the amount of money spent, and withdrawal symptoms related to several illegal drugs and how much one is bothered by drug problems and how important one feels it is to get treatment for these problems.

Selected items of the Diagnostic Interview Schedule (23) and the Psychiatric Epidemiology Research Interview (24) were used to create three composite scores: a depression score, a psychosis score, and an interviewer observation of overtly psychotic behavior. The depression score summed the number of depression symptoms reported by an individual from among a list of five symptoms that included depressed mood or decreased interest or pleasure, trouble concentrating, feelings of worthlessness or guilt, thoughts about death, and psychomotor agitation. The psychosis score assessed the frequency of ten psychosis symptoms; each symptom had a maximum value of 4 points, for a maximum total of 40 points. The interviewer-observation score represented the number of behaviors suggestive of psychosis, such as responses to internal stimuli, out of a possible 13, that were observed during the interview. Each behavior is rated on a scale of 0, not at all, to 4, a large extent, for a maximum score of 52.

Physical health was assessed by the total number of medical disorders endorsed from among a list of 17. Subjective health status was assessed with the question, "Compared to other people your age, would you say your health is excellent, very good, good, fair, or poor?"

Social support network size was calculated as the total number of people available from a list of nine roles, such as parent or friend, to help with three types of problems (short-term loan of \$100, ride to an appointment, and someone to talk with if feeling suicidal), for a maximum total of 27 points (25). Social support satisfaction was calculated as the average response to nine questions derived from the Lehman Quality of Life Interview, each rated from 1, terrible, to 7, delighted (25). Quality of life was measured with a single item from the Lehman Quality of Life Interview (26), "Tell me how you feel about your life overall right now," scored on the same scale. A composite satisfaction with safety score was calculated by averaging a client's ratings in five categories of safety, from 1, terrible, to 7, delighted.

Early-life instability was assessed with the Family of Origin Instability Scale (27), a 12-item scale that includes questions about family history before the client's 18th birthday, including history of abuse and financial difficulties. History of antisocial behavior was assessed with the Helzer Conduct Disorder Scale (28), which includes nine yes-or-no questions that are based on the *DSM-III* criteria for conduct disorder. Past legal involvement was assessed with questions from the ASI (21).

Statistical analysis

Kruskal-Wallis and chi square analyses were used to compare baseline data among young (age 18 to 34), middle-aged (age 35 to 54), and older (age 55 and older) participants because of nonnormal distributions and nonequivalent distributions between groups. Significant Kruskal-Wallis results were analyzed for post hoc between-group differences with the Mann-Whitney U test. Effect size was calculated by using Cohen's d.

The homelessness research literature supports the use of a relatively young age to demarcate "older adult," because homeless adults resemble nonhomeless adults who are ten to 20 years older (6,29). Multinomial logistic regression was used to identify characteristics that independently differentiated older homeless adults from the younger groups.

Next, baseline characteristics of the subgroups with and without follow-up data were compared to identify potential biases in the follow-up sample. Finally, after adjustment for potentially confounding baseline differences identified by multinomial logistic regression, a mixed-model analysis was used to compare outcomes between age cohorts at three-month and 12-month follow-ups.

Results

Baseline data were available for 7,235 clients. A total of 2,469 were age 18 to 34 and 4,358 were age 35 to 54. There were 408 adults age 55 or older. Of the older sample, 230 (56%) people

were age 55 to 59, and 156 (38%) were age 60 to 69. A total of 20 (5%) individuals were age 70 to 79; one client was 85, and one was 95.

Baseline assessment

Table 1 provides a summary of demographic and homelessness characteristics at baseline. Primarily the older adults were male (61%), Caucasian (60%), and unmarried (94%).

Table 2 summarizes mental health, substance use, and physical health variables at baseline. Compared with members of the other age groups, the older adults reported significantly fewer symptoms of depression and psychosis and significantly fewer general psychiatric symptoms (ASI psychiatric score). The effect sizes were largest for general psychiatric symptoms. History of a suicide attempt was prominent among all three age groups—young (59%), middle-aged (50%), and older (26%). The ASI score for alcohol use was lowest among the older group; the ASI score for drug use was highest among the young group and lowest among the older group. The number of medical conditions endorsed by the older adults was equivalent to the number endorsed by the middle-aged adults but more than the number endorsed by the young adults.

