

# **An Examination of Fulfilled Housing Preferences and Quality of Life among Homeless Persons with Mental Illness and/or Substance Use Disorders**

**Maria O'Connell, PhD**  
**Robert Rosenheck, MD**  
**Wesley Kasprow, PhD**  
**Linda Frisman, PhD**

## **Abstract**

*This study examined the types of housing features considered important to a sample of homeless persons diagnosed with a mental illness and/or substance use disorder and the relationship between the degree to which important features were obtained in subsequent housing and subjective quality of life, clinical and housing outcomes at 3-month and 1-year follow-up periods. After controlling for significant clinical and sociodemographic covariates, results from regression analyses indicate that the degree to which a client's individual housing preferences were realized in dwellings is significantly associated with greater quality of life in the future, but not clinical outcomes or housing tenure.*

---

This study was conducted at the Yale Department of Psychiatry, VA Northeast Program Evaluation Center, 950 Campbell Avenue, West Haven, CT 06516, USA.

Address correspondence to Maria O'Connell, PhD, Instructor, Yale Department of Psychiatry and Yale Program for Recovery and Community Health, 319 Peck Street, Building 6 Suite 1C, New Haven, CT 06513, USA. Phone: +1-203-7647593. Fax: +1-203-7647595. E-mail: maria.oconnell@yale.edu.

Robert Rosenheck, MD, is a professor at the Yale Department of Psychiatry and Yale Department of Epidemiology and Public Health, and director of the VA Northeast Program Evaluation Center, 950 Campbell Ave., West Haven, CT 06516, USA. Phone: +1-203-9373850. Fax: +1-203-9373433. E-mail: robert.rosenheck@yale.edu.

Wesley Kasprow, PhD, is a project director at the Yale Department of Psychiatry and VA Northeast Program Evaluation Center, 950 Campbell Ave., West Haven, CT 06516, USA. Phone: +1-203-9325711. Fax: +1-203-9373433. E-mail: wesley.kasprow@yale.edu.

Linda Frisman, PhD, is a director of research at the Connecticut Department of Mental Health and Addiction Services, Hartford Connecticut, and University of Connecticut Department of Psychology, Storrs, CT, Psychology Building, Storrs Campus, 406 Babbidge Road, Storrs, CT 06269-1020, USA. Phone: +1-860-4186788. Fax: +1-860-4862760. E-mail: Linda.frisman@uconn.edu.

*Journal of Behavioral Health Services & Research*, 2006. © 2006 National Council for Community Behavioral Healthcare.

## Introduction

In several recent reports, including the President's New Freedom Commission of Mental Health, consumer advocates and federally commissioned workgroups have argued for increased opportunities for choice and self-determination, and more client-centered care, within the mental health system.<sup>1-3</sup> The identification of stakeholder preferences is considered an essential component of such a mental health system in that it allows treatment to be tailored to an individual's personal tastes and values.<sup>4,5</sup> From a clinical perspective, research has shown that accommodating consumer preferences may have substantial benefit, including enhanced motivation,<sup>6,7</sup> greater treatment adherence and engagement,<sup>8-10</sup> better treatment outcomes,<sup>6,11,12</sup> and improved quality of life.<sup>13,14</sup>

Several theories have been proposed to explain how the accommodation of consumer preferences may contribute to enhanced outcomes. Amartya Sen, Nobel-prize-winning economist, suggests that the very act of making a choice is empowering as long as there are options from which to choose.<sup>15</sup> Guttman's means-end theory<sup>16</sup> in marketing postulates that people have preferences for certain attributes (i.e., space, décor, money) because they represent a means to the achievement of one's values and goals (i.e., privacy, status, or peace of mind). Thus, preferences do not simply represent likes and dislikes, but may be intimately linked to a deeper value of what is important to an individual. Whereas choice is an act that may reflect one's preferences between a limited number of options, preferences refer to the "relative attractiveness of an object,"<sup>17</sup> given one's own values.

The identification of client preferences is a central feature of "supported" approaches to housing.<sup>18</sup> Supported housing models, also referred to as "housing as housing"<sup>19</sup> or "housing first"<sup>20,21</sup> approaches, involve independent and integrated community housing with flexible individualized support without the requirement for staged supervised housing prior to independent living.<sup>22</sup> A distinguishing characteristic of supported housing programs, as compared to programs that offer more structured residential treatment, is the opportunity to assess and accommodate client preferences about where they want to live and what type of housing they want to live in.<sup>21</sup>

Research on elements of choice and preferences in housing substantiates the view that involving people in the decision-making process can have benefits that reach beyond the home. For example, the amount of choice persons perceive to have in their housing has been linked to more satisfaction with housing, greater residential stability, enhanced psychological well-being, decreased hospitalization, and improved roles in work and social settings.<sup>13,23</sup> This research has largely focused on the degree of perceived choice in the housing process rather than the extent to which the actual acquisition of preferred housing features is related to client outcomes.

