Housing First and Severe Mental Disorders: The Challenge of Exiting Homelessness

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We examine the long-term housing trajectories of 543 program participants at the Toronto site of the At Home/Chez-Soi project, a randomized controlled trial of a Housing First (HF) intervention for adults with mental disorders. The average follow-up period for our study was 5.5 years. We find that the HF approach, which includes housing subsidies and support services, was strongly associated with rapid transitions to sustained housing (70.4 percent of HF participants vs. 27.9 percent of treatment as usual participants). Mood disorders with psychotic features and primary psychotic disorders were negatively associated with the rapid and sustained housing trajectory, and alcohol use disorders were positively associated with a rapid then declining housing trajectory. We argue that to understand the long-term impacts of housing programs, research needs to better explore comprehensive and personalized care to support individuals with severe mental disorders.

Keywords: Housing First; psychosis; substance use; exiting homelessness; housing trajectory

Most individuals who experience homelessness are rehoused within a few months (Culhane et al. 2007; Lee, Tyler, and Wright 2010), but those with severe mental disorders experience greater difficulties in successfully exiting homelessness (Brown et al. 2017; Patterson et al. 2013). A study conducted by Brown and colleagues (2017) in King County, Washington (United States), on the residential or housing pathways that

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mentally ill individuals followed found that only 13.4 percent were and remained housed over the four-year study period, while 26.8 percent remained continuously homeless; 48.4 percent were intermittently homeless, with at least two episodes of homelessness; and 11.4 percent were temporarily homeless, with a single episode of homelessness lasting three months or fewer. Another recent study by Stergiopoulos and colleagues (Stergiopoulos et al. 2019) in Toronto, Ontario, Canada, demonstrated that Housing First (HF), including rent supplements and mental health support services, was effective over a period of up to six years in improving the housing stability of homeless adults with severe mental illness. The study also demonstrated that those with a higher level of need for mental health support services had fewer days stably housed, particularly in the treatment-as-usual group. This study, however, did not analyze the patterns of exiting homelessness or the housing trajectories of study participants. Here, we expand on these previous studies by analyzing the housing trajectories of homeless single adults with mental illness over an average period of 5.5 years. We examine whether HF and select mental disorders influenced the probability that program participants followed a specific housing trajectory.

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Background

Overview of chronic homelessness and mental illness

The 2019 U.S. Annual Homeless Assessment Report showed that out of 567,715 people who are homeless in a single night, 38.7 percent were women, 18.9 percent were under 18, and 53 percent were white versus 39.8 percent who were African American (U.S. Department of Housing and Urban Development 2020). The composition of the Canadian homeless population is similarly diverse: out of 25,216 people were are homeless in a given night, 36.0 percent were women, up to 30 percent were indigenous, and approximately 13.0 percent were dependents and unaccompanied youth between 13 and 24 years old (Government of Canada 2019). Previous studies have demonstrated that the prevalence of mental disorders varies broadly among homeless populations (Fazel et al. 2008; Hwang et al. 2009). However, such health problems are generally higher when compared to the general population in high-income countries (Fazel, Geddes, and Kushel 2014). For example, the prevalence of personality disorders, psychosis, and post-traumatic stress disorder (PTSD) could range between 2 to 71 percent, 3 to 42 percent, and 38 to 53 percent among homeless populations, respectively; compared to 5 to 10 percent, 1 percent, and 2 to 3 percent, respectively, in the general population. The prevalence of alcohol and drug dependence disorders in homeless individuals ranges from 8 to 58 percent and 5 to 54 percent, respectively; compared to 4 to 16 percent and 2 to 6 percent, respectively, in the general population (Fazel, Geddes, and Kushel 2014).

A prior study in the United States estimated that approximately one in every five individuals who experienced a first homeless episode would remain episodically or chronically homeless (Caton, Wilkins, and Anderson 2007). Research has also highlighted some severe mental disorders, including alcohol and other substances addictions, as strong determinants of chronic homelessness. Severe mental disorders can erode individual ability, social trust, and resource management skills, limiting an individual's capacity for successful homeless exits. Among severe mental disorders, Brown and colleagues (2017) found psychotic disorders and substance use disorders to be associated with intermittent housing and temporary homelessness. Psychosis, referring to conditions that affect an individual's perception of reality, is associated with neurocognitive and social skill deficits and poor social functioning (American Psychiatric Association 2016; Fett et al. 2015; Lemmers-Jansen et al. 2019).

