Housing Outcomes of Adults Who Were Homeless at Admission to Substance Use Disorder Treatment Programs Nationwide

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Objective: Substance use disorders affect 30%−50% of single homeless adults, and specialized homelessness service programs enable homeless persons to exit homelessness at rates of about 80%. However, many such adults are treated in substance use disorder treatment programs. This study examined housing outcomes in these programs.

Methods: Data from the Treatment Episode Data Set: Discharges database were used to examine housing status at discharge from substance use disorder treatment programs of adults who were homeless at admission. Associations of outcomes with sociodemographic characteristics, treatment programs and processes, and clinical variables were further evaluated with bivariate and multivariate logistic regressions. Odds ratios of ≥1.5 or ≤0.67 were considered meaningful.

Results: Of 1,200,105 persons admitted to the programs, 192,838 (16.1%) were homeless at admission; 68.7% remained homeless at discharge, 16.3% were discharged to dependent housing, and only 15.0% were discharged to

independent housing. Factors associated with remaining homeless included being age ≥55 years, being unemployed, admission for detoxification (vs. rehabilitation or residential treatment or ambulatory treatment), shorter stays, and program noncompletion. Factors associated with discharge to independent versus dependent housing included employment, admission to nonintensive outpatient treatment, and, unexpectedly, shorter stays.

Conclusions: Most adults experiencing homelessness at admission to substance use disorder treatment programs remained homeless at discharge, and only half of those no longer homeless were independently housed. These outcomes are considerably worse than outcomes typically reported by specialized homelessness service programs. Evidence-based service models that support exit from homelessness could be provided through augmented internal programming or links with specialized programs.

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Homelessness represents an ongoing public health crisis in the United States, with >580,000 individuals experiencing homelessness on a given night in 2020 (1). It is estimated that 30%−50% of adults experiencing homelessness have a substance use disorder (2–6), and alcohol and drug use disorders are perhaps the most important health-related risk factors for chronic homelessness (7, 8).

Although substance use disorders involving alcohol and drugs confer substantial risk for homelessness, interventions such as subsidized and supportive housing have been shown to facilitate exits from homelessness as effectively for people with these disorders as for others (9–11). For example, permanent supportive housing and Housing First programs have consistently enabled 80% of participants to obtain and retain independent housing (12, 13) and, to a lesser extent, have reduced alcohol and drug use and improved community functioning and quality of life (14–18).

HIGHLIGHTS

- Homeless adults in the United States experience high rates of substance use disorders, and nearly 200,000 were admitted in 2018 to federally funded programs for substance use disorder treatment.

- More than two-thirds of adults who were homeless at admission to these programs remained homeless at discharge, a considerably worse outcome than outcomes reported by specialized homelessness service programs.

- Of adults who obtained housing at discharge, about half entered dependent housing and the other half obtained independent housing.

- Factors associated with remaining homeless included older age, lack of employment, being admitted for detoxification, shorter length of stay, and noncompletion of the treatment program.

Programs to treat patients with substance use disorders are a potentially important but underutilized point of contact for housing intervention. Although many homeless adults with substance use disorders are admitted to treatment programs for such disorders, few studies have examined the role and effectiveness of such programs in addressing homelessness (19, 20).

This study used a comprehensive database of patients discharged from federally funded substance use disorder treatment programs nationwide, the 2018 Treatment Episode Data Set: Discharges (TEDS-D), to estimate the proportion of adults admitted to such programs who were homeless and who remained so at discharge. It further examined specific sociodemographic characteristics, treatment programs and processes, and clinical variables that are associated with major housing outcomes, with the goal of identifying opportunities for interventions that could facilitate exit from homelessness.

METHODS

Data Sources and Study Sample

Data were retrieved from the TEDS-D, a data set compiled annually by the Substance Abuse and Mental Health Services Administration concerning users of substance use disorder treatment facilities in the United States that receive federal funding. This nationwide data set comprises information on demographic, socioeconomic, clinical, and other characteristics of individuals using these services (21). This study included adults ages ≥18 years who were homeless on admission to a substance use disorder treatment facility and who were discharged during 2018. Institutional review board approval was waived because the data were public and deidentified.

