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Disabled on the street: the course of functional impairment in older homeless adults

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INTRODUCTION

Over the past 25 years, the proportion of the homeless population 50 years of age and older has increased rapidly, from 11% in 1990¹ to nearly 50% today.² Older homeless adults experience early onset of age-related conditions relative to the general population, including difficulty performing basic self-care activities that are considered essential for independence, such as bathing and dressing.³ Such difficulty, or “functional impairment,” occurs in 30% of homeless adults in their fifties and early sixties, a prevalence exceeding that of housed adults 20 years older.³ However, it is unknown if functional impairment among older homeless adults is transient or persistent, and thus what types of interventions are needed to address these deficits. If functional impairment persists or worsens in a substantial number of older homeless adults, more units of accessible permanent supportive housing and personal care attendants may be needed. In contrast, if most functional impairment is transient in this population, different types of interventions may be appropriate. We examined the characteristics and persistence of functional impairment in a cohort of homeless adults age 50 and older and identified risk factors for persistent or worsened functional impairment.

METHODS

We conducted a 12-month prospective study of 250 older homeless adults recruited from 8 homeless shelters in Boston, Massachusetts in 2010.³ Eligibility criteria included age 50 years or older, current homelessness, and ability to communicate in English. We interviewed participants in person at baseline and 12 months. The institutional review boards of the participating universities approved the study, and all participants provided written informed consent.

At baseline and 12 months, participants reported if they had difficulty performing 5 Katz activities of daily living (ADLs)⁴ and 6 instrumental activities of daily living (IADLs). We assessed IADLs using a validated instrument developed for use in homeless persons.⁵ We defined persistent ADL impairment as difficulty performing the same number of ADLs at baseline and follow-up, and worsened ADL impairment as difficulty performing an increased number of ADLs from baseline to follow-up. We defined IADL impairment similarly. We used multivariable regression models to identify risk factors for persistent or worsened functional impairment.

RESULTS

Of the 250 participants enrolled at baseline, 204 completed 12-month follow-up assessments (82%). The mean age was 56.0 years and 18% were women (Table).

At baseline, 65 of 204 participants (32%) reported impairment in 1 or more ADLs; the majority of the 65 had difficulty performing 1 or 2 ADLs (n=51). The most common ADL impairment at baseline was transferring (n=54), followed by dressing (n=23) and toileting (n=17).

In 32 of the 65 participants with ADL difficulty at baseline (49%), these difficulties persisted or worsened at follow-up. The ADL impairment most likely to persist from baseline to follow-up was transferring, followed by bathing and dressing (Figure). Among the 32 participants with persistent or worsened ADL impairment, the specific impairments often changed over time: 11 participants (34%) had improvement in the original impairment but onset of 1 or more other impairments.

Of 139 participants who were free of ADL impairment at baseline, 21 (15%) developed new ADL impairment at follow-up. The most commonly acquired new ADL impairment was transferring (n=18), followed by dressing (n=5) and bathing (n=5).

The pattern of results for IADLs was similar to that of ADLs (results not shown).

In multivariable analyses, demographics, medical comorbidity, substance use, and health services use were not associated with persistent or worsened ADL impairment or IADL impairment.

DISCUSSION

In this study, functional impairment improved over time in some older homeless adults, but persisted or worsened in many others. These findings suggest that functional impairment in many older homeless adults is not just a transient problem, but instead a long-term issue in need of long-term solutions. Approaches to managing functional impairment among older homeless adults might include referral to medical respite for individuals with short-term impairments, and for persons with longer-term impairments, promoting access to permanent supportive housing with appropriately tailored environmental adaptations and personal care services. Because few factors measured in standard practice predict whose impairments will persist versus improve, following older homeless patients closely over time will be necessary to understand their functional trajectory and identify appropriate services and solutions.

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Study concept and design: Cimino, Steinman, Mitchell, Bharel, and Brown.

Acquisition of data: Brown.

Analysis and interpretation of data: Cimino, Steinman, Mitchell, Miao, Bharel, Barnhart, Brown.

Drafting of the manuscript: Cimino and Brown.

Critical revision of the manuscript for important intellectual content: Cimino, Steinman, Mitchell, Miao, Bharel, Barnhart, Brown.

Statistical analysis: Brown and Miao.

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Figure. Changes in ADL function after one year among 65 older homeless adults with ADL difficulty at baseline

ADL indicates activity of daily living. Persistent difficulty was defined as an ADL difficulty present at both baseline and follow-up. The total length of each bar represents the number of participants with that ADL difficulty present at baseline.

Table. Baseline Characteristics of 204 Older Homeless Adults

Characteristic	Participants (n=204)
<i>Demographics</i>	
Age, years mean (SD)	56.0 (5.5)
Women, n (%)	37 (18)
Race/ethnicity, n (%)	
African American	82 (40)
White	82 (40)
Latino	21 (10)
Multiracial/Other	19 (9)
Less than high school education, n (%)	52 (26)
<i>Homelessness</i>	
Age at first episode of homelessness, median (IQR)	45 (35, 52)
Lifetime years homelessness, median (IQR)	5 (2, 10)
Homeless for 1 year or longer, n (%)	135 (66)
<i>Health status</i>	
Charlson Comorbidity Index score, n (%)	
0	78 (38)
1-2	76 (38)
≥3	50 (25)
Alcohol use problem, n (%) ^a	36 (18)
Drug use problem, n (%) ^b	35 (17)
<i>Geriatric conditions, n (%)</i>	
Mobility impairment ^c	87 (43)
Cognitive impairment ^d	118 (58)
Depression ^e	79 (39)
Visual impairment ^f	61 (30)
Hearing impairment ^g	65 (32)
Urinary incontinence ^h	99 (49)
<i>Health services use during the prior year</i>	
Number of emergency department visits, n (%)	
0	62 (30)
1-3	88 (43)
≥4	51 (25)
Number of hospitalizations, median (IQR)	0 (0, 2)

^aAlcohol use problem defined as an Addiction Severity Index score of ≥ 0.17 .

^bDrug use problem defined as an Addiction Severity Index score of ≥ 0.10 .

^cMobility impairment defined as self-reported difficulty walking.

^dCognitive impairment defined as a Mini-Mental State Examination score of < 24 .

^eDepression defined as a Patient Health Questionnaire Score ≥ 10 .

^fVisual impairment defined as self-reported difficulty seeing despite wearing corrective lenses.

^gHearing impairment defined as self-reported difficulty hearing.

^hUrinary incontinence defined as an International Consultation on Incontinence Questionnaire

score of ≥ 1 .