Alcohol and other substance use disorders are well documented in the literature on homelessness (Fischer and Breakey 1991; Fletcher and Reback 2017; Grinman et al. 2010; Jané-Llopis and Matytsina 2006; Kertesz et al. 2009). As a coping mechanism for dealing with other mental disorders (e.g., anxiety, depression), long-term trauma, stress, and harsh conditions of homelessness, individuals often turn to alcohol and drug misuse (Fletcher and Reback 2017; Jané-Llopis and Matytsina 2006; Mersky, Topitzes, and Reynolds 2013). Alcohol and other substance use disorders can also affect an individual's capacity to manage economic resources and social and interpersonal relationships, hindering exits from

homelessness (Brown et al. 2017; Lachaud et al. 2020; Patterson, Moniruzzaman, and Somers 2015; Solari, Walton, and Khadduri, this volume).

Housing First

Programs that promote housing stability are a central component of support for individuals experiencing homelessness and mental illness. Contrary to traditional approaches to housing, which include housing readiness criteria, such as sobriety and adherence to psychiatric treatment, the HF approach promotes immediate access to housing without preconditions, while offering social and mental health support services (Macnaughton et al. 2015; Tsemberis, Gulcur, and Nakae 2004). When compared to traditional approaches to housing, the HF model has been shown to be effective in facilitating both housing stability and treatment retention, and it has been adopted and implemented in the United States, Canada, and several high-income countries in Europe (Kirst et al. 2015; Padgett, Gulcur, and Tsemberis 2006; Stergiopoulos et al. 2015).

Study aims

In this study, we determined the long-term (5.5-year) housing trajectories of participants in the Toronto site of the At Home/Chez Soi (AH/CS) study, a randomized trial of HF for homeless adults with mental illness. We then examined whether an HF intervention and select mental disorders influence the likelihood of following a specific housing trajectory pattern. Our analysis found that HF promotes rapid and sustained housing over a long term. However, participants with severe mental disorders, such as psychosis-related disorders and alcohol and substance use disorders, were more likely to follow an unstable housing trajectory over time.

Data and Methods

Toronto At Home/Chez Soi study

The Toronto site of the AH/CS study was a randomized controlled trial that tested the effectiveness of providing rent supplements and mental health support services compared to treatment as usual to homeless individuals with mental illness in Canada's largest urban center (Goering et al. 2011). The study recruited a total of 575 participants between October 2009 and July 2011. The study followed the participants until March 2017, for an approximately 5.5-year follow-up period. Detailed information on the recruitment and study design has been published elsewhere (Hwang et al. 2012). In brief, the study recruited participants from community agencies, shelters, clinics, and directly from the streets. The inclusion criteria required participants to be at least 18 years old, homeless or precariously housed, diagnosed with a serious mental disorder, and not served by an assertive community treatment or intensive case management program at the time of enrollment.

Prior to randomization, the level of need for mental health services was assessed using an algorithm that included the presence of a psychotic disorder or bipolar affective disorder with psychotic symptoms (based on the Mini International Neuropsychiatric Interview [MINI] 6.0), the level of community functioning (Multnomah Community Ability Scale), the presence of a comorbid substance use disorder, and history of hospitalization and incarceration (Goering et al. 2011; Hwang et al. 2012). Participants were stratified by their level of need for mental health services, with 197 participants (out the 575) having high levels of need (e.g., having all three of the following criteria: [1] having a current psychotic disorder or bipolar disorder based on the MINI; [2] having a low score on the Multnomah Community Ability Scale [MCAS], which indicates at least moderate disability; and [3] at least one of three conditions: two or more hospitalizations for mental illness in any one of the last five years, recent arrest or incarceration, or comorbid substance use based on the MINI). All other participants, 378, were classified as moderate need (MN; Goering et al. 2011; Stergiopoulos et al. 2015). Each group of participants was then randomly assigned to the HF intervention or treatment as usual. Intervention group participants received rent supplements (CAN $600 monthly) and support to access market rent housing in the community. They also received mental health support services based on their level of need: assertive community treatment (HF-ACT) for high-need participants and intensive case management services (HF-ICM) for moderate-need participants.[1] Additionally, the case manager assigned to participants provided regular counseling support, helping them to connect to other local and community services such as employment and volunteer opportunities and accompanying them to appointments. Treatment-as-usual (TAU) participants had access to the existing services for homeless people in the community.

