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Changes in Self-Rated Physical Health After Moving Into Permanent Supportive Housing

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Abstract

Purpose: Homelessness is associated with poor health outcomes and heightened risk of premature mortality. Permanent supportive housing (PSH) is a key solution for ending homelessness, but there is insufficient evidence of a relationship between PSH and improvements in physical health. Self-rated health—a consistent predictor of mortality—is a meaningful approach to understanding health improvements in PSH.

Design: Longitudinal, observational design with interviews at baseline, 3-months, 6-months, and 12-months (with 91% retention at 12-months).

Setting: Permanent supportive housing in Los Angeles, CA.

Subjects: Four hundred twenty-one adults moving into PSH (baseline interview prior to/within 5 days of housing).

Measures: Three self-rated health assessments: general health status, and limitations to physical and social activity because of health problems.

Results: Generalized Estimating Equations (controlling for demographics and important health covariates; $n = 420$) found self-rated general health status improved between baseline and 3-months (coef: 0.13; 95% confidence interval [CI]: 0.02-0.24) and persisted at 12-months (coef: 0.16; 95% CI: 0.05-0.27). Improvements in limitations to physical or social activity because of health problems started at 6-months posthousing (physical: coef: 0.25; 95% CI: 0.12-0.39; social: coef: 0.18; 95% CI: 0.05-0.32) and persisted through 12-months (physical: coef: 0.14; 95% CI: 0.01-0.27; social: coef: 0.16; 95% CI: 0.02-0.29).

Conclusions: Despite limitations associated with observational study design, these findings provide further evidence that PSH may improve health among those with homelessness histories.

Keywords

self-rated health, permanent supportive housing, health limitations

Purpose

Persons with homelessness histories have increased rates of physical and mental health conditions and are at risk for premature mortality.[1,2] Permanent supportive housing (PSH; permanent housing with tailored services) is recognized as a key solution for ending homelessness.[3] A recent report by the National Academies of Sciences found insufficient evidence that PSH improves health outcomes[4]; however, the report's authors also state this conclusion is due to a lack of randomized controlled trials, and, despite the lack of concrete evidence, assert it is still logical to hypothesize that "housing in general improves health." Extant research on health outcomes in PSH has primarily identified reductions in health-care expenditures and/or use of emergency/inpatient hospital services.[5-7]

Expanding PSH research to include self-reported health outcomes may be useful both because it mirrors key aspects of a patient-centered care approach[8] and because self-rated health has been identified as a robust predictor of mortality in the general population.[9] This brief report presents findings on changes in self-rated health—including general health status and perceived limitations related to physical health—when persons move from homelessness into PSH among a sample of adults in Los Angeles, CA.

Methods

Participants were enrolled as part of an observational study that focused on HIV risk in PSH, moved into PSH in the Los Angeles (LA) area on August 2014 to January 2016, and were

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Table 1. Change in Self-Rated Health Status Over First Year Living in PSH.[a]

	Self-Rated General Health Status	Limits to Physical Activity Because of Health	Limits to Social Activity Because of Health
Health outcomes over time			
Time	Mean (SD)		
Baseline	3.42 (1.23)	3.20 (1.20)	3.29 (1.22)
3 month	3.55 (1.15)	3.28 (1.31)	3.34 (1.35)
6 month	3.47 (1.14)	3.43 (1.31)	3.47 (1.27)
12 month	3.58 (1.20)	3.36 (1.32)	3.49 (1.26)
Generalized Estimating Equation results			
Time (baseline is omitted category)	Coef (95% CI)		
3 month	**0.13 (0.02 to 0.24)**	0.06 (−0.07 to 0.19)	0.03 (−0.10 to 0.17)
6 month	0.07 (−.04 to 0.17)	**0.25 (0.12 to 0.39)**	**0.18 (0.05 to 0.32)**
12 month	**0.16 (0.05 to 0.27)**	**0.14 (0.01 to 0.27)**	**0.16 (0.02 to 0.29)**
Age	0.01 (−0.01 to 0.01)	**−0.01 (−0.02 to 0.01)**	**0.02 (0.01 to 0.03)**
Female	−0.08 (−0.27 to 0.10)	**−0.30 (−0.49 to −0.11)**	−0.03 (−0.21 to 0.15)
High school education	**0.30 (0.13 to 0.47)**	0.08 (−0.11 to 0.27)	0.01 (−0.16 to 0.19)
Black	**−0.25 (−0.44 to −0.55)**	−0.11 (−0.31 to 0.09)	−0.18 (−0.37 to 0.01)
Latino/Hispanic	−0.24 (−0.51 to 0.03)	0.04 (−0.25 to 0.32)	−0.21 (−0.48 to 0.07)
Another race/ethnicity	−0.04 (−0.26 to 0.19)	−0.08 (−0.32 to 0.17)	−0.17 (−0.40 to 0.07)
Unmet need for medical care	**−0.16 (−0.32 to −0.01)**	**−0.23 (−0.42 to −0.04)**	−0.16 (−0.35 to 0.03)
Unmet need for mental health care	**−0.27 (−0.44 to −0.10)**	**−0.21 (−0.21 to −0.01)**	−0.14 (−0.35 to 0.06)
Number of chronic health conditions	**−0.11 (−0.13 to −0.08)**	**−0.11 (−0.14 to −0.08)**	**−0.14 (−0.16 to −0.11)**

