

Housing Status Among Formerly Homeless Dually Diagnosed Adults

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Objective: Residential outcomes of homeless adults with severe mental illness and a substance use disorder were studied over 18 months during which participants received integrated dual diagnosis services and housing supports based on a continuum model. **Methods:** Interviews with 158 participants at baseline and at six-, 12-, and 18-month follow-ups assessed housing status, residential history, substance abuse and progress toward recovery, psychiatric symptoms, and quality of life. Complete data were available for 122 participants. If participants lived continuously in high-quality housing with no housing loss or nights of homelessness during the final six months of the study, they were classified as having stable housing. **Results:** Of the 122 participants for whom complete data were available, 64 (52 percent) achieved stable housing. Most participants who achieved stable housing first entered staffed and supervised housing and then moved to independent arrangements by the end of the study. Stable housing during the final evaluation period was associated with lower substance use, greater progress toward substance abuse recovery, and higher quality of life. Final housing status was not predicted by baseline variables but was predicted by progress toward recovery during months 0 to 6 and 6 to 12 and by less severe drug use during months 6 to 12. Participants who abused no illicit drugs during months 6 to 12 were almost three times as likely to achieve stable housing as those who abused illicit drugs. **Conclusions:** Housing stability is strongly mediated by substance abuse and progress toward recovery. Nevertheless, when formerly homeless persons with dual diagnoses are provided integrated dual diagnosis treatment, they can gradually achieve stable housing. (*Psychiatric Services* 48:936–941, 1997)

Persons with mental illness and a co-occurring substance use disorder are strongly predisposed to homelessness and housing instability due to their multiple interacting impairments (1). Substance use by persons with severe mental disorders contributes to housing instability in several ways (2–4). It precipitates psychiatric relapse and thereby contributes to housing loss. It results in

behavioral disturbances, erodes social supports, and leads to disengagement or extrusion from treatment and support services. Use of street drugs leads to poor money management.

Once homeless, those with dual disorders are likely to remain homeless longer than other homeless people (5). Because their needs for treatment and supportive housing are complex, persons with dual disorders

constitute a particularly vulnerable and difficult-to-serve subgroup of the homeless population, whose needs are not met by standard mental health treatments (1,6–8).

Several studies of homeless persons with major mental illness have shown that intensive case management, improved access to housing, and housing support services are effective in increasing time in stable housing but that housing stability is strongly mediated by substance abuse. For example, researchers from the San Diego McKinney study found that participants who reported no alcohol problems and those who reported no problems with other drugs at study entry were 2.04 and 2.66 times more likely, respectively, to maintain consistent community housing than those with problematic alcohol and drug use patterns (9). Similarly, data from the Boston McKinney Project, which evaluated two contrasting housing models, indicated that substance abusers used more inpatient hospital days and were much less likely than nonabusers to remain in stable housing (10). These and other investigators have consistently called for specialized treatment programs for persons with dual diagnoses (11–15).

Recent experimental and quasi-experimental studies of integrated treatment approaches for homeless persons with dual disorders examined highly specialized, heavily controlled residential treatment models in which housing and treatment were tightly bundled (16–18). These studies were hampered by recruitment and retention problems, which the in-

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investigators attributed in large part to the level of structure and control in the study settings. To facilitate engagement and retention over longer service intervals, these researchers recommended a range of residential options flexibly tied to services.

The Washington, D.C., dual diagnosis project used a quasi-experimental design to compare an integrated treatment approach for homeless dually diagnosed adults in inner-city Washington, D.C., with a standard treatment approach (19). The integrated treatment group experienced more days in stable housing, greater improvement of alcohol use disorders, and more progress toward recovery from substance abuse than the comparison group. In contrast to the housing and treatment models for dually diagnosed persons previously studied, the Washington project combined integrated mental health and substance abuse treatment with a housing continuum approach. One goal of the project was to help homeless persons with dual diagnoses attain permanent high-quality housing over time rather than merely to keep them off the streets.

In this paper, we report on 18-month residential outcomes from the Washington, D.C., dual diagnosis project. Our purpose was to study the long-term housing adjustment of a group of homeless adults receiving integrated dual diagnosis services in combination with supportive housing using a continuum model. Based on the literature and our own previous experiences, we assumed that participants would initially exhibit some continued residential instability, but we hypothesized that they would be gradually absorbed into stable housing as their substance abuse and clinical status stabilized.