Rather than assessing preferences about more detailed housing characteristics in particular, most research examining housing preferences of adults with mental illness has focused on global preferences for independent (as contrasted with supervised) housing.<sup>18,24</sup> Not surprisingly, when asked, the majority of clients prefer to live on their own.<sup>18,24-27</sup> However, in one recent study, despite a clear preference by clients for independent living, clinicians recommended group homes for clients 74% of the time.<sup>27</sup> In practice, because housing options are limited for people who are poor and have mental illness, providers may question the utility of asking people about the types of things they would like in a home, particularly when these attributes may be impossible to obtain. The scope of the questioning may be limited to options that are known to be available or those thought to be appropriate, or may be so broad that little information is revealed about the characteristics most important to the individual.

The present study adds to the existing research on housing preferences in two ways: (1) by examining preferences for detailed housing characteristics rather than global settings and (2) by examining an aspect of choice that is often overlooked in preference studies—whether the fulfillment of individuals' preferences makes a difference in their outcomes. Based on the theory

that a person's preferences reflect an underlying value of importance to the individual, it was hypothesized that obtaining a greater percentage of preferred housing features in subsequent housing would be predictive of higher satisfaction with housing and quality of life, longer residential tenure, and decreased psychiatric and substance abuse problems at 3 months and 1 year after housing entry, regardless of an individual's clinical or demographic profile at baseline.

## Methods

### Sample and procedures

The current study was a secondary analysis of data from the evaluation of the Department of Housing and Urban Development (HUD)–Department of Veterans Affairs (VA) Supported Housing Program (HUD-VASH).<sup>28–30</sup> The HUD-VASH program was established in 1991 by the VA and HUD as a program to assist homeless persons with psychiatric and substance abuse problems in obtaining housing through Section 8 vouchers, housing assistance, and intensive case management. In 19 sites across the country, VA case managers provided assistance in locating and securing Section 8 vouchers and apartments and long-term supportive services to help formerly homeless clients maintain their housing. A modified Assertive Community Treatment (ACT) model was used that encouraged weekly face-to-face contact, linkage to other VA services, including employment and substance abuse counseling, and the delivery of community-based services by case managers who had a maximum caseload size of 25 clients.<sup>29</sup> Retaining the apartment was not contingent on involvement in VA treatment programs, although continued involvement was encouraged.<sup>31</sup>

In addition to being eligible for VA services, criteria for inclusion in the HUD-VASH program were that participants must have been literally homeless at the time of intake for at least 1 month and had a documented mental health or substance abuse problem. From 1991 to 1997, 1,438 persons were enrolled in either an experimental or observational component of the HUD-VASH evaluation. Data concerning housing preferences were collected at the time of enrollment from 792 individuals, of whom 732 were housed at some point in the study. A subsample of persons housed for at least 90 days by the end of the first year after baseline assessment were identified for inclusion in the present analyses ( $N = 523$ ). The 90-day minimum housing criterion was selected because interviews were conducted with the participants on a quarterly basis and a 3-month period was considered an adequate amount of time to gain enough familiarity to a dwelling to comment on its features. The remaining 209 participants were either (a) housed at the time of baseline assessment ( $n = 177$ ) or (b) first housed 1 year or more after the baseline assessment ( $n = 32$ ).

At baseline, participants completed an interview that assessed, among other things, demographic characteristics, childhood history, living situation, psychiatric symptoms, alcohol and drug use, social support, and quality of life. A case manager then assisted each client in obtaining the Section 8 voucher and locating an apartment. Follow-up interviews were conducted every 3 months with the clients as long as they continued in the program for up to 5 years. Follow-up interviews replicated the baseline interview, with the exception of lifetime characteristics and the addition of questions about the actual characteristics of current apartments. The degree to which each client's initial preferences were realized in the homes in which they eventually came to reside was calculated by comparing what clients wanted with what they eventually reported having received—the proportion of desired features actually obtained in each client's apartment. Baseline and follow-up interviews used in the present analysis were conducted between 1991 and 1999.

Participants provided written informed consent to participate and the protocol was approved by the Human Investigations Committees at each medical center. Participants were paid \$20 after each interview.