Table 3 summarizes social support variables at baseline. Compared with participants in the younger age groups, the older adults had the fewest social supports but expressed greater satisfaction with them. The older adults reported higher quality of life and higher satisfaction with safety. They had the most childhood stability and the fewest conduct disorder symptoms.

Multinomial logistic regression was used to identify independent significant differences between age groups (the older adults were the reference group). The variables found to be significantly different were data collection site, work status, marital status, gender, depression score, years of education, money received through public support, years homeless, psychosis score, history of suicide attempt, number of medical problems, Family of Origin Instability Scale score, Helzer Conduct Disorder

Scale score, and social support network size.

Outcome assessment

Sample representativeness. A total of 331 of the older adults, 81% of the original sample, were available for 12month follow-up. Compared with those who were not available at follow-up, the older adults assessed at the follow-up were older by approximately two years and had worse social support satisfaction, greater instability in their family of origin, and more drug use (data available on request). At 12-month follow-up, middle-aged adults (N=3,513, 81%) had fewer lifetime years homeless and more medical and psychiatric problems than those not available for follow-up. Young adults who were available at the 12-month follow-up (N=1,925, 78%) had more lifetime suicide attempts than young adults who were not available at the follow-up.

Alcohol and drug use scores of those who were retained in the study were compared with scores of those who dropped out. There was no significant effect for alcohol use score, but those who dropped out of the study had a slightly higher drug use score than those who continued to participate for 12 months. No adjustment was made for baseline differences in alcohol and drug use by the two groups, which may represent a limitation to the analysis.

Outcomes. The mixed-model analysis compared the three age groups at three time points (baseline and at three-month and 12-month followups) after adjustment for all baseline variables found to be significantly different in the multinomial logistic regression (Figure 1). All age groups had a decrease in days homeless over the one-year period (age effect, F=8.74, df=2 and 18,000, p<.001; time effect, F=1,186.94, df=2 and 18,000, p<.001; and interaction of time \times age, F=4.02, df=4 and 18,000, p=.003). At three-month follow-up, older adults had significantly more days homeless than the other age groups (Figure 1).

The older adults had the lowest alcohol use score at baseline, but they had the highest score at one-year follow-up, given that use declined faster

Table 1Sociodemographic and housing characteristics of homeless adults, by age group

Characteristic	Young (18–34) (N=2,469)		Middle-aged (35–54) (N=4,358)		Older (55 or older) (N=408)					Between-group comparison ^a	
	N	%	N	%	N	%	Statistic ^b	df	p	Young vs. older	Middle-aged vs. older
Age (M±SD years)	28.47±4.38		42.30±5.12		60.17±5.11						
Gender							$\chi^2 = 28.66$	2	<.001		
Male	1,437	58	2,820	65	247	61					
Female	1,030	42	1,537	35	161	40					
Race							$\chi^2 = 58.47$	4	<.001		
Caucasian	1,022	41	1,790	41	243	60					
African American	1,150	47	2,114	49	113	28					
Other	293	12	450	10	51	13					
Marital status							$\chi^2 = 701.34$	8	<.001		
Divorced	300	12	1,417	33	162	40					
Never married	1,698	69	1,895	44	108	27					
Married	134	5	240	5	26	6					
Separated	311	13	655	15	58	14					
Widowed	24	1	144	3	52	13					
Employment status							$\chi^2 = 540.75$	18	<.001		
Full-time	561	23	697	16	22	5					
Irregular part-time	483	20	735	17	43	11					
Retired	0	_	4	_	23	6					
Disability	437	18	1,193	28	137	34					
Unemployed	754	31	1,365	32	159	39					
Education (M±SD years)	11.3 ± 2.2		$11.8\pm2.$	6	11.1±3	5.5	K = 130.810	2, 7,200	<.001	.08	.26
Earned income in past											
month (M±SD)	$$58 \pm 20	8	53 ± 2	03	\$18±\$8	88	K=39.051	2, 7,212	<.001	.20	.18
Public support payments											
in past month (M±SD)	\$179±\$2	36	\$228±\$	360	\$305±8	\$309	K=51.346	2, 7,234	<.001	.51	.22
Total money received											
in past month (M±SD)	$$299 \pm 475		\$330±\$448		\$361±\$346		K=41.152	2, 7,230	<.001	.13	.07
Nights homeless (M±SD) ^c			38.0 ± 21.1		39.1 ± 22.1		K=16.917	2, 7,234	<.001	.14	.05
Nights housed (M±SD) ^d	13.1 ± 17.8		11.1 ± 17.1		9.5 ± 17.4		K=61.860	2, 7,234	<.001	.20	.10
Age when first											
homeless (M±SD years)	23.0±6.1		33.6 ± 10).2	48.6 ± 1	4.0	K=2,291.999	2, 7,025	<.001	3.31	1.42
Total years homelessness											
(M±SD)	2.3 ± 3.6		3.6 ± 5.5		4.6 ± 7.7	7	K=54.835	2, 7,005	<.001	.52	.17