Methods

Participants

The study was conducted between January 1991 and January 1994. Participants were 158 adults enrolled in the Washington, D.C., dual diagnosis project (20). At intake, participants were literally homeless—on the street or in a shelter—and were diagnosed as having both severe mental illness and a current substance use

disorder. As previously reported (19), because of intentional oversampling, the participants were predominantly women (64 percent). Most were African American (89 percent). The mean $\pm$ SD age at study entry was 36.2 ± 6.9 years. The typical participant was unmarried (98 percent) and had only a high school education (47 percent) or less (47 percent).

A majority of the participants (56 percent) were diagnosed as having schizophrenia or a related psychotic disorder, 41 percent had a severe affective disorder, and 3 percent had another primary diagnosis, usually a severe personality disorder. In addition, all participants had a current substance use disorder. The most common diagnoses were alcohol use disorder (94 percent) and cocaine use disorder (56 percent). The mean $\pm$ SD number of lifetime psychiatric admissions reported was 6.6 ± 7.9 , and the mean number of months of lifetime homelessness reported was 49 ± 60.5 .

Housing program

All 158 participants were assigned to one of two integrated dual disorders treatment teams at Community Connections, a private nonprofit mental health agency located in southeast Washington, D.C., a poor and predominantly African-American area of Washington's inner city. In addition to case management and substance abuse treatment, Community Connections provided housing and residential supports. The housing continuum featured a range of short- and long-term housing options including staffed congregate settings and supported independent apartments (21). Movement within the continuum was fluid rather than linear, which permitted individuals to enter and exit from component housing settings as needed while maintaining continuous involvement with core services.

Staff housing specialists—clinicians with training in housing services—provided support within each residential setting. No requirements existed for fixed periods of abstinence before housing was provided; instead, the substance abuse policy in housing emphasized individualized residential planning. In addition to clients' preferences, their overt behavior and

staff members' concerns for their safety guided housing decisions.

Measures and procedures

Before entering the study, participants gave written informed consent. Co-occurring diagnoses of severe mental illness and a substance use disorder were established using the Structured Clinical Interview for DSM-III-R (22). At baseline and at six, 12, and 18 months after entering the study, participants completed a one-and-a-half-hour structured interview administered by trained research assistants. The baseline version included the Uniform Client Data Inventory (23) to gather demographic information and clinical history, the Personal History Form (PHF) (24) to assess housing history and status, the Quality of Life Interview (QOLI) (25) to assess objective and subjective dimensions of quality of life, the Addiction Severity Index (ASI) (26) to assess seven areas of functioning related to substance abuse, and the Expanded Brief Psychiatric Rating Scale (BPRS) (27) to assess current psychiatric symptoms. The follow-up interviews included the PHF, QOLI, ASI, and BPRS.

Substance abuse status and progress toward recovery were further assessed using clinicians' ratings on the Alcohol Use Scale (AUS), the Drug Use Scale (DUS), and the Substance Abuse Treatment Scale (SATS). Good interrater reliability was established following procedures validated previously (28). The AUS and DUS are 5-point scales based on *DSM-III-R* criteria for severity of the disorder, with 1 indicating abstinence; 2, use without evidence of impairment; 3, abuse; 4, dependence; and 5, severe dependence (29). The SATS (30) is an 8-point scale that indicates progressive movement toward recovery, with 1 or 2 indicating engagement (building a working alliance); 3 or 4, persuasion (increasing motivation by raising awareness of negative consequences of substance abuse); 5 or 6, active treatment (developing the skills needed to achieve and maintain an abstinent lifestyle); and 7 or 8, relapse prevention (maintaining stable recovery).

For each client, clinicians completed bimonthly AUS, DUS, and SATS

Table 1

Housing status during the final evaluation interval (months 12 through 18) of dually diagnosed persons who received integrated treatment and housing support based on a continuum model

Group	N	%
Stable housing	64	41
Independent arrangement	38	24
Dependent arrangement	19	12
With family	7	4
Unstable housing	58	37
Any homelessness	30	19
Unstable arrangement	25	16
Institutionalized	3	2
Missing data	36	23
Total	158	100.0

ratings beginning two months after baseline using all available information pertaining to the client's use of alcohol and drugs and its associated consequences. In assigning ratings, clinicians considered information from multiple sources, including clients' self-reports, results of urine drug tests when available, reports from network members such as family and peers, observations from housing staff, and their own direct observations of the client, including the client's participation in substance abuse treatment during the previous two months.

Housing status was assessed using continuous housing calendars constructed with data from the service agency's management information system and items from the PHF follow-up form. Discrepancies were resolved using clinical records and input from the treating clinicians. The project director (the first author) reviewed the housing calendars with the clinicians and housing specialists and then coded each housing situation as adequate if the client was safe and had assured housing access (for example, by paying rent) or inadequate if the setting was dangerous or if the client lacked assured access (for example, doubled up in public housing or "crashing" with a friend). Arrangements such as living temporarily in a crack house or exchanging sex for shelter were coded inadequate.