## Measures

### *Demographic characteristics*

Data were obtained on current sociodemographic characteristics, duration of the current episode of homelessness, and housing status during the 90 days before each interview. Housing status questions documented the number of nights in the previous 90 that the client spent in each of 11 different types of residence. The primary outcome measures were the number of nights spent in an inpatient hospital, homeless, or in an apartment out of the previous 90 nights.

### *Clinical characteristics*

Psychiatric difficulties, alcohol and drug use, and physical health were assessed using specific items and composite scores from the Addiction Severity Index (ASI),<sup>31</sup> specifically, the ASI Alcohol Inventory (ASIA), Drug Inventory (ASID), Medical Inventory (ASIM), Employment Inventory (ASIE), Legal Inventory (ASIL), and Psychiatric Inventory (ASIP). With the exception of the ASIE, higher scores on the ASI subscales indicate more problems with that particular domain. Quality of life was evaluated using selected subscales from the Lehman Quality of Life Interview.<sup>32</sup> Employment was assessed by the number of days employed out of the last 30 days.

Social support was measured by (a) the number of people in nine different categories to whom the participant reported feeling close, (b) an index of the total frequency of contacts with these people, and (c) the average number of types of people who would help with a loan, transportation, or help in an emotional crisis.<sup>33,34</sup>

### **Housing preferences**

Each participant was presented with a list of 17 physical and neighborhood attributes of housing (e.g., close to work, large apartment, allows pets, drug-free neighborhood) during the enrollment interview.<sup>35</sup> Participants were asked to indicate how important each feature was to them on a 3-point Likert scale (0 = not important, 1 = somewhat desirable, 2 = very desirable). During follow-up interviews, participants indicated whether each of the 17 housing features were evident in their apartment using a yes/no format (number of “yes” = total number of housing features obtained, regardless of desirability). Percentage of “preferred housing features” obtained was initially calculated using two formulas at the first follow-up interview after an individual was housed for at least 90 days: (a) the number of desirable features obtained in one’s dwelling (number of items rated “1” or “2” at enrollment that were also evident/yes at follow-up) divided by the total number of desirable features at enrollment (rated “1” or “2”) and (b) the number of highly desired features obtained in one’s dwelling (number of items rated “2” at enrollment that were also evident/yes at follow-up) divided by the total number of highly desired features at enrollment (rated “2”). These two formulas produced highly correlated results; thus it was decided to use the more simplistic assessment of “desirable” versus “not important” (the first formula above).

### **Analysis**

The primary analysis examined the relationship between the proportion of housing preferences that were obtained and various outcomes. However, since participants were not randomly assigned to various levels on this measure, potentially confounding sociodemographic and clinical baseline characteristics were first identified through a correlation analysis. The effect that these significantly correlated sociodemographic and clinical variables had on the dependent variables was minimized by including them as covariates in all subsequent analyses.

**Table 1**

Sociodemographic, housing, clinical, community, and contact characteristics of clients

	Total (N = 523)			
	Mean or n	SD or %	Min	Max
Sociodemographic characteristics				
Mean age	43.67	7.72	22.52	74.64
Male	489	93.5%	1.00	2.00
Race/Ethnicity				
White	241	46.1%		
Black	239	45.7		
Hispanic	28	5.4		
Other	15	2.9%		
Marital status				
Married	23	4.4%		
Remarried	1	.2%		
Widowed	14	2.7%		
Separated	86	16.4%		
Divorced	218	41.7%		
Never married	180	34.4%		
Mean income	423.31	490.92	0.00	5,680.00
Receives public support	281	53.7%		
VA benefits	135	25.8%		
Housing				
Days homeless, past 30 days	26.07	8.65	0.00	30.00
Duration of homeless episode	910.33	1,393.07	0.00	10,050.00
Not currently homeless				
<1 month	10	1.9%		
1-6 months	218	41.7%		
6 months to 1 year	99	18.9%		
1-2 years	68	13.0%		
2 years or more	125	23.9%		
Clinical status				
Any serious psychiatric or substance abuse problem	493	94.3%		
Serious psychiatric disorder	270	51.6%		
Psychiatric Symptom Index (ASI)	.25	.25	.00	.91
Substance/Alcohol abuse				
Intoxicated in past 30 days	129	24.7%		
Days intoxicated in past 30 days	3.28	7.65	.00	30.00
Used drugs in past 30 days	116	22.2%		
Days used drugs in past 30 days	3.35	8.06	.00	30.00
Alcohol Index (ASI)	.16	.21	.00	.96
Drug Index (ASI)	.07	.11	.00	.54
Expenditure on substances, past 30 days	\$142.59	\$417.65	.00	\$5,000.00
Medical problems				
Medical Problem Index (ASI)	.37	.39	.00	1.00
Used VA in past 6 months	280	53.5%		