^a Cohen's d effect size was used to compare young versus older adults and middle-aged versus older adults.

among the younger age groups and use among the older clients increased from three months to one year (time effect, F=52.18, df=2 and 18,000, p< .001; interaction of time \times age, F= 3.97, df=4 and 18,000, p=.003) (Figure 1). The same pattern was observed for drug use score, with the older adults having the lowest scores at baseline but the highest scores at one-year follow-up (time effect, F=72.74, df=2 and 18,000, p<.001; interaction of time \times age, F=6.32, df=4 and 18,000, p<.001). On the ASI psychiatric score, the older adults had the lowest score at baseline, and the score decreased over time for all age groups. The rate of decline was significantly greater among both groups of younger adults and greatest for the youngest adults versus the older adults (time effect, F=362.88, df=2 and 18,000, p<.001; interaction of time \times age, F=10.30, df=4 and 18,000, p<.001). At one-year follow-up, young adults had the lowest ASI psychiatric score of any age group.

There was also a significant main effect for data collection site, but it did not have an impact on the significant interaction effects for age and days homeless, ASI psychiatric score, drug use score, and alcohol use score. There were no significant interactions of time and age group on any other outcome, including depression score, public support payments, subjective health, quality of life, and suicide attempt.

Discussion

This study found that at baseline, homeless adults who were older consistently had better mental health and fewer, but more satisfying, social supports than the younger groups. Over a one-year period, all age groups experienced a decrease in days homeless. The older adults had the lowest substance use and psychiatric scores at baseline, but over time the other age groups experienced more rapid and larger decreases of such scores. At the one-year mark, young adults had the lowest scores for substance use and psychiatric symptoms. Although differences in the scores of the three age groups over time were statistically significant, the change in ASI psychi-

^b Chi square analysis was used for categorical variables, and Kruskal-Wallis test was used for continuous variables.

^c Nights in the past 60 days spent sleeping outdoors, in an abandoned or public building or automobile, or at an emergency shelter

d Nights in the past 60 days spent at a hotel, boarding home, halfway house, residential program, institution, jail, or one's own or another's residence

Table 2Mental health, substance use, and general medical health among homeless adults, by age group

Characteristic	Young (18–34) (N=2,469)		Middle-aged (35–54) (N=4,358)		Older (55 or older) (N=408)					Between-group comparison ^a	
	N N		N = 4,336) —— %	N %		Statistic ^b	df	р	Young vs. older	Middle-aged vs. older
									1		
Psychiatric symptoms	- 0 -0				a= aa			• =		0.7	
(M±SD score) ^c	.56±.23		$.52 \pm .25$		$.37 \pm .26$		K=104.658	2, 7,009	<.001	.81	.60
Depression (M±SD score) ^d	d 3.36±1.89		3.19 ± 1.98		2.24 ± 2.07		K=43.293	2, 7,231	<.001	.58	.48
Psychosis (M±SD score) ^e	11.62 ± 9.28		11.20 ± 9.30		8.24 ± 9.15		K=36.312	2, 7,227	<.001	.37	.32
Overtly psychotic behavior											
(M±SD score)f	10.02 ± 7.81		10.91 ± 8.10		11.95 ± 7.95		K=26.412	2, 7,228	<.001	.25	.13
Ever attempted suicide	1,442	59	2,160	50	104	26	$\chi^2 = 161.67$	2	<.001		
Lifetime suicide attempts	4.54 ± 7.35	ó	3.68±6.05	,	3.11 ± 4.22		K=34.358	2, 3,659	<.001	.20	.10
Alcohol use (M±SD score)	.13±.20		$.15 \pm .22$		$.08 \pm .16$		K=52.280	2, 7,133	<.001	.28	.32
Drug use (M±SD score)c	$.08 \pm .12$		$.07 \pm .11$		$.02 \pm .06$		K=191.694	2, 7,172	<.001	.56	.48
Ever used drugs	1,956	80	3,228	75	135	34		2	<.001		
Drug use in past 30 days	749	31	1,047	24	26	6	$\chi^2 = 115.47$	2	<.001		
Health problems (M±SD)g	2.3 + 2.1		3.1 ± 2.4		3.1 ± 2.3		K=136.797	2, 7,186	<.001	.38	0
Subjective health								_, .,100			~
(M±SD score)h	2.8 ± 1.2		2.6 ± 1.2		$2.7\!\pm\!1.2$		K=12.905	2, 7,208	.002	.08	.08