The study collected data on housing stability and on a range of health and other social outcomes every 3, 6, or 12 months. After the first two years of follow-up, which were completed in July 2013 (phase I), the Toronto site continued following participants until March 2017 (phase II), for an average of 5.5 years of follow-up (Stergiopoulos et al. 2019).

Ethics approval

The Toronto AH/CS study received ethics approvals from the Research Ethics Board of St. Michael's Hospital in Toronto, Canada. All study participants provided written informed consent to participate in the AH/CS study. The AH/CS study is registered with the International Standard Randomized Control Trial Number Register (ISRCTN42520374).

Variables

Housing stability. The study staff administered a Residential Time-Line Follow-Back Calendar (RTLFB) questionnaire every three or six months to track the number of days living/sleeping in rented housing accommodation or in any

other housing accommodations. For the purpose of this study, we defined being stably housed as having spent at least 75 percent of accounted-for days in stable accommodations (i.e., the participant had tenancy rights or was expected to remain in the same accommodation for more than six months) during the six months prior to the interviews. Housing data, collected over the average 5.5-year follow-up period, were used to determine housing trajectories (see the analytic methods section). To ensure housing trajectories could be properly examined, we excluded participants who had fewer than three time points of data ($n = 32$), resulting in a final sample of 543 participants for the analysis.

Housing First intervention groups. We included the intervention group as a dichotomized variable, with participants receiving either rent supplement and supportive services (HF) (1) or TAU (0).

Mental and substance use disorders. For this analysis, we considered mental disorders as (1) psychosis-related disorders, namely, mood disorder with psychotic features and psychotic disorder; and (2) alcohol use disorder and other substance use disorders. We also included PTSD, a very common mental disorder among homeless populations; and suicidality, classified as a dichotomized variable, having thoughts about taking their own life (1) or not (0). All mental and substance use disorders and suicidality were identified based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria using the MINI 6.0 and were evaluated at the time of screening for study eligibility (Goering et al. 2011; Sheehan et al. 1998).

Control variables. As control variables, we included age as a continuous variable, gender (male/female), ethno-racial group (white vs nonwhite), lifetime duration of homelessness (fewer than three years vs. three years or more), marital status (currently single vs. not single), and education level (middle/high school, completed high school, and university or higher) (O'Campo et al. 2017; Parpouchi et al. 2016).

Analytic methods

We used group-based trajectory modeling, a finite mixture model, to identify clusters of homeless individuals with similar patterns/trajectories of housing over the average 5.5-year follow-up period (Nagin and Odgers 2010). As a person-oriented method, this technique estimates latent trajectory groups of individuals following the same housing trajectory over time. The shape of the housing trajectories was determined by using an intercept and a variable time-period (for the number of time points with housing data), and we tested different polynomial growth factors (linear, quadratic, and cubic time factors). We used the Bayesian Information Criterion (BIC) to determine the optimal number of trajectory groups.

Afterward, we used multinomial logistic regression models to examine the association between mental and substance use disorders and the identified housing trajectories, estimating relative risk ratios and 95 percent confidence intervals. We adjusted the model for gender, age, education level, ethno-racial group membership, marital status, homelessness lifetime duration, and HF intervention group. On average, we had 4.4 percent of data missing, namely, homelessness lifetime duration (5.5 percent), marital status (4.2 percent), and education (3.5 percent). We used multivariate imputation by chained equations (MICE) to account for the missingness of these predicting factors (White, Royston, and Wood 2011). Based on the average of missing data, we imputed twenty datasets to increase the precision of the imputed values and reduce the Monte Carlo Error (Graham, Olchowski, and Gilreath 2007). The estimates presented and discussed in the current study are those based on the completed data derived from the imputed data models. We conducted all analyses using Stata 15 (StataCorp 2017).