**Table 1**  
(continued)

	Total (N = 523)			
	Mean or <i>n</i>	SD or %	Min	Max
Thoughts of suicide	42	8%		
Attempted suicide (past 30 days)	4	.8%		
Clinical diagnoses				
Alcohol abuse/dependency	325	62.1%		
Drug abuse/dependency	261	49.9%		
Schizophrenia	43	8.2%		
Other psychosis	33	6.3%		
Bipolar disorder	23	4.4%		
Depressive disorder	183	35%		
PTSD	88	16.8%		
Other anxiety disorder	85	16.3%		
Dually diagnosed	178	34%		
Community adjustment				
Usually employed past 3 years	216	41.3%		
Days worked for pay in past 30 days	2.89	6.74	0	30
Employment index (ASI)	.17	.26	.00	.94
Legal problem index (ASI)	.06	.20	.00	1.00
Social network (people feel close to)	9.97	8.67	.00	44.00
Social Network (contacts)	30.92	31.19	.00	180.00
Social support	7.70	5.25	2.00	31.00
Arrests in past 30 days				
Major crimes	1.11	1.43	.00	7.00
Minor crimes	1.20	1.09	.00	4.00
Mode of first contact				
VA community outreach	216	41.3%		
Referral from non-VA homeless program	49	9.4%		
Referral from inpatient VA program	16	3.1%		
Referral from outpatient VA program	55	10.5%		
Vet center	26	5.0%		
Self-referred	111	21.2%		
Special program for homeless	25	4.8%		
Other	24	4.6%		

Next, the relationship between the percentage of preferred housing features obtained and outcomes was examined at the time of (a) the first interview conducted after the client was housed for at least 90 days and (b) the first interview conducted after each client had been housed for approximately 1 year ( $\pm$  60 days). These analyses relied on a series of multiple regressions in which potentially confounding baseline and demographic features were included as covariates in the first block of variables. To determine the percentage of variance in outcomes accounted for by the percentage of preferred housing features obtained, above and beyond clinical and functional status at follow-up, the second block of variables contained follow-up scores on the ASIP, ASIA,

ASID, ASIM, ASIE, Income, Social Network, and number of days spent in an inpatient setting since baseline. The third block of variables contained the total number of features obtained in one's apartment at the first follow-up interview after being housed for 90 days (regardless of desirability), and the fourth block contained the Percentage of Preferred Housing Features obtained. As 17 outcome variables were assessed, a Bonferroni adjustment of alpha was applied ( $p = .05/17 = .003$ ).

Finally, a survival analysis was conducted predicting subsequent housing tenure as a function of sociodemographic, clinical, and housing characteristics. Cox proportional hazards regression models were used to test the hypothesis that the time an individual spent continuously housed would be greater the more preferred housing attributes were obtained. "Failure" was defined as the first interview that the client was homeless for 5 or more days out of the previous 90 (7.8% of the sample). Observations for clients who were continuously housed at the last observation point were treated as censored observations.

## Results

### Sample characteristics

The average age at baseline was 43.67 (SD = 7.72) years. Participants were primarily male (93.5%,  $n = 487$ ) and unmarried (95.4%,  $n = 499$ ). Altogether, 193 participants had been homeless for at least 1 year before baseline (37%). In terms of ethnicity, 239 (45.7%) participants were