^a Cohen's d effect size was used to compare young versus older adults and middle-aged versus older adults.

atric score was more clinically meaningful than the changes in ASI drug and alcohol scores.

At baseline, the older adults had markedly less current and lifetime

substance use than the younger age groups. Although the age differences were statistically significant for alcohol and drug use, the effect size was larger for drug use. Over time, substance abuse by the two groups of younger adults decreased sharply, but among the older adults, substance use decreased by the three-month followup but had returned to its original lev-

Table 3

Social support and community adjustment among homeless adults, by age group

	Young (18–34) (N=2,469)		Middle-aged (35–54) (N=4,358)		Older (55 or older) (N=408)					Between-group comparison ^a	
										Young	Middle-aged
Characteristic	M	SD	M	SD	M	SD	Kappa	df	p	vs. older	vs. older
Social support size ^b	2.0	2.1	1.8	2.2	1.2	1.5	67.62	2, 7,227	<.001	.40	.27
Social support satisfaction											
score	4.1	1.1	4.1	1.1	4.3	1.1	27.59	2, 6,666	<.001	.25	.21
Quality of life score ^d	3.2	1.7	3.3	1.7	3.6	1.8	11.37	2, 7,200	.003	.23	.18
Family of Origin Instability											
Scale score	6.0	2.6	5.0	2.7	3.7	2.5	278.94	2, 7,215	<.001	.92	.50
Helzer Conduct Disorder											
Scale score ^f	3.3	2.5	2.3	2.4	1.3	1.8	291.88	2, 7,221	<.001	.80	.42
Ever convicted of a crime (N)g	1,145		2,190		125						
Lifetime months in jail	11.3	27.4	19.8	46.2	15.1	45.6	51.94	2, 7,234	<.001	.12	.10
Satisfaction with safety score ^h	3.8	1.3	3.8	1.3	4.1	1.3	24.61	2, 7,094	<.001	.27	.27
Scale score ^c Helzer Conduct Disorder Scale score ^f Ever convicted of a crime (N) ^g Lifetime months in jail	3.3 1,145 11.3	2.5 27.4	2.3 2,190 19.8	2.4 46.2	1.3 125 15.1	1.8 45.6	291.88 51.94	2, 7,221 2, 7,234	<.001 <.001	.80 .12	.42

^a Cohen's d effect size was used to compare young versus older adults and middle-aged versus older adults.

^b Chi square analysis was used for categorical variables, and Kruskal-Wallis test was used for continuous variables.

^c Relevant subscales of the Addiction Severity Index. Possible scores range from 0 to 1, with higher scores indicating more symptoms.

^d Possible scores range from 0 to 5, with higher scores indicating more depressive symptoms.

^e Possible scores range from 0 to 40, with higher scores indicating more psychotic symptoms.

f Interviewer observation. Possible scores range from 0 to 52, with higher scores indicating more psychotic symptoms.

g Possible scores range from 0 to 17, with higher scores indicating more health problems.

h Possible scores range from 1 to 5, with higher scores indicating better perceived health compared with others.

^b Possible scores range from 0 to 27, with higher scores indicating more people available for support.

^c Possible scores range from 1 to 7, with higher scores indicating more satisfaction with social support.

^d Possible scores range from 1 to 7, with higher scores indicating better subjective quality of life.

^e Possible scores range from 0 to 12, with higher scores indicating more childhood instability.