Results

Characteristics of participants

Table 1 depicts the characteristics of study participants. Out of the 543 participants, 68.3 percent were male, the average age was 40.3 years ($SD = 11.7$), and the majority (51.7 percent) had completed high school or a higher education level. Participants largely self-identified as nonwhite (59.3 percent), mainly single (69.5 percent), and 50.6 percent had more than three years of homelessness at the time of study enrollment. Of our participants, 36.7 percent had primary psychotic disorders, while 20.8 percent had mood disorders with psychotic features. Likewise, 28.9 percent reported alcohol use disorder, 38.1 percent had other substance use disorder, and 30.6 percent had moderate or severe suicidality.

As expected for a randomized trial, there were no statistical differences comparing the characteristics of HF versus TAU participants, with the exception of the average age (HF: 39.3 [$SD = 11.4$] vs. 41.4 [$SD = 12.0$], p-value $= .036$).

Housing trajectories

Four patterns or housing trajectory groups emerged, three with a cubic trend and one with a linear trend: a *rapid and sustained* housing trajectory (46.6 percent), an episodic or *rapid then declining* housing trajectory (17.4 percent), a *slow but sustained* housing trajectory (18.7 percent), and a *never moved to housing* trajectory (17.2 percent) (see Figure 1). The rapidity of a trajectory group showed whether the rehousing process occurred during the first year in the project; and the sustainability is seen as staying housed or not. The BIC (for the two-group model $= -2,086.2$; $BIC_3 = -1,991.5$, $BIC_4 = -1,897.9$, and $BIC_5 = -2,003.63$) indicated that the four trajectory groups constitute the best fit model.

TABLE 1
Participants' Characteristics, AH/CS Study Toronto Site

Variables	All		HF		TAU		P-Values
	N	Percent	N	Percent	N	Percent	
Age, mean (SD)[a]	543	40.3 (11.7)	292	39.3 (11.4)	251	41.4 (12.0)	.036
Gender							
Male	371	68.3	194	66.4	177	70.5	
Female	172	31.7	98	33.6	74	29.5	.308
Ethno-racial							
White	221	40.7	114	39	107	42.6	
Non-white	322	59.3	178	61.00	144	57.4	.396
Education (completed high school or higher)							
No	253	48.3	145	50.5	108	45.6	
Yes	271	51.7	142	49.5	129	54.4	.259
Marital status (currently single)							
No	159	30.5	83	29.2	76	32.1	
Yes	362	69.5	201	70.8	161	67.9	.483
Lifetime duration of homelessness							
Less than three years	268	49.4	191	68	152	65.5	
Three years or more	275	50.6	90	32.0	80	34.5	.557
Level of needs							
Moderate needs	358	65.9	200	68.5	158	62.9	
High needs	185	34.1	92	31.5	93	37.1	.174
PTSD	128	23.6	75	25.7	53	21.1	.211
Mood disorder with psychotic features	113	20.8	60	20.5	53	21.1	.871
Psychotic disorder	199	36.7	105	36	94	37.5	.719
Alcohol use disorder	157	28.9	77	26.4	80	31.9	.159
Other substances use disorder	207	38.1	113	38.7	94	37.5	.765
Suicidality	166	30.6	87	29.8	79	31.5	.672

a. T-test of Student.

The average posterior probability for the four-group model was higher than .70, and the odds of correct classification weighted posterior probability was higher than 5, also indicating the model is overall well fitted (Table 2).

Housing trajectory and interventions groups

Figure 2 compares the housing trajectory groups adjusted for both HF and TAU arms. We observed that 70.4 percent of HF participants followed a rapid

FIGURE 1
Housing Trajectories over 5.5 Year Follow-Up, AH/CS Participants, Toronto Site
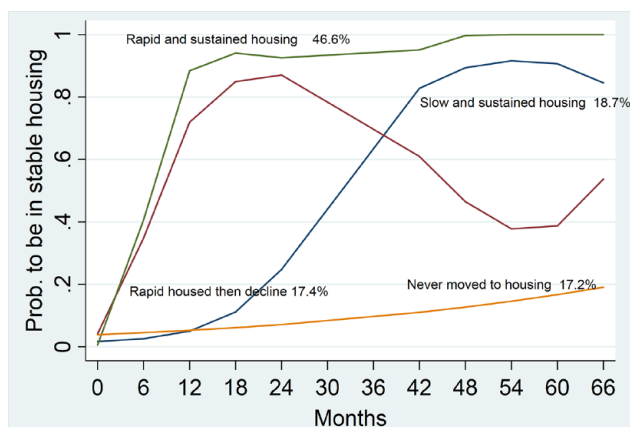