**Table 2**  
Housing features

Housing feature	Client preferences			Housing features obtained
	Not important, $n$ (%)	Somewhat desirable, $n$ (%)	Very desirable, $n$ (%)	Apartment has feature, $n$ (%)
Affordable	15 (2.9)	116 (22.2)	390 (74.6)	495 (95.6)
Near shopping/bus line	13 (2.5)	117 (22.4)	393 (75.1)	497 (95.0)
Compatible landlord	11 (2.1)	135 (25.8)	375 (71.7)	484 (92.5)
In good repair	3 (.6)	107 (20.5)	411 (78.6)	482 (92.2)
Attractive building	19 (3.6)	214 (40.9)	288 (55.1)	480 (91.8)
Private enough	4 (0.8)	201 (38.4)	304 (58.1)	476 (91.0)
Big enough	18 (3.4)	201 (38.4)	304 (58.1)	465 (88.9)
Safe neighborhood	7 (1.3)	129 (24.7)	387 (74.0)	434 (83.0)
Near VA	116 (22.2)	241 (46.1)	166 (31.7)	340 (65.0)
Elevator/First floor	273 (52.2)	140 (26.8)	110 (21.0)	303 (57.9)
Near family/friends	243 (46.5)	185 (35.4)	95 (18.2)	294 (56.2)
Adequate yard	245 (46.8)	195 (37.3)	81 (15.5)	281 (53.7)
Drug-free neighborhood	39 (7.5)	108 (20.7)	376 (71.9)	279 (53.3)
Pets allowed	390 (74.6)	88 (16.8)	43 (8.2)	269 (51.4)
Suburban or rural location	213 (40.7)	185 (35.4)	122 (23.3)	257 (49.1)
Near job	46 (8.8)	93 (17.8)	112 (21.4)	129 (24.7)
Garage	379 (72.5)	94 (18.0)	48 (9.2)	69 (13.3)

African American, 28 (5.4%) were Hispanic, and 51.1% were Caucasian ( $n = 267$ ). Ninety-four percent of the participants had a serious psychiatric or substance abuse problem ( $n = 493$ ) and 76% had been hospitalized at some point for this problem ( $n = 395$ ). Twenty-five percent of participants had an inpatient hospitalization during the 90 days before baseline ( $n = 133$ ). Eighty-seven percent had a history of substance abuse ( $n = 456$ ), and 34% were dually diagnosed ( $n = 178$ ). At the time of the baseline interview, 20% ( $n = 104$ ) of the participants had Social Security benefits and 25.8% ( $n = 135$ ) had VA benefits. The average income was \$423.31 per month ( $SD = 490.92$ ). The average number of days between the baseline interview and the first interview conducted after a participant had been housed for 90 days was 218.64 ( $SD = 77.41$ , range 66 to 365). Complete demographic characteristics are presented in Table 1.

### Housing preferences

The top five features identified by participants as being “very desirable” at baseline were “good repair/clean” ( $n = 411$ , 78.6%), “privacy” ( $n = 392$ , 75%), “near shopping/ bus lines” ( $n = 393$ , 75.1%), “low rent” ( $n = 390$ , 74.6%), and “safe neighborhood” ( $n = 387$ , 74.0%). The features that most participants considered “not important” by the participants were “former neighborhood” ( $n = 402$ , 76.9%), “pets permitted” ( $n = 390$ , 74.6%), and “garage access” ( $n = 379$ , 72.5%). The complete list of participants’ preferences and the number of housing features obtained are presented in Table 2. On average, clients identified 4.89 ( $SD = 3.15$ ) somewhat important features and 7.89 ( $SD = 3.37$ ) very important features in an apartment. At follow-up, an average of 76% ( $SD = 17\%$ ) of features obtained were those that were considered desirable or very desirable by participants at the time of enrollment.

**Table 3**

Multiple regression models of variables predicting percentage of preferred features obtained in housing

Variable ( $df = 13$ )	Percentage of participant-preferred housing features obtained		
	$\beta$	$t$	$p$
Dual diagnosis	-.135	-3.06	.002
Female	.004	0.09	.932
African American	-.100	-2.14	.033
Age	.085	1.87	.063
Baseline income	-.107	-2.40	.017
ASI alcohol inventory	.062	1.23	.220
ASI drug inventory	-.011	-0.218	.828
ASI medical inventory	-.005	-0.103	.918
ASI employment inventory	.056	1.21	.226
ASI psychiatric inventory	-.064	-1.34	.181
Social network	.119	2.61	.009
Number of preferred housing attributes	-.249	-5.78	<.001
Days between baseline interview and first interview where housed for 90 days	-.085	-1.95	.052



## Sociodemographic and clinical characteristics and the attainment of preferred housing features

Multiple regression models showed that clients who obtained a greater proportion of their preferred housing features were less likely to be African American or dually diagnosed, had more social support, less income, and expressed a smaller total number of preferred housing features (Table 3).

### Quality of life

Multiple regression analyses predicting quality of life among this group of formerly homeless clients revealed that after controlling for potentially confounding variables (sociodemographic and baseline characteristics, psychiatric symptoms, alcohol and drug use, income, social network, the total number of housing features obtained, and clinical characteristics at follow-up), the proportion of Preferred Housing features obtained was associated significantly and positively with overall quality of life at the 1 year follow-up period (based on a Bonferroni correction of  $\alpha = .003$ ). These analyses and all covariates included in the models are presented in Table 4.