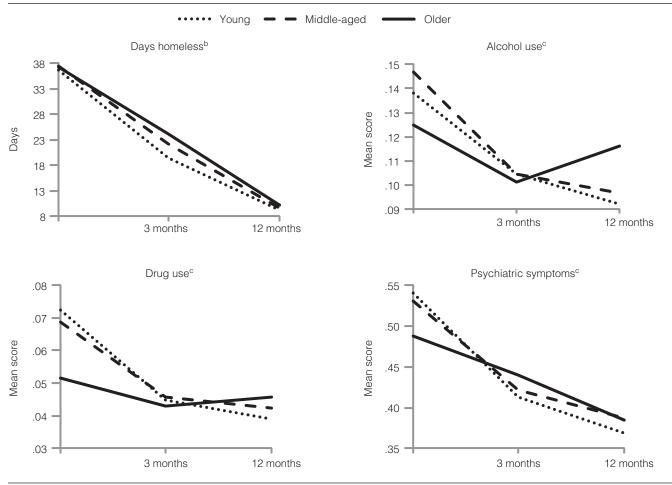
f Possible scores range from 0 to 9, with higher scores indicating more conduct disorder symptoms during childhood.

g Young adults, 47%; middle-aged adults, 50%; and older adults, 31%; χ^2 =60.29, df=2, p<.001

From a dunts, 47%; middle-aged adults, 50%; and older adults, 51%; χ = 00.29, di=2, p<.001
 Possible scores range from 1 to 7, with higher scores indicating more satisfaction with safety.

Figure 1

Mixed-model analyses comparing outcomes of homeless adults at three- and 12-month follow-ups, by age group^a



^a Analyses controlled for variables that were significantly different at baseline. Young adults were age 18–34; middle-aged adults, age 35–54; and older adults, age 55 or older.

els at the one-year follow-up. Overall, the rate of substance use by the older adults was relatively low compared with rates of substance use reported by other studies of homeless and non-homeless older adults (30). Two other studies found that homeless older adults had lower rates of drug use, but higher rates of alcohol use, compared with younger adults (8,9).

In interpreting the data, it is important to consider the greater impact of a given amount of alcohol on an older adult because of age-related changes in the metabolism of alcohol (31,32) and the increased risk for adverse alcohol-medication interactions among older adults because of the increased use of medications (33).

This study found that older adults had the lowest ratings for overall psychiatric symptoms at baseline but that these age differences disappeared at one-year follow-up because of more rapid improvement among the two younger groups of adults. Past research has found that among homeless adults, rates of psychosis symptoms were lower among older versus younger adults but that rates of other psychiatric symptoms among the two groups were comparable (8,9).

Lifetime history of suicide attempt was more likely to be reported by the younger groups of homeless adults. Among nonhomeless samples, older adults are among the age groups with the highest rates of completed suicide, and among older adults, Caucasian men have the highest rates of completed suicide. Yet older adults have the fewest nonlethal attempts (34,35). The relatively lower rates of past suicide attempts among the old-

er subsample of this study might be due to a combination of better mental health at baseline and a greater likelihood that suicide attempts would be successful.

The longitudinal data show that among older adults, substance use scores improved at a slower rate or did not change compared with the scores of young and middle-aged adults, who demonstrated improvements in substance use scores and across all of the primary measures of outcome. Although the mixed model controlled for baseline differences, it is possible that the lower levels of substance use at baseline among the older adults had an impact on the data analysis. Interpretation of agerelated longitudinal changes in substance use should be cautious given the small significant changes. The

^b Number of days homeless in the past 60 days

^c Relevant subscales of the Addiction Severity Index (ASI). Possible scores range from 0 to 1, with higher scores indicating more symptoms.

reasons for these age differences are unclear but may reflect that younger people possess greater behavioral malleability or that current interventions lack efficacy in addressing the specific needs of homeless older adults.

Methodological limitations of this study include the exclusion of homeless adults without mental health diagnoses, selection bias, time elapsed since data collection, lack of cognitive assessment, and incomplete follow-up rates. Given the study's inclusion criteria, the results are applicable only to homeless adults with a mental health diagnosis who are willing to participate in an intervention project; however, that is clearly the population of greatest concern to mental health practitioners.