Measures

The TEDS-D data set defines "homeless" as having no fixed address or residing in a shelter (22). "Dependent living" includes supervised settings, such as residential programs, halfway homes, or group homes. "Independent living" is defined as living alone or with others in a private residence and being capable of self-care. Independent living includes permanent supportive housing and scattered-site voucher programs in which case management is available for support.

Sociodemographic characteristics documented for patients discharged during the study period included age (18–34, 35–54, or ≥55 years), sex (male or female), race (non-Hispanic White, non-Hispanic Black, Hispanic, or other), marital status (never married; currently married; or separated, divorced, or widowed), U.S. region (Northeast, Midwest, South, or West), education level (less than high school, high school or equivalent, or more than high school), employment status (full-time, part-time, or not employed), veteran status (yes or no), primary source of income (wages or salary; public assistance; retirement, pension, or disability; or other), and arrests in the 30 days before admission (none, once, or two or more times).

Program characteristics examined included service setting at admission (detoxification, rehabilitation or residential, intensive outpatient, or nonintensive outpatient). Patient-level measures of service delivery included reason for discharge (completed treatment, dropped out or terminated, or incarcerated or transferred to another facility), length of stay in treatment (1–30, 31–60, 61–120, or ≥121 days), referral source (individual, health care provider, work, or court or criminal justice), and primary type of substance use at admission (alcohol, opioids, marijuana, cocaine and methamphetamine, or other).

Statistical Analysis

After descriptive analyses of residential status, bivariate logistic regression analyses were used to examine the association of sociodemographic and clinical variables with each of two dependent variables: homeless status at discharge (homeless vs. housed) and the type of housing (independent vs. dependent). Independent variables included the sociodemographic and clinical characteristics noted above.

Because of the large sample sizes, statistical significance was achieved for most variables, even if the magnitude of the associations was small. As a result, effect sizes were used to identify substantially meaningful associations by using published thresholds for odds ratios (ORs) of ≥1.5 or ≤0.67 (23). These thresholds were somewhat lower than the 2.0–0.5 minimum standard recommended by Ferguson (23) as the "minimum effect size representing a 'practically' significant effect" and were therefore liberal standards for identifying meaningful associations, making it unlikely that any meaningful relationships were overlooked. Multivariate logistic regression analysis was then used to identify factors independently associated with remaining homeless at discharge and, among those no longer homeless, with becoming independently versus dependently housed at discharge.

RESULTS

The TEDS-D data included 1,200,105 admissions of persons discharged from substance use disorder treatment programs during 2018, including 192,838 (16.1%) who had been homeless at the time of admission. Of these homeless adults, 132,561 (68.7%) remained homeless at discharge, 31,366 (16.3%) were discharged to dependent housing, and 28,911 (15.0%) were discharged to independent housing.

Correlates of Homelessness at Discharge

Bivariate analyses. Bivariate analysis (Tables 1 and 2) showed that individuals ages ≥55 years and those with either no employment or part-time employment were substantially more likely than those who were younger and employed full-time to be homeless at discharge.

TABLE 1. Sociodemographic characteristics of homeless adults admitted in 2018 to federally funded substance use disorder treatment programs (N=192,838), by housing status at program discharge, and bivariate analysis of characteristics associated with housing status at discharge[a]