### Clinical outcomes

A second series of multiple regression analyses was conducted predicting psychiatric symptoms, alcohol and drug use, medical problems, employment, days in an inpatient psychiatric

**Table 4**

Multiple regression analyses predicting quality of life with follow-up outcome variables at first follow-up interview after housed for 90 days and 1 year

Quality of life	Percent of desired features obtained in housing									
	3 Months					1 Year				
	$R^2$	$\Delta R^2$	<i>df</i>	$\beta$	<i>t</i>	$R^2$	$\Delta R^2$	<i>df</i>	$\beta$	<i>t</i>
Safety	.26	.004	1, 465	.10	1.33	.25	.000	1, 292	-.02	-0.14
Health	.40	.002	1, 465	.08	1.10	.39	.005	1, 292	.18	1.62
Social	.38	.000	1, 465	.04	0.51	.35	.002	1, 292	-.10	-0.91
Family	.47	.01**	1, 457	.18	2.82**	.47	.000	1, 289	-.02	-0.16
Leisure	.29	.002	1, 465	.09	1.21	.30	.003	1, 292	.14	1.21
Work	.31	.01	1, 109	-.13	-0.86	.31	.04	1, 62	-.45	-1.77
Finances	.29	.001	1, 465	.04	0.58	.31	.01	1, 292	.20	1.72
Living situation	.35	.01**	1, 466	.21	2.98**	.32	.02**	1, 293	.30	2.86**
Overall quality of life	.54	.01**	1, 465	.17	2.81**	.56	.02***	1, 292	.36	3.94***

Note: The following variables were entered as covariates in the model: dual diagnosis, gender, African-American, age, baseline income, baseline alcohol inventory (ASIA), baseline drug inventory (ASID), baseline medical inventory (ASIM), baseline employment inventory (ASIE), baseline psychiatric inventory (ASIP), baseline social network, baseline quality of life, the number of features desired in housing, time between baseline and the first follow-up interview when participant was housed for 90 days, follow-up ASIP, follow-up ASIA, follow-up ASID, follow-up ASIM, follow-up ASIE, number of days spent in inpatient setting since baseline, follow-up income, follow-up social network, and the total number of positive housing features obtained.

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$ .

hospital, income, and social network at the 3-month and 1-year follow-up assessment periods. Although the percentage of preferred housing characteristics obtained was not found to be related to clinical outcomes, the total number of housing features obtained in general (out of 17) was a significant predictor of social support at the 1-year follow-up, above and beyond the potentially confounding clinical and demographic characteristics included in the above models,  $t(1, 297) = 2.50, p = .01, \beta = .12$ .

### **Housing tenure**

With housing “failure” defined by the first interview after obtaining housing at which a client was homeless five or more days, only 45 clients (7.8%) meet the definition for loss of housing at some point in the study. Of the sample as a whole, 407 (77.8%) were continuously housed throughout the study period. The number of housing features obtained and percentage of preferred housing features obtained were not associated significantly with this measure of housing tenure.

## **Discussion**

This study evaluated the hypothesis that the degree to which client preferences for housing were fulfilled would be a significant predictor of subjective quality of life, and clinical and housing outcomes among a sample of clients with a mental illness and/or substance abuse problem who were receiving supported housing services from the VA. The hypothesis was partially confirmed in that the proportion of preferred characteristics obtained in one’s apartment was associated with greater quality of life at the 1-year follow up interview, even after controlling for variables that have been associated with quality of life outcomes in other research, such as substance use, symptoms, and social support.<sup>36</sup> When asked about their preferences for the 17 positive housing qualities, the participants in this study wanted affordable apartments in good repair, with compatible landlords, located in safe neighborhoods, and with convenient access to transportation systems. The fact that the receipt of *preferred* housing characteristics accounted for significant variance in quality of life, above and beyond the total number of housing characteristics received, suggests that although objective indicators of housing quality are important, quality of life can be further enhanced by the attainment of those housing characteristics that are considered imperative to a *specific individual*. However, the finding that individual demographic characteristics, such as ethnicity or dual diagnosis, are significantly associated with less preferred housing warrants additional investigation.