TABLE 2
Housing Trajectory Groups Adjusted from Group-Based Trajectory Modeling

Groups	Intercept	Linear	Quadratic	
Group Membership	N (%)[a]	Group APP	OCC Weighted	Cubic
Rapid and consistent	−5.1731	1.0364	−0.0428	0.0005
Rapid then decline	−3.1450	0.5080	−0.0155	0.0001
Slow but consistent	−4.0769	0.0474	0.0046	−0.0001
Never housed	−3.2153	0.0268		
BIC	−1,897.93			
Group Membership	N (%)[a]	Group APP	OCC Weighted	
Rapid and consistent	75 (13.8)	0.93	62.21	
Rapid then decline	279 (51.4)	0.89	9.30	
Slow, but consistent	90 (16.6)	0.81	18.89	
Never housed	99 (18.2)	0.77	16.41	

NOTE: APP = average posterior probability; OCC = odds of correct classification.
a. Classification postestimation.

and sustained housing trajectory compared to 27.9 percent of TAU participants. Moreover, the HF arm depicted two additional trajectory groups, the *slow but sustained* housing trajectory (14.2 percent), and the *rapid then declining* housing trajectory (15.4 percent). In contrast, the TAU arm showed three additional trajectory groups, among them there were those who *never moved to housing* (26.6 percent) and those with *rapid then declining housing* (16.9 percent).

FIGURE 2
Housing Trajectory over 5.5 Year Follow-Up, AH/CS Participants, Toronto Site by
Intervention
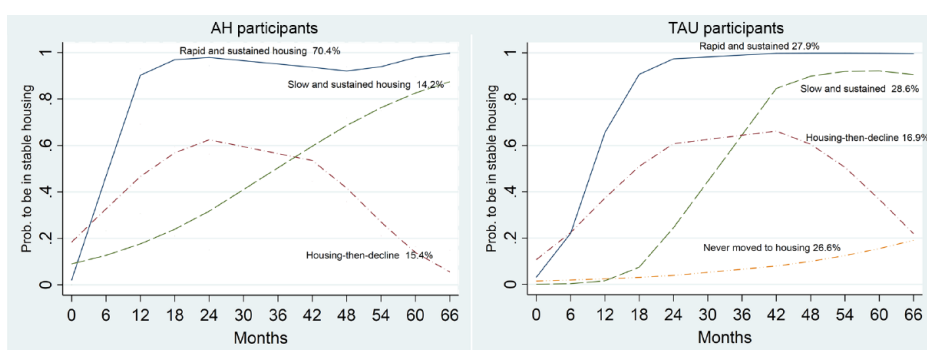
Housing trajectories and mental health

Beyond examining the impact of the intervention, we tested whether specific mental health problems, in particular psychosis-related disorders and substance use disorders, were associated with the housing trajectory groups (Table 3). Participants diagnosed with mood disorder with psychotic features (relative risk ratio [RRR] = 0.5 [95 percent confidence interval (CI) = 0.25, 1.00], p-value = .049) and psychotic disorders (RRR = 0.45 [CI = 0.25, 0.82], p-value = .009) were less likely to be in the better-off housing trajectory group, *rapid and sustained housing*, compared to those who *never moved to housing*. In contrast, we observed that alcohol use disorders and other substances use disorders were not statistically determinant to follow a *rapid and sustained housing* trajectory, compared to those who *never moved to housing*. Moreover, we found that PTSD was positively associated with *rapid and sustained housing*, as well as with *never moved to stable housing* (RRR = 2.31 [CI = 1.1, 4.85], p-value = .026).

Compared to the *never moved to stable housing* group, those with mood disorders with psychotic features and psychotic disorders were less likely to be in the *rapid then declining* housing trajectory group (RRR = 0.45 [CI = 0.19, 1.07], p-value = .071; and RRR = 0.37 [CI = 0.18, 0.79], p-value = .010, respectively), but this was only statistically significant for psychotic disorder; none of them was significant for the third trajectory group, *slow but sustained*.