With input from the clinicians, the project director also coded each tran-

sition as positive, negative, or neutral. Positive meant that the client made a planned, elective move. Negative meant that the client experienced a housing loss by being forced to move or by formal eviction. Neutral meant that the facility had been closed because of licensing problems or for other administrative reasons.

Because one project goal was to help clients attain permanent, high-quality housing over time, we used the 18-month calendars to code housing status during months 12 to 18 as stable or unstable. The stable category included those who maintained continuous, high-quality housing with no literal homelessness, no inadequate housing, and no negatively coded moves during the final evaluation period. The stable category subsumes three subcategories: persons who consistently lived with family members, those housed in independent apartments, and persons living in dependent settings with on-site staffing.

The unstable category included three subcategories: persons residing in institutional settings at 18 months (jails or long-stay hospitals), those who experienced any literal homelessness between 12 and 18 months, and persons who were unstably housed—that is, those living in inadequate settings or those who had negatively coded moves—even though they avoided returns to homelessness during the final period.

Using a procedure similar to one outlined by Hurlburt and colleagues (9), we also recorded the type of housing and the month in which each participant in the stable category first obtained adequate housing and subsequently remained housed with no further negatively coded moves for the balance of the study period. Thus the coding scheme for housing stability took into consideration both temporal stability, including reasons for movement between settings, and the adequacy of the housing environments themselves.

Results

Complete data on housing for the 18-month study period were available for 122 of the 158 participants assigned to integrated dual diagnosis treatment. Of the 36 participants with in-

complete housing data (23 percent), 14 were lost to follow-up, ten were intermittently lost, and two were known to be deceased. Between-group comparisons revealed no significant baseline differences between those with complete and incomplete housing data on a range of demographic, historical, and clinical factors, including residential history and substance abuse indicators.

Absorption into stable housing

For 68 of the 122 participants with complete data (56 percent), the first transition out of homelessness was into a staffed group residence, primarily to houses operated by Community Connections. Another 37 participants (30 percent) initially entered independent apartment arrangements, and 15 (12 percent) initially moved in with family members. Two participants, by their own choice, did not enter housing in the community during the study period but continued to live in unique shelter arrangements with extensive support services.

As Table 1 shows, 41 percent of the overall sample obtained and maintained stable housing during the 12- to 18-month follow-up period, and 37 percent experienced some continuing residential instability. Complete data were not available for the remaining participants. At the end of the final evaluation period, of those in the stable housing group, 59 percent were living independently, 30 percent were living in dependent settings, and 11 percent were with family members. Of those in the unstable housing group, 52 percent experienced some literal homelessness, and 5 percent were institutionalized. Another 43 percent were unstably housed; they cycled between settings or lived in unsafe arrangements while avoiding a return to literal homelessness. Those who experienced any homelessness during the 12- to 18-month interval spent roughly one-third of the final period on the streets or in a shelter.

In the stable housing group, nearly twice as many persons first became residentially stable in staffed group homes (59 percent) compared with the number who first became stable in independent apartments (28 percent);

for 13 percent the first stable housing arrangement was with family members. Among those who achieved stable housing by the end of the final evaluation period, the mean $\pm$ SD time to stable housing was 8.2 $\pm$ 5.6 months.

Correlates of stable housing

Relationships between stable housing and other outcomes were determined by comparing key clinical and substance abuse indicators as well as quality-of-life ratings for the stable and unstable housing groups at 18 months. Table 2 shows the strong associations between housing stability and improved substance abuse status and quality of life. However, housing stability was not found to be associated with mental health status at 18 months. Participants in the stable housing group were dramatically better off than those in the unstable group with respect to alcohol and drugs, as measured by the AUS and DUS, and to their progress toward recovery, as indicated by the SATS scores. Furthermore, participants in the stable housing group rated their quality of life significantly higher on six of 12 subscales of the QOLI.

Predictors of stable housing

We examined several variables as potential predictors of stable housing. They included five demographic variables, nine psychiatric history and mental health status indicators, six measures of current and lifetime substance abuse, and three variables assessing the extent of recent and lifetime homelessness and institutionalization. None of these 23 baseline variables predicted housing stability during the final evaluation interval.

We also examined indicators of treatment participation and measures of adjustment at six- and 12-month follow-up to identify factors that predicted housing stability. Eleven measures were used from the six- and 12-month follow-ups: five measures of symptoms (BPRS subscales), three measures of substance abuse (AUS, DUS, and SATS), and three measures of living situation (days of stable housing, homelessness, and institutional living as measured by the PHF).