							Bivariate logistic regression analysis					
	Homeless (N=132,561, 68.7%)		Dependent living (N=31,366, 16.3%)		Independent living (N=28,911, 15.0%)		Homeless vs. dependent or independent living			Independent living vs. dependent living		
Characteristic	N	%	N	%	N	%	OR	95% CI	p	OR	95% CI	p
Age in years												
18–34 (reference)	49,614	65.4	13,799	18.2	12,429	6.4						
35–54	64,378	70.0	14,336	15.6	13,426	14.6	1.23	1.21–1.25	<.001	1.04	1.01–1.08	.024
≥55	18,569	74.7	3,231	13.0	3,056	12.3	1.56[b]	1.51–1.61	<.001	1.05	.99–1.11	.082
Sex												
Male (reference)	94,940	69.6	22,222	16.3	19,310	14.2						
Female	37,763	66.7	9,228	16.3	9,628	17.0	.88	.86–.89	<.001	1.20	1.16–1.24	<.001
Unknown[c]	45	71.4	11	17.5	7	11.1						
Race-ethnicity												
Non-Hispanic White (reference)	74,352	67.6	18,780	17.1	16,883	15.4						
Non-Hispanic Black	26,994	70.0	6,148	15.9	5,450	15.4	1.12	1.09–1.14	<.001	.99	.95–1.03	.513
Hispanic	19,861	68.8	4,365	15.1	4,653	16.1	1.06	1.03–1.09	<.001	1.19	1.13–1.24	<.001
Other	10,854	73.6	2,080	14.1	1,816	12.3	1.34	1.29–1.39	<.001	.97	.91–1.04	.387
Unknown[c]	687	74.8	88	9.5	143	15.6						
Marital status												
Never married (reference)	77,534	67.8	19,758	17.3	17,036	14.9						
Currently married	6,802	67.9	1,379	13.8	1,842	18.4	1.00	.96–1.05	.923	1.55[b]	1.44–1.67	<.001
Divorced, separated, or widowed	30,140	72.0	6,019	14.4	5,733	13.7	1.22	1.19–1.25	<.001	1.10	1.06–1.15	<.001
Unknown[c]	18,272	67.9	4,305	16.0	4,334	16.1						
U.S. region												
Northeast (reference)	37,576	58.7	12,250	19.1	14,168	22.1						
Midwest	30,974	71.6	7,472	17.3	4,805	11.1	1.77[b]	1.73–1.82	<.001	.56[b]	.53–.58	<.001
South	25,647	69.1	6,979	18.8	4,515	12.2	1.57[b]	1.53–1.61	<.001	.56[b]	.53–.58	<.001
West	38,551	79.1	4,760	9.8	5,457	11.2	2.65[b]	2.58–2.73	<.001	.99	.95–1.04	.706
Education												
Less than high school (reference)	37,080	69.1	8,550	15.9	8,040	15.0						
High school or equivalent	64,051	69.3	14,592	15.8	13,785	14.9	1.01	.99–1.03	.403	1.00	.97–1.04	.814
More than high school	30,131	67.02	7,962	17.7	6,863	15.3	.91	.89–.93	<.001	.92	.88–.96	<.001
Unknown[c]	1,486	70.8	357	17.0	257	12.2						
Employment at discharge												
Full-time (reference)	6,534	50.3	1,885	14.5	4,562	35.1						
Part-time	4,749	61.6	1,072	13.9	1,891	24.5	1.58[b]	1.49–1.67	<.001	.73	.66–.80	<.001
Not employed	119,498	70.6	27,886	16.5	21,938	13.0	2.37[b]	2.28–2.45	<.001	.33[b]	.31–.34	<.001
Unknown[c]	1,967	62.7	618	19.7	554	17.6						
Veteran status												
Yes	4,406	72.3	854	14.0	834	13.7	1.20	1.14–1.27	<.001	1.06	.96–1.17	.233
No (reference)	121,045	68.4	29,075	16.4	26,770	15.1						
Unknown[c]	7,297	71.8	1,532	15.1	1,341	13.2						
Primary source of income												
Wages or salary (reference)	8,205	67.1	1,800	14.7	2,216	18.1						
Public assistance	8,384	59.9	2,873	20.5	2,731	19.5	.73	.70–.77	<.001	.77	.71–.84	<.001
Retirement, pension, or disability	6,995	67.3	1,969	18.9	1,436	13.8	1.01	.95–1.06	.847	.59[b]	.54–.65	<.001
Other	62,808	66.9	16,151	17.2	14,947	15.9	.99	.95–1.03	.574	.75	.70–.90	<.001
Unknown[c]	46,356	74.0	8,668	13.8	7,615	12.2						
Arrests in 30 days before admission												
0 (reference)	121,358	69.1	28,165	16.0	26,231	14.9						
1	9,149	65.7	2,661	19.1	2,107	15.1	.86	.83–.89	<.001	.85	.80–.90	<.001
≥2	1,710	64.9	415	15.8	509	19.3	.83	.77–.90	<.001	1.32	1.16–1.50	<.001
Unknown[c]	531	62.5	220	25.9	98	11.5						

[a] Data are from the Treatment Episode Data Set: Discharges. For the descriptive statistics, the percentages are row percentages.
[b] Substantial effect (odds ratio ≥1.5 or ≤.67).
[c] Category was not considered in the bivariate analyses using a listwise deletion process.