Unexpectedly, those who followed a *rapid then declining housing* trajectory were more likely to have alcohol use disorder than those who *never moved to stable housing* (RRR = 2.51 [CI = 1.18, 5.34], p-value = .017).

Finally, being a male and self-identified as nonwhite were positively associated with the *rapid and sustained* housing trajectory group, respectively (RRR = 2.11 [CI = 1.11, 3.98], p-value = .022; and RRR = 2.26 [CI = 1.24, 4.12], p-value = .007); while being single (RRR = 0.47 [CI = 0.24, 0.93],

TABLE 3
Multilogistic Analysis of the Association of Housing First and Participants' Characteristics on Housing Trajectory Group Membership (reference group: never housed)

Variables	Rapid and Consistent		Rapid Then Decline		Slow but Consistent	
	RRR	$p < z$	RRR	$p < z$	RRR (CI)	$p < z$
Intervention	9.67 (5.42, 17.23)	**.000**	7.14 (3.53, 14.46)	**.000**	0.99 (0.49, 1.99)	.984
Age	1.00 (0.98, 1.03)	.807	0.98 (0.95, 1.02)	.294	0.98 (0.95, 1)	.096
Male	2.11 (1.11, 3.98)	**.022**	2.48 (1.15, 5.37)	**.021**	2.4 (1.17, 4.88)	**.016**
Ethno-racial (white ref.)						
Nonwhite	2.26 (1.24, 4.12)	**.007**	1.49 (0.72, 3.08)	.284	1.04 (0.53, 2.01)	.917
Education (Completed high school or higher)						
Yes	1.11 (0.63, 1.94)	.722	1.04 (0.52, 2.09)	.908	1.08 (0.57, 2.05)	.815
Marital status (currently single ref.)	0.47 (0.24, 0.93)	**.030**	0.62 (0.27, 1.42)	.258	0.59 (0.28, 1.27)	.180
Lifetime duration of homelessness (<3 years ref.)						
Three years or more	0.96 (0.53, 1.74)	.883	1.68 (0.8, 3.54)	.171	1.52 (0.77, 3)	.226
PTSD	2.31 (1.1, 4.85)	**.026**	1.51 (0.63, 3.64)	.353	1.36 (0.58, 3.15)	.477
Mood disorder with psychotic features	0.5 (0.25, 1.00)	**.049**	0.45 (0.19, 1.07)	.071	0.61 (0.28, 1.34)	.221
Psychotic disorder	0.45 (0.25, 0.82)	**.009**	0.37 (0.18, 0.79)	**.010**	0.62 (0.31, 1.21)	.159
Alcohol use disorder	0.99 (0.52, 1.88)	.977	2.51 (1.18, 5.34)	**.017**	1.37 (0.69, 2.75)	.367
Other substance use disorder	0.92 (0.5, 1.71)	.801	1.22 (0.58, 2.57)	.603	1.22 (0.62, 2.42)	.564
Suicidality	1.62 (0.86, 3.03)	.133	0.74 (0.34, 1.64)	.463	0.78 (0.38, 1.6)	.504
Intercept	0.33 (0.06, 1.82)	.203	0.39 (0.05, 3.29)	.390	1.89 (0.28, 12.8)	.516

NOTE: Reference group: never housed. Bold = significant at 5 percent.

p-value = .030) was negatively associated with the *rapid and sustained* housing trajectory, compared to those who *never moved to stable housing*.

Discussion

This study used a group-based approach to examine the challenge of exiting homelessness within the context of a randomized trial enrolling people with serious mental illnesses. We analyzed how an HF intervention shaped housing trajectories and whether those trajectories were associated with select mental disorders, in particular with psychosis-related and alcohol and substance use disorders. Among participants who received HF, 70.4 percent followed a *rapid and sustained* housing trajectory compared to 27.9 percent of TAU participants. In contrast to HF participants, a group of TAU participants, 26.6 percent, *never moved to stable* housing over the entire average 5.5-year follow-up period.