Of the six-month measures, only

Table 2

Mean scores at 18-month follow-up of dually diagnosed participants who did and did not achieve stable housing

Outcome measure	Stable housing (N=64)		Unstable housing (N=58)		t ¹	p
	Mean	SD	Mean	SD		
Clinical symptoms ²						
Affect	2.22	1.21	2.50	1.26	1.23	.221
Thought disorder	2.07	1.37	1.75	.97	1.52	.214
Activation	1.26	.58	1.34	.60	.74	.462
Disorganization	1.28	.76	1.24	.52	.34	.738
Average score	1.94	.97	2.16	1.00	1.19	.237
Substance abuse						
Alcohol Use Scale ³	2.01	1.17	2.48	1.14	2.25	.026
Drug Use Scale ³	1.80	1.22	2.66	.50	3.45	.001
Substance Abuse Treatment Scale ⁴	5.73	1.99	4.35	.69	4.14	.000
Objective quality of life ⁵						
Financial support	.78	.27	.59	.37	3.29	.059
Daily activities	.52	.19	.48	.13	1.18	.242
Living skill problems	1.57	.75	1.71	.70	1.05	.297
Family contact	3.35	1.04	3.51	1.05	.83	.408
Social contact	2.89	.91	2.56	.78	2.18	.032
Subjective quality of life ⁵						
General satisfaction	5.04	1.70	4.43	1.53	2.07	.041
Housing	5.20	1.49	4.70	1.13	2.09	.039
Family relations	5.06	1.54	4.52	1.36	2.05	.043
Social relations	4.90	1.26	4.58	1.11	1.48	.140
Leisure	4.90	1.34	4.27	1.23	2.69	.008
Finances	4.28	1.75	3.41	1.50	2.92	.004
Town	4.69	1.36	4.43	1.13	1.12	.264

¹ Because of missing data, df values range from 110 to 115.

² Measured using the Brief Psychiatric Rating Scale; higher scores indicate more severe symptoms

³ Score range of 1, abstinence, to 5, severe dependence

⁴ Score: 1 or 2, engagement in treatment; 3 or 4, persuasion; 5 or 6, active treatment; and 7 or 8, relapse prevention

⁵ Measured by the Quality of Life Interview; higher scores indicate better quality of life

progress toward substance abuse recovery as measured by SATS (averaged across the two-, four-, and six-month observations) was significantly associated with stable housing at 18 months (a rating of 4.52 $\pm$ 1.43 for the stable housing group and 3.97 $\pm$ 1.28 for the unstable group; $t=2.20$, $df=114$, $p=.030$). Of the 12-month measures, the SATS ratings of recovery again predicted housing stability (5.28 $\pm$ 1.43 for the stable housing group and 4.68 $\pm$ 1.57 for the unstable group; $t=2.16$, $df=115$, $p=.033$). DUS ratings at 12 months were the only additional predictor of housing stability during the final study interval. Those who achieved stable housing showed less severe drug use during the six- to 12-month interval than those in the unstable housing group (a rating of 1.72 $\pm$.98 for the stable group and 2.22 $\pm$ 1.32 for the unstable group; $t=2.11$, $df=84$, $p=.038$).

We used stepwise logistic regression to create a multivariate prediction model of stable housing based on measures at the 12-month follow-up. Only one variable, drug use as measured by the DUS, predicted stable housing ($\chi^2=4.55$, $df=1$, $p=.033$). The participants who were not abusing drugs at six- and 12-month follow-ups were 2.77 times more likely to maintain stable housing in the final study interval than those who continued to abuse.

Discussion

Programs serving homeless persons usually define their goal as reducing or eliminating returns to literal homelessness. Using that standard, the housing continuum model combined with integrated treatment in the Washington, D.C., dual diagnosis project demonstrated considerable success in moving formerly homeless adults with severe mental illness and

a co-occurring substance use disorder into stable housing over an 18-month period. Although some participants continued to experience residential instability, a majority of those for whom data were complete were adequately housed at 18 months, and three-quarters of those with complete data (75 percent) avoided literal homelessness in the final study interval (months 12 to 18).

Because our goal was not merely to reduce days of literal homelessness but to help people obtain and maintain high-quality permanent housing, we also considered whether the housing itself was safe and appropriate, whether continuous access was assured, and whether it enhanced participants' quality of life. A majority of participants for whom data were complete achieved stable housing according to this conservative definition, and, as expected, housing stability was strongly mediated by substance abuse. Higher quality-of-life ratings by those in stable housing at least partly validated the classification scheme used in making judgments of stable housing.