TABLE 2. Clinical characteristics of homeless adults admitted in 2018 to federally funded substance use disorder treatment programs (N=192,838), by housing status at program discharge, and bivariate analysis of characteristics associated with housing status at discharge[a]

| | | | | | | | Bivariate logistic regression analysis | | | | | |
| | Homeless (N=132,561, 68.7%) | | Dependent living (N=31,366, 16.3%) | | Independent living (N=28,911, 15.0%) | | Homeless vs. dependent or independent living | | | Independent living vs. dependent living | | |
Characteristic	N	%	N	%	N	%	OR	95% CI	p	OR	95% CI	p
Type of service setting at admission												
Detoxification (reference)	53,593	81.0	7,621	11.5	4,956	7.5						
Rehabilitation or residential	39,057	57.3	17,113	25.1	11,988	17.6	.31[b]	.31–.32	<.001	1.08	1.03–1.12	.001
Ambulatory, intensive outpatient	9,935	59.6	3,254	19.5	3,477	20.9	.35[b]	.33–.36	<.001	1.64[b]	1.55–1.74	<.001
Ambulatory, nonintensive outpatient	30,163	71.5	3,473	8.2	8,524	20.2	.59[b]	.57–.61	<.001	3.77[b]	3.58–3.98	<.001
Reason for discharge												
Treatment completed (reference)	56,160	62.3	18,379	20.4	15,570	17.3						
Dropped out of treatment or terminated by facility	38,405	72.4	5,860	11.1	8,790	16.6	1.58[b]	1.55–1.62	<.001	1.77[b]	1.70–1.84	<.001
Incarcerated or transferred to another facility	29,893	75.6	6,406	16.2	3,221	8.2	1.88[b]	1.83–1.93	<.001	.59[b]	.57–.62	<.001
Other	8,290	79.2	816	7.8	1,364	13.0	2.30[b]	2.19–2.41	<.001	1.97[b]	1.80–2.16	<.001
Length of stay in treatment, days												
1–30 (reference)	23,188	94.1	560	2.3	904	3.7						
31–60	88,719	69.7	22,976	18.1	15,539	12.2	.15[b]	.14–.15	<.001	.42[b]	.38–.47	<.001
61–120	10,798	53.3	4,609	2.8	4,855	24.0	.07[b]	.07–.08	<.001	.65[b]	.59–.73	<.001
≥121	10,043	47.8	3,316	15.8	7,647	36.4	.06[b]	.05–.06	<.001	1.43	1.28–1.60	<.001
Referral source												
Individual, including self-referral (reference)	63,237	69.6	14,740	16.2	12,893	14.2						
Health care provider	26,626	63.2	8,738	20.8	6,752	16.0	.75	.73–.77	<.001	.88	.85–.92	<.001
Work	18,849	74.7	3,008	11.9	3,385	13.4	1.29	1.25–1.33	<.001	1.29	1.22–1.36	<.001
Court or criminal justice, DUI or DWI[c]	21,232	67.1	4,838	15.3	5,582	17.6	.89	.87–.92	<.001	1.32	1.26–1.38	<.001
Unknown[d]	2,804	85.6	137	4.2	333	10.2						
Primary substance use at admission												
Alcohol (reference)	52,221	74.0	9,632	13.6	8,757	12.4						
Opioids	40,804	63.7	12,146	19.0	11,114	17.4	.62[b]	.60–.63	<.001	1.01	.97–1.05	.744
Marijuana	7,063	68.6	1,217	11.8	2,019	19.6	.77	.74–.80	<.001	1.82[b]	1.69–1.97	<.001
Cocaine and methamphetamine	28,646	67.6	7,517	17.7	6,222	14.7	.73	.72–.75	<.001	.91	.87–.95	<.001
Other	3,918	69.3	931	16.5	809	14.3	.79	.75–.84	<.001	.96	.87–1.05	.368
Unknown[d]	106	71.6	18	12.2	24	16.2						

[a] Data are from the Treatment Episode Data Set: Discharges. For the descriptive statistics, the percentages are row percentages.
[b] Substantial effect (odds ratio ≥1.5 or ≤.67).
[c] DUI or DWI, driving under the influence or driving while intoxicated.
[d] Category was not considered in the bivariate analyses using a listwise deletion process.