Our findings expand on prior research demonstrating that HF has positive effects on housing stability for homeless individuals with mental illness

(Stergiopoulos et al. 2019). Our study demonstrates the strong association of HF with a *rapid and sustained* housing trajectory. Moreover, our findings revealed additional housing trajectories of study participants, including a *slow but sustained housing* trajectory and a *rapid then declining housing* trajectory, observed in both HF and TAU participants.

Perhaps more importantly, our findings demonstrate that psychosis-related disorders, in particular mood disorder with psychotic features and primary psychotic disorders, were strongly associated with housing trajectory membership. Those with a *rapid and sustained housing* trajectory were less likely to have psychosis-related disorders compared to those who *never moved to stable housing*, after controlling for the intervention and sociodemographic characteristics. We also observed this pattern for two other housing trajectory groups, *rapid then declining* and *slow but sustained housing* trajectories, although it was not statistically significant for the latter group. These findings suggest that psychosis-related disorders were a major obstacle to exits from homelessness. It is well documented in the literature that psychosis-related disorders can affect day-to-day functioning ability. Severe psychosis symptoms—such as prominent delusions, hallucinations, disorganized thinking and behaviors—can impact social networks and the ability to engage in treatment (Gaebel and Zielasek 2015; Lemmers-Jansen et al. 2019; Pienkos et al. 2019; Scheepers et al. 2018).

Alcohol and substance use disorders did not statistically significantly differentiate between the *rapid and sustained housing* and the *never moved to stable housing* trajectory groups. However, those who were in the *rapid then declining* trajectory group were more likely to have alcohol use disorder, and to a lesser extent other substance use disorder, compared to those who *never moved to stable housing*. This finding suggests that alcohol and other substance use disorders were not directly associated with being continuously homeless over the average 5.5-year follow-up period but could have contributed to the difficulty of remaining stably housed. Alcohol and other substance use disorders appear to play the role of a disruptor or a trigger for housing instability. Prior qualitative studies on newly rehoused homeless individuals reported the misuse of alcohol as a coping strategy to address social isolation, and as a contributor to relapse to homelessness (Brown et al. 2017; Kertesz et al. 2009; Lachaud et al. 2020; Patterson, Moniruzzaman, and Somers 2015).

This study is subject to the limitations of the Toronto AH/CS study, which have been reported elsewhere (Stergiopoulos et al. 2019). The main limitation is that some participants were lost to follow-up or had missing data. However, we used multivariate imputation by chained equations to address missing data and to reduce potential estimation bias. Another specific limitation of this study is that the group-based trajectories are not necessarily pathways invariant over time or across populations, so other homeless populations, such as individuals without severe mental disorders, might have different clusters of housing trajectories (Nagin and Odgers 2010).

The nuanced examination of housing trajectories of homeless individuals with mental illness over several years, presented in this study, has several implications for policy and practice. Given the effect of the intervention, compared to TAU, for rapid and sustained housing, policy-makers should prioritize housing programs

that promote the HF model. This model has proven to be effective for housing homeless individuals with mental illness (Stergiopoulos et al. 2015, 2019) as well as for promoting treatment retention (Parpouchi et al. 2018), which in turn can facilitate sustained housing over time. It is also important to pair housing with mental health support services, to address specific needs associated with mental disorders, as these disorders can interfere directly with functional ability and housing stability. Beyond general mental health services, comprehensive screening and personalized treatment that consider individual characteristics, clinical profile and/or biological markers and cultural background should be explored, in particular for participants experiencing severe mental disorders. Additional services that address alcohol use disorder and recovery need to be considered for those with previous or long-term homeless histories. Investing in programs that pair rapid access to high-quality, appropriate, and inclusive housing and personalized mental health and social support services for homeless individuals with mental illness should be a priority in all areas facing similar challenges.

Note

1. The assertive community treatment (ACT) supports were built on a multidisciplinary team approach to provide the support directly to the participants. These supports included psychiatric and addictions treatment, illness self-management support, peer support, and supported employment. The ACT used a participant/staff ratio of 10:1 and a 24/7 crisis coverage. The intensive case management (ICM) supports provided a similar range of supports. This model is based on an individual case management model in which case managers refer participants to outside agencies for services or health care. It also included accompaniment service to appointments. The ICM used a participant/staff ratio of 20:1 and a 12 hours/7 days crisis coverage. For more details, see Goering et al. (2011).

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