The significant relationship between realized housing preferences and quality of life is consistent with other research in this area that has shown that having a sense of choice in where you want to live is important for subsequent quality of life.<sup>13,21,37,38</sup> For example, Srebnik et al.<sup>13</sup> found that the amount of perceived choice a person has over their housing was positively related to housing satisfaction, psychological well-being, and housing tenure. Although the present study did not share the finding that the obtainment of preferences in housing was positively related to housing tenure, it is probably because the majority of people in our study maintained successful community living during the period of analysis. If participants in the present study were followed over a greater period of time, greater variability in housing tenure may have been observed. Moreover, both Tsemberis and Eisenberg,<sup>21</sup> Tsemberis et al.,<sup>38</sup> and Rosenheck et al.<sup>29</sup> in their experimental evaluations of supported housing programs found, consistent with our findings, that although supported housing improves community tenure, it is less effective at improving clinical status. Helping people to realize and obtain their preferences may thus not be enough to significantly overcome illness—but people are more satisfied with their circumstances if they are shaped by perceived choice.

## Limitations

A major limitation of this study is the risk of confounding biases since it was impossible to randomly assign clients to different levels of preference fulfillment. To minimize the impact of such biases, potentially confounding clinical and sociodemographic variables were controlled for. However, some important factors that may have mediated quality of life outcomes, such as participation in treatment,<sup>39,40</sup> may not have been measured. Moreover, ceiling effects may have limited the strength of our findings due to a large proportion of participants receiving a high percentage of their preferred housing attributes. Future researchers may want to expand the Likert scale for which housing preferences were rated to allow for more variation in responses.

Because the sample was limited to VA service users who are overwhelmingly male, the results may not be generalizable to other populations. Moreover, since individuals with psychotic disorders or serious mental illness made up a small percentage of the sample, the findings may be most applicable to individuals with depression and substance use disorders. Additionally, since all the participants in this sample received their housing through a Section 8 voucher, they may have obtained housing that was relatively similar in quality with limited variation. Stronger effects might have been seen if clients had been able to choose from a larger range of apartments.

## Implications for Behavioral Health

The present study highlights the importance of assessing consumer preferences for housing and provides an example of a method by which to do so.<sup>35</sup> This method of assessing very specific preferences for housing as contrasted with more global methods may also be applicable in research examining preferences in other areas such as the workplace or treatment settings. Although individuals who are homeless and have a mental illness may feel that the options and choices they face are extremely limited, formal assessment may reveal a range of options they may not have previously recognized. Providing people with a range of concrete options from which to choose may, in itself, enhance the degree to which their care is individualized—something that has been identified as a priority in today's mental health service delivery system.

## References

1. National Council on Disability. *From Privileges to Rights: People Labeled with Psychiatric Disabilities Speak for Themselves*. 2000. Available at: <http://www.ncd.gov/newsroom/publications/privileges.html>. Accessed August 20, 2003.
2. President's New Freedom Commission on Mental Health. *Achieving the Promise: Transforming Mental Health Care in America*. 2003. Available at: <http://www.mentalhealthcommission.gov/reports/FinalReport/toc.html>. Accessed September 22, 2003.
3. *Mental Health: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, and National Institute of Mental Health; 1999.
4. Lenert LA. The reliability and internal consistency of an Internet-capable computer program for measuring utilities. *Quality of Life Research*. 2000;9:811–817.
5. Shumway M, Chouljian TL, Battle CL. Measuring preferences for schizophrenia outcomes with the time tradeoff method. *The Journal of Behavioral Health Services & Research*. 2005;32:14–26.
6. Langer E, Rodin J. The effects of choice and enhanced personal responsibility for the aged: A field experiment in an institutional setting. *Journal of Personality and Social Psychology*. 1976;34:191–198.
7. Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*. 2000;55:68–78.
8. Calsyn RJ, Morse GA, Yonker RD, et al. Client choice of treatment and client outcomes. *Journal of Community Psychology*. 2004;31:339–348.
9. Calsyn RJ, Winter JP, Morse GA. Do consumers who have a choice in treatment have better outcomes? *Community Mental Health Journal*. 2000;36:149–160.
10. Thompson CE, Wankel LM. The effects of perceived activity choice upon frequency of exercise behavior. *Journal of Applied Psychology*. 1980;10:436–443.
11. Kissen B, Platz A, Su W. Selective factors in treatment choice and outcome in alcoholics. In: Mello NK, Mendelson JH, eds. *Recent Advances in Studies of Alcoholism*. Washington, DC: U.S. Government Printing Office; 1971:781–802.