The ACCESS data collection, dating from 1994 to 1998, are now over a decade old, and cohort effects may be relevant. However, such effects are unlikely to account for all of the agerelated differences found by this study. There has been research predicting that the baby boomer cohort will lead to an increase in substance use among homeless older adults (36). Recent research has shown an increase in drug-related admissions and a decrease in alcohol-related admissions among older adults, but alcohol dependence remains the most common substance use diagnosis among older adults (37).

Although there have been some increases in homeless services since the data were collected, going forward, budget cuts may cause future services to resemble those of the past; in addition, the ACCESS study provided participants with greater services than were available in the community, thus creating a treatment environment similar to what is available in the community currently. The older data remain valuable because they represent the largest collection of longitudinal data about homeless older adults with mental illness, a subgroup that is rarely studied.

Conclusions

This study found that among homeless adults with mental illness, the older clients scored lower than younger clients on baseline measures of mental health and substance use and higher on baseline measures of social adaptation, reflecting less severe problems. Over a one-year period of active community-based case management, housing improved substantially for all age groups. The comparison of psychiatric and substance use variables between age groups showed a distinct pattern of difference, however, with lower severity at baseline and less improvement over time among the older adults. In particular, the lack of improvement in alcohol use over time among the older adults suggests a need for interventions tailored for their age group; these age-related longitudinal findings would be strengthened through replication in future research.

Although the differences in baseline and longitudinal outcomes among age groups were statistically significant, the small magnitude of the differences suggests that some may not be clinically meaningful and that one must be cautious in drawing implications for clinical service delivery or policy. For example, treatment of homeless adults may justifiably emphasize outcomes such as drug use, given the high rates of drug use on average among the homeless population. However, treatment of homeless older adults may be improved by focusing on utilizing these individuals' small but high-quality social support networks and other strengths that allow for survival in a high-risk environment.

Acknowledgments and disclosures

The authors report no competing interests.

References

- Barak Y, Cohen A: Characterizing the elderly homeless: a 10-year study in Israel. Archives of Gerontology and Geriatrics 37: 147–155, 2003
- Abdul-Hamid W: The elderly homeless men in Bloomsbury hotels: their needs for services. International Journal of Geriatric Psychiatry 12:724–727, 1997
- Nakonezny PA, Ojeda M: Health service utilization between older and younger homeless adults. Gerontologist 45:249– 254, 2005
- Garibaldi B, Conde-Martel A, O'Toole TP: Self-reported comorbidities, perceived needs, and sources for usual care for older and younger homeless adults. Journal of

- General Internal Medicine 20:726–730, 2005
- Rossi P: Down and Out in America: The Origins of Homelessness. Chicago, University of Chicago Press, 1991
- Cohen, CI, Teresi J, Holmes D: The phys ical well-being of old homeless men. Journal of Gerontology 43:121–128, 1988
- 7. Population by Age and Sex, 2010. Washington, DC, US Census Bureau, Population Division, 2010. Available at www.cen sus.gov/population/www/socdemo/age/old er_2010.html
- 8. DeMallie DA, North CS, Smith EM: Psychiatric disorders among the homeless: a comparison of older and younger groups. Gerontologist 37:61–66, 1997
- Gelberg L, Linn L, Mayer-Oakes SA: Differences in health status between older and younger homeless adults. Journal of the American Geriatrics Society 38:1220– 1229, 1990
- Gelberg L, Linn L: Demographic differences in health status of homeless adults. Journal of Geriatric Internal Medicine 7:601–608, 1992
- Wallsten SM: A portrait of homelessness. Journal of Psychosocial Nursing 30:20–24, 1992
- Fazel S, Kholsla V, Doll H, et al: The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. PLoS Medicine 5:e255, 2008
- Welte JW, Barnes GM: Drinking among homeless and marginally housed adults in New York State. Journal of Studies on Alcohol 53:303–315, 1992
- Spinner GF, Leaf PJ: Homelessness and drug abuse in New Haven. Hospital and Community Psychiatry 43:166–168, 1992
- Lehman AE, Cordray DS: Prevalence of alcohol, drug, and mental disorders among the homeless: one more time. Contemporary Drug Problems 20:355–383, 1993
- The Health of the Homeless—The Mental Health of Homeless People. Available at www.libraryindex.com/pages/2322/Health-Homeless-SUBSTANCE-ABUSE.html. Accessed Oct 15, 2011
- 17. Sullivan G, Burnam A, Koegel P, et al: Quality of life of homeless persons with mental illness: results from the course of homelessness study. Psychiatric Services 51:1135–1141, 2000
- Randolph F, Blasinsky M, Morrissey JP, et al: Overview of the ACCESS program. Psychiatric Services 53:945–948, 2002
- Rosenheck RA, Lam J, Morrissey JP, et al: Service systems integration and outcomes for mentally ill homeless persons in the ACCESS program. Psychiatric Services 53: 958–966, 2002
- 20. Shern DL, Lovell AM, Tsembris S, et al: The New York City Outreach Project: serving a hard-to-reach population, in Making a Difference: Interim Status Report of the McKinney Demonstration Program for