Admission to a substance detoxification facility was substantially more likely to be associated with remaining homeless than was admission to residential or ambulatory treatment, as was treatment noncompletion. On the other hand, longer stay (>30 days) in the substance use disorder treatment program was associated with substantially less risk for homelessness at discharge, as was discharge from programs located in the Northeast. Admission primarily for opioid use was, unexpectedly,

associated with a reduced risk for homelessness at discharge (OR=0.62), compared with admission for problematic use of alcohol.

Multivariate analyses of homelessness. Multivariate logistic regression showed that being age ≥55 remained an independent risk factor for homelessness at discharge (OR=1.51) (Table 3). Lack of employment (OR=1.63) was again associated with homelessness at discharge, but

TABLE 3. Independent factors associated with remaining homeless at discharge from substance use disorder treatment programs among adults who were homeless at admission in 2018[a]

Variable	OR	95% CI	p
Age (reference: 18–34 years)			
35–54	1.23	1.20–1.27	<.001
≥55	1.51[b]	1.44–1.59	<.001
Race-ethnicity (reference: non-Hispanic White)			
Non-Hispanic Black	1.38	1.34–1.43	<.001
Hispanic	1.18	1.14–1.23	<.001
Other	1.18	1.12–1.25	<.001
Region (reference: Northeast)			
Midwest	1.98[b]	1.91–2.06	<.001
South	1.36	1.31–1.42	<.001
West	4.90[b]	4.66–5.16	<.001
Employment at discharge (reference: full-time)			
Part-time	1.28	1.18–1.38	<.001
Not employed	1.63[b]	1.55–1.73	<.001
Primary source of income (reference: wages or salary)			
Public assistance	.85	.80–.91	<.001
Retirement, pension, or disability	.71	.66–.76	<.001
Other	.99	.94–1.04	.789
Arrests in 30 days before admission (reference: none)			
1	.86	.82–.91	<.001
≥2	.73	.65–.82	<.001
Type of service setting at admission (reference: detoxification)			
Rehabilitation or residential	.53[b]	.51–.55	<.001
Ambulatory, intensive outpatient	.47[b]	.44–.49	<.001
Ambulatory, nonintensive outpatient	1.08	1.02–1.13	.003
Reason for discharge (reference: treatment completed)			
Dropped out of treatment or terminated by facility	2.28[b]	2.21–2.36	<.001
Incarcerated or transferred to another facility	2.09[b]	2.00–2.18	<.001
Other	3.15[b]	2.93–3.38	<.001
Length of stay in treatment, days (reference: 1–30)			
31–60	.22[b]	.20–.23	<.001
61–120	.10[b]	.10–.11	<.001
≥121	.08[b]	.08–.09	<.001
Primary substance use at admission (reference: alcohol)			
Opioids	.71	.69–.73	<.001
Marijuana	1.07	1.01–1.14	.024
Cocaine and methamphetamine	.83	.80–.86	<.001
Other	.97	.89–1.05	.389

[a] Results of multivariable analysis; data are from the Treatment Episode Data Set: Discharges.
[b] Substantial effect (odds ratio ≥1.5 or ≤.67).

working part-time no longer correlated substantially with homelessness at discharge in the multivariate analysis. Residing in the Midwest region (OR=1.98) and especially the West region (OR= 4.90) of the United States was associated with greater likelihood of remaining homeless, compared with residing in the Northeast or South. Being admitted for detoxification was also associated with a higher risk for remaining homeless. Successful treatment completion (i.e., not dropping out of the substance use disorder treatment program or being transferred to another facility) remained protective against continued homelessness, as did length of stay of >30 days, especially when the stay was ≥121 days (OR=0.08). The primary substance of use at admission was no longer substantially associated with homelessness in the multivariate analysis.

Correlates of Independent Housing Among Those Not Homeless at Discharge

Bivariate analyses. Among those who exited homelessness at discharge, being currently married was associated with greater likelihood of obtaining independent housing in bivariate analyses (Tables 1 and 2). Participation in substance use disorder treatment programs in the Midwest or South was associated with less likelihood of obtaining independent housing, compared with participation in programs in the West or Northeast, as was nonemployment (compared with full-time employment) and receipt of retirement, pension, or disability income (compared with receipt of wages or salary). Admission to either intensive or nonintensive outpatient treatment was substantially associated with obtaining independent housing at discharge (OR=1.64 and OR=3.77, respectively). Those who dropped out of treatment or were terminated prematurely or discharged early for another reason (other than incarceration or transfer) but who obtained housing at discharge were more likely to obtain independent housing than those who completed treatment or who were incarcerated or transferred. Although results indicated that longer stays in treatment were associated with a reduced likelihood of remaining homeless, longer stays were not associated with being discharged to independent living. Compared with alcohol use, only marijuana use, but not use of other drugs, was associated with greater odds of obtaining independent living at discharge (OR=1.82).