12. Rapp C, Shera W, Kisthardt W. Research strategies for consumer empowerment of people with severe mental illness. *Social Work*. 1993;38:727–735.
13. Srebnik D, Livingston J, Gordon L, et al. Housing choice and community success for individuals with serious and persistent mental illness. *Community Mental Health Journal*. 1995;31:139–152.
14. Wehmeyer ML, Schalock RL. Self-determination and quality of life: Implications for special education services and supports. *Focus on Exceptional Children*. 2001;33:1–16.
15. Sen A. *Development as Freedom*. New York: Anchor Books; 1999.
16. Gutman J. A means–end chain model based on consumer categorization processes. *Journal of Marketing*. 1982;46:60–72.
17. Ajzen I, Fishbein M. *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall, Inc.; 1980.
18. Schutt RK, Goldfinger SM. Housing preferences and perceptions of health and functioning among homeless mentally ill persons. *Psychiatric Services*. 1996;47:381–386.
19. Hopper K, Barow SM. Two genealogies of supported housing and their implications for outcome assessment. *Psychiatric Services*. 2003;54:50–54.
20. Tsemberis S, Asmussen S. From streets to homes: The pathways to housing consumer preference supported housing model. *Alcoholism Treatment Quarterly*. 1999;17:113–131.
21. Tsemberis S, Eisenberg RF. Pathways to housing: Supported housing for street dwelling homeless individuals with psychiatric disabilities. *Psychiatric Services*. 2000;51:487–493.
22. Carling PJ. Housing and supports for persons with mental illness: Emerging approaches to research and practice. *Hospital & Community Psychiatry*. 1993;44:439–449.
23. Chipperfield S, Aubry T. The supportive housing program in Winnipeg. *Psychosocial Rehabilitation Journal*. 1990;13:91–94.
24. Fischer EP, Shumway M, Owen RR. Priorities of consumers, providers, and family members in the treatment of schizophrenia. *Psychiatric Services*. 2002;53:724–729.
25. Holley HL, Hodges P, Jeffers B. Moving psychiatric patients from hospital to community: Views of patients, providers, and families. *Psychiatric Services*. 1998;49:513–517.
26. Minsky S, Riesser G, Duffy M. The eye of the beholder: Housing preference of inpatients and their treatment teams. *Psychiatric Services*. 1995;46:173–176.
27. Shutt RK, Weinstein B, Penk WE. Housing preferences of homeless veterans with dual diagnosis. *Psychiatric Services*. 2005;56:350–352.
28. KasproW WJ, Rosenheck RA, Frisman L, et al. Referral and housing processes in a long-term supported housing program for homeless veterans. *Psychiatric Services*. 2000;51:1017–1023.
29. Rosenheck R, KasproW W, Frisman L, et al. Cost-effectiveness of supported housing for homeless persons with mental illness. *Archives of General Psychiatry*. 2003;60:940–951.
30. Rosenheck R, KasproW W, Frisman L, et al. *Integrating Health Care and Housing Supports from Federal Agencies: An Evaluation of the HUD-VA Supported Housing Program (HUD-VASH)*. West Haven, CT: Northeast Program Evaluation Center; 2002.
31. 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*. 1980;268:26–33.
32. Lehman A. A quality of life interview for the chronically mentally ill. *Evaluation and Program Planning*. 1988;11:51–62.
33. Lam J, Rosenheck R. Social support and service use among homeless persons with serious mental illness. *International Journal of Social Psychiatry*. 1998;45:13–28.
34. Vaux A, Athanassopoulou M. Social support appraisals and network resources. *Journal of Community Psychology*. 1987;15:537–556.
35. Newman SJ, Reschovsky JD, Kaneda K, et al. The effects of independent living on persons with chronic mental illness: An assessment of the Section 8 certificate program. *Milbank Quarterly*. 1994;72:171–198.
36. Lam JA, Rosenheck RA. Correlates of improvements in quality of life among homeless persons with serious mental illness. *Psychiatric Services*. 2000;51:116–118.
37. Gulcur L, Stefancic A, Shinn M, et al. Housing, hospitalization, and cost outcomes for homeless individuals with psychiatric disabilities participating in continuum of care and housing first programmes. *Journal of Community and Applied Social Psychology*. 2003;13:171–186.
38. Tsemberis SJ, Moran L, Shinn M, et al. Consumer preference programs for individuals who are homeless and have psychiatric disabilities: A drop-in center and a supported housing program. *American Journal of Community Psychology*. 2003;32:305–317.
39. Lehman AF, Dixon L, Kernan E, et al. A randomized trial of assertive community treatment for homeless persons with severe mental illness. *Archives of General Psychiatry*. 1997;54:1038–1043.
40. Wasylenki DA, Goering PN, Lemire D, et al. The hostel outreach program: Assertive case management for homeless mentally ill persons. *Year Book of Psychiatry and Applied Mental Health*. 1997;7:251–252.