- Homeless Adults With Serious Mental Illness. Rockville, Md, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, 1994
- McLellan A, Luborsky L, Woody G, et al: An improved diagnostic evaluation instrument for substance abuse patients: the Addiction Severity Index. Journal of Nervous and Mental Disease 168:26–33, 1980
- McLellan AT, Luborsky L, Cacciola J, et al: New data from the Addiction Severity Index: reliability and validity in three centers. Journal of Nervous and Mental Disease 173:412–423, 1985
- Robins LN, Helzer JE, Croughan T: The National Institute of Mental Health Diagnostic Interview Schedule. Archives of General Psychiatry 38:381–389, 1981
- Dohrenwend BP: Psychiatric Epidemiology Research Interview (PERI). New York, Columbia University, Social Psychiatry Research Unit, 1982
- Vaux A, Athanassopulou M: Social support appraisals and network resources. Journal of Community Psychology 15:537–556, 1987

- 26. Lehman A: A quality of life interview for the chronically mentally ill. Evaluation and Program Planning 11:51–62, 1988
- 27. Kadushin C, Boulanger G, Martin J: Long term stress reactions: some causes, consequences, and naturally occurring support systems; in Legacies of Vietnam. Washington, DC, US Government Printing Office, 1981
- 28. Helzer JE: Methodological issues in the interpretations of the consequences of extreme situations; in Stressful Life Events and Their Contexts. Edited by Dohrenwend BS, Dohrenwend BP. New York, Neale Watson Academic Publications, 1981
- Doolin J: "America's untouchables," the homeless elderly. Perspectives on Aging 9: 8–11, 1986
- Weisner C, McLellan AT, Hunkeler EM: Addiction Severity Index data from general membership and treatment samples of HMO members: one case of norming the ASI. Journal of Substance Abuse Treatment 19:103–109, 2000
- 31. Vogel-Sprott M, Barrett P: Age, drinking

- habits, and the effect of alcohol. Journal of Studies on Alcohol 45:517–521, 1984
- 32. Dufour MC, Archer L, Gordis E: Alcohol and the elderly. Clinical Geriatric Medicine 8:127–141, 1992
- 33. Moore AA, Whiteman EJ, Ward KT: Risks of combined alcohol/medication use in older adults. American Journal of Geriatric Pharmacotherapy 5:64–74, 2007
- Conwell Y, Duberstein PR, Connor K, et al: Access to firearms and risk for suicide in middle-aged and older adults. American Journal of Geriatric Psychiatry 10:407– 416, 2002
- 35. Loebel JP: Completed suicide in late life. Psychiatric Services 56:260–262, 2005
- Gfroerer J, Penne M, Pemberton M, et al: Substance abuse treatment need among older adults in 2020: the impact of the aging baby-boom cohort. Drug and Alcohol Dependence 69:127–135, 2003
- 37. Adults Aged 65 or Older in Substance Abuse Treatment. DASIS Report, May 31, 2007. Available at www.samhsa.gov/data/ 2k7/olderTX/olderTX.pdf

Information for Contributors

Psychiatric Services uses a Web-based submission system, ScholarOne Manuscripts. Authors of research reports should submit their manuscripts for peer review at mc.manuscriptcentral.com/appi-ps.

Guidelines on preparing manuscripts for submission, a list of tips for uploading files to ScholarOne Manuscripts, and other information for contributors are available on the journal's Web site at ps.psychiatryonline.org.

Queries about the appropriateness of a submission and other editorial matters, as well as letters to the editor commenting on articles in recent issues of the journal, should be sent to the editorial office at psjournal@psych.org.