A participant's progress toward recovery from substance abuse during the first evaluation period (baseline to month 6) and the second period (months 6 to 12), as well as recovery from drug abuse, primarily cocaine, during the second period, predicted stable housing. Because the SATS score was highly correlated with the DUS score, the SATS score did not enter the multivariate equation as an independent predictor. These data add to the growing evidence that substance abuse is a primary factor mediating housing stability (2,10,31,32).

The study findings are also remarkable for the factors that did not predict later housing stability—the extent of lifetime homelessness, the severity and duration of previous substance abuse, and psychiatric diagnosis and status. Clinicians treating an individual with a long history of homelessness and substance abuse should not assume that these problems are intractable and unlikely to respond to appropriate treatment efforts. Instead, our findings suggest that cautious optimism is warranted; integrated treatment combined with a range of sup-

ported housing options allowed many long-term substance abusers first to gain control of their drug use and then to escape from homelessness.

Our findings challenge the view that substance abuse and psychiatric status will stabilize if people are simply helped to obtain adequate housing. Participants in the program who were initially provided with adequate housing were unable to maintain stable housing unless they made progress toward recovery from substance abuse. On the other hand, those who made progress in substance abuse treatment were highly likely to achieve stable housing over time.

Many criticisms of the continuum model have been made. Of great concern is the perception that it requires residents to move lock-step through the housing continuum in a linear fashion and that it neglects consumers' stated preferences for independent living arrangements (33). However, the housing continuum model seemed to be quite responsive to the needs of the clients in the Washington, D.C., dual diagnosis project. Participants in the premotivational stage of substance abuse treatment had initial placements in every component of the housing continuum. Many accepted first placements in staffed congregate housing, and they first stabilized in these settings. Others rejected such dependent settings in favor of apartments and generally failed to maintain the placement.

As in the Boston McKinney project (10), initial placements in independent housing seemed to foster substance abuse, which renewed the cycle of extrusion from housing and homelessness. Few of the participants achieved stable housing without at least a brief stay in a supervised setting; hence, rapid placement in independent settings appeared to be ineffective. Nevertheless, it was possible to honor participants' desire for independence over the longer term. Although twice as many people first stabilized in dependent rather than independent settings, this scenario was reversed by the end of the study period, when twice as many participants in the stable housing group resided in independent settings.

Therefore, these results provide a cautionary note about the abandonment of the continuum model in favor of the supported housing approach. Our data indicate that persons with dual diagnoses have phase-specific needs that may be best met through structured and supervised living arrangements offering protection from external as well as internal forces early in the recovery process.

As sweeping reforms are being implemented in connection with virtually all kinds of state and federal entitlement programs, these findings have important policy implications. Policy makers and advocates are debating whether to impose new treatment participation requirements on persons with substance use disorders who apply for income supports and housing assistance dollars. Our data suggest that structured and protective housing arrangements integrated closely with clinical services are helpful for many clients with dual disorders.

The study has several limitations. First, data for about a fifth of the sample (23 percent) were incomplete for the 18-month period, and no data for these program participants could be used in the housing analyses. Although study retention was relatively good, and no baseline differences were found between those who did and did not have complete data, the attrition reduced statistical power. Second, we relied heavily on correlational methods and a nonexperimental design. The continuum model of housing should be tested in a more rigorous design.

Third, the comprehensiveness of the housing continuum and the level of integration with clinical services achieved at Community Connections may be unrealistic for many programs. However, several key elements of the strategies we employed clearly are transferable, such as the use of clinical housing specialists to maximize integration of housing and other supports with treatment. Finally, the findings probably generalize only to homeless persons with dual disorders in the inner city and may be less relevant to other settings. Further study in other settings and with other subgroups is needed.

Conclusions

Among homeless persons with dual disorders, our data show that we cannot predict on the basis of background factors who will achieve stable housing. Rather, progress toward substance abuse recovery seems to be the most important factor associated with achievement of stable housing over time, perhaps especially for those with illicit drug problems such as use of crack cocaine.

This finding suggests that we must try to engage everyone rather than attempting to screen out individuals on the basis of background factors. Access to a range of housing with appropriate supports allowed a majority of participants to stabilize gradually, and the achievement of stable housing was associated with many indicators of success and higher quality of life.

Our data do not provide a rigorous test of the continuum model, because all participants were exposed to the continuum. However, the fact that so many in this subgroup of difficult clients did so well suggests that continuum housing in conjunction with integrated dual diagnosis treatment is helpful. In addition, because it was typical for participants who did well to start in a dependent housing arrangement, some time in protective housing may be important. Experimental comparisons of the continuum model with other strategies for linking housing and services are needed. ♦

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