Multivariate analysis of independent housing. Results from multivariate logistic regression indicated that after adjustment for all of the factors that were substantially associated in bivariate analyses with being housed at discharge or being independently housed (see details of these analyses above), being married was no longer associated with independent living at discharge (Table 4). Those discharged from programs in the West had the greatest likelihood of obtaining independent living, compared with any other region (OR=1.53). Similarly, those admitted to a nonintensive outpatient ambulatory program had the highest likelihood of

obtaining independent living, compared with admission to other program types (OR=2.28). As in the bivariate analysis, nonemployment reduced the likelihood of obtaining independent living at discharge, as did early termination of treatment because of incarceration or transfer (OR=0.56). Shorter stays in treatment (1–30 days) were more strongly associated with obtaining independent housing at discharge, compared with longer stays.

DISCUSSION

Of 1,200,105 patients admitted to federally funded substance use disorder treatment facilities, 16.1% were homeless at admission, and 68.7% of these patients remained homeless at discharge. Among the approximately 31% who obtained housing, fewer than half were discharged to an independent living setting. Those remaining homeless tended to be ages ≥55 years, had no employment, were admitted for detoxification, had shorter lengths of stay in the treatment program, or did not complete the program. Those discharged to independent housing tended to be employed and admitted to nonintensive outpatient treatment and, unexpectedly, had shorter stays in treatment.

These outcomes contrast with published outcomes from specialized homelessness service programs that have shown ability to house approximately 80% of homeless individuals admitted, most consistently through subsidized housing or Housing First models but also through time-limited residential treatment programs (12, 13). Our results are similar to evidence indicating transient but not long-term housing benefits of residential substance use disorder treatment among veterans (19); the few other reports show relatively poor housing outcomes as well (20).

Consistent with literature suggesting that unemployment is a major risk factor for homelessness (7), a lack of employment was an independent risk factor for remaining homeless and led to a lower likelihood of obtaining independent living.

TABLE 4. Factors independently associated with independent living at discharge from substance use disorder treatment programs among adults who were homeless at admission but not at discharge in 2018[a]

Variable	OR	95% CI	p
Female (reference: male)	1.28	1.22–1.33	<.001
Marital status (reference: never married)			
Currently married	1.31	1.21–1.42	<.001
Divorced, separated, or widowed	1.16	1.11–1.22	<.001
U.S. region (reference: Northeast)			
Midwest	.47[b]	.45–.50	<.001
South	.53[b]	.51–.56	<.001
West	1.53[b]	1.39–1.68	<.001
Employment at discharge (reference: full-time)			
Part-time	.68	.61–.77	<.001
Not employed	.40[b]	.37–.43	<.001
Arrests in 30 days before admission (reference: none)			
1	.91	.85–.98	.009
≥2	1.44	1.23–1.69	<.001
Type of service setting at admission (reference: detoxification)			
Rehabilitation or residential	.94	.89–.99	.030
Ambulatory, intensive outpatient	1.42	1.31–1.53	<.001
Ambulatory, nonintensive outpatient	2.28[b]	2.11–2.45	<.001
Reason for discharge (reference: treatment completed)			
Dropped out of treatment or terminated by facility	1.59[b]	1.52–1.67	<.001
Incarcerated or transferred to another facility	.56[b]	.52–.59	<.001
Other	1.12	1.00–1.25	.044
Length of stay in treatment, days (reference: 1–30)			
31–60	.51[b]	.45–.57	<.001
61–120	.54[b]	.47–.62	<.001
≥121	.89	.78–1.02	.096
Referral source (reference: individual, including self-referral)			
Health care provider	.77	.74–.81	<.001
Work	.93	.87–.99	.022
Court or criminal justice referral, DUI or DWI[c]	.97	.91–1.03	.288
Primary substance use at admission (reference: alcohol)			
Opioids	.90	.86–.94	<.001
Marijuana	1.23	1.12–1.36	<.001
Cocaine and methamphetamine	.94	.88–.99	.020
Other	.94	.84–1.05	.255

[a] Results of multivariable analysis; data are from the Treatment Episode Data Set: Discharges.
[b] Substantial effect (odds ratio ≥1.5 or ≤.67).
[c] DUI or DWI, driving under the influence or driving while intoxicated.

Recipients of retirement, pension, or disability income were less likely to obtain independent living than were individuals receiving wages or salary, perhaps reflecting the inadequate funds associated with disability programs such as Social Security (24) or the more severe disabilities required to qualify for such programs.

Given that affordability of housing is associated with increased exit rates from homelessness (25) and that affordable housing shortages affect especially the western United States (26), it was not surprising that being located in the West conferred the greatest risk of remaining homeless at discharge; however, those who became housed were more likely to obtain independent housing rather than dependent housing. It is unclear whether this latter finding reflects the greater availability of government subsidies for independent versus dependent living arrangements or other regional public policies in the West.

Our finding that a longer stay in treatment protected against homelessness at discharge is consistent with

previous studies that have shown that longer stays allow time for obtaining housing before discharge (12) and that it can take on average 3 months to arrange subsidies, even when a Section 8 housing voucher is available (27). Detoxification facilities tend to have limited goals and shorter stays, which may explain why these programs had poorer housing outcomes.

However, longer stays were not associated with achieving independent housing, pointing to the possibly greater availability of dependent housing situations for formerly homeless adults or greater severity of illnesses among those requiring a longer stay. Terminating treatment prematurely led to a higher risk for remaining homeless; however, premature termination was unexpectedly associated with a greater likelihood of obtaining independent housing on discharge rather than dependent housing. Perhaps some of those who left treatment early did so because they had found independent housing. Those who terminated treatment early may also have had less severe clinical conditions, which may have made it easier to obtain independent housing.

It was unexpected that older patients would be more likely than others to remain homeless on discharge, because being age >65 is typically protective against homelessness (28), in part because of access to income supports such as Social Security. Many chronically ill adults ages >55 receive Social Security benefits early through the Social Security Disability program. Older age is, on the other hand, a specific risk factor for chronic homelessness, which could have impeded exit from homelessness, but the TEDS-D data set did not specify chronicity of homelessness (29).

These findings have implications for policy making, pointing to a need for more resources for both dependent and independent housing, especially in regions where affordable housing access is limited. Substance use disorder treatment programs should consider collaborating with existing housing programs or implementing integrated housing services; indeed, it has been shown that increased integration of mental health and housing services is positively correlated with housing outcomes (30). Housing support through grant funding from the Continuum of Care Program is available for nonprofit organizations, state and local governments, and housing agencies. Substance use disorder treatment programs may consider pursuing these funding streams to achieve greater success in housing outcomes.

This study had several limitations. The TEDS-D database captures only individuals receiving services at substance use disorder treatment facilities that are directly federally funded, and these results therefore may not be generalizable to private, nonprofit, or Veterans Affairs programs. Second, limited data were available on the services provided. Some programs may, in fact, have offered housing services, the nature of which remained unknown. Housing outcomes may also be affected by the local availability of low-income housing; federal, state, or local housing subsidies; and

insurance coverage limits on length of stay; however, this information was not documented. Even when adequate housing services were available, patients may not have moved into their new homes at the time of discharge but may have completed the process some time thereafter. Reasons for early treatment termination were not fully described in TEDS-D; therefore, only limited hypotheses can be made about why early termination was associated with obtaining independent housing. In addition, the data did not differentiate between single homeless adults and household heads of homeless families, a distinction that can significantly affect the availability of housing assistance. It is notable that in this very large sample, most observed differences were highly significant, even after adjustment for multiple comparisons. We therefore used effect sizes as measures to identify substantial differences by using published norms. Finally, data on psychiatric comorbid conditions, clinical acuity, and level of disability were not available but are likely important risk factors for remaining homeless at discharge.

CONCLUSIONS

Despite its limitations, this study's findings show that of almost 200,000 homeless adults treated in 2018 in federally funded substance use disorder treatment programs, more than two-thirds had disappointing housing outcomes, especially when compared with outcomes achieved by specialized homelessness service programs that emphasize linkage with housing resources. Administrators and policy makers responsible for such programs may improve outcomes by augmenting their provision of housing services or by developing collaborations with programs that have experience providing effective, evidence-based housing services.

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