Abbreviations: PSH, permanent supportive housing.
[a]n = 420.
Bold indicates $p < 0.05$.

recruited in partnership with 26 housing providers. Permanent supportive housing placements in LA County occur with the aid of a housing or social service agency staff member and generally involve utilization of the Vulnerability Index Service Prioritization Decision Assistance Tool, which prioritizes the most vulnerable in terms of health status. Eligibility criteria for this study included: 39 years+, spoke English/Spanish, and were not actively parenting minor children (age/nonparenting requirements were implemented to minimize HIV risk variation in the HIV-focused parent study). Any person who met the above criteria and was moving into housing facilitated by one of the 26 agency partners during study recruitment was eligible for this study and was referred by agency staff or recruited directly by study staff during move-in-related events. Participants provided written informed consent and each interview (1-1.5 hours) was administered by trained study staff; participants received $20 at baseline (incentives increased by $5 at each subsequent time point). At baseline (prior to or within 5 days of move-in), 421 persons were enrolled, 405 (96.2%) completed 3-month post-move-in interviews, 400 (95%) completed at 6-months, and 383 (91%) completed at 12-months. Study procedures were approved by the institutional review board of the University of Southern California (approval #: UP-14-00049).

Demographic characteristics included age, gender, education, and race/ethnicity. Participants identified unmet need for physical and mental health care by listing services they needed, but had not received, within the previous 3 months (response options adapted from National Survey of Homeless Assistance Providers and Clients).[10] Respondents identified chronic physical/mental health conditions with which they had ever been diagnosed with response options informed by previous research[11]; a sum score indicated the total number of conditions. A single item asked people to self-rate their general health from very poor to excellent.[12] Participants answered 2 items rating the extent to which physical health problems limited physical and social activity (past month; from "not at all," to "could not do physical/social activities").[13] All 3 health outcomes are continuous scores and standardized such that higher scores = better health. Single-item ratings of health have demonstrated good reproducibility, reliability, and validity in previous research.[14]

Generalized Estimating Equations conducted in Stata, version 14, assessed statistically significant changes over time in self-rated health outcomes controlling for demographics, unmet need for medical/mental health care, and chronic health conditions. All available data points were included (data from respondents who provided information on all variables for at least one of the interviews were modeled; n = 420).

Results

Self-rated general health status improved after PSH move-in (Table 1), with statistically significant differences between baseline and 3-months and baseline and 12-months. Improvements in limitations to physical and social activity because of health only demonstrated statistical significance beginning at 6-months post-housing and persisted at 12-months (as compared to baseline). Older participants had more limitations to physical activity and

fewer limitations to social activity, and females had more physical activity limitations. Those with more education rated their health more favorably, while black respondents generally rated their health less favorably. Having more chronic health conditions was associated with poorer health ratings. Unmet physical/mental health needs were associated with both decreased general health ratings and increased physical activity limitations.

Discussion

This study utilized an observational rather than experimental design, leaving us unable to definitively conclude that changes in health outcomes are specifically related to housing, as opposed to other factors. However, these results describe significant improvements in self-reported health when participants moved from homelessness into PSH, and this improvement appears to persist across the first year of living in housing. Particularly given that extant research identifies a strong association between self-rated health and mortality[9], these findings suggest promising improvements in overall health among persons with homelessness histories now living in PSH. These findings also identify improvements in limitations to physical and social activities, though these improvements first appear only after 6-months—as opposed to general health changes, which start at 3-months—suggesting there may be a latency period prior to functional improvement within PSH.

So What?

What is Already Known on This Topic?

Homelessness is associated with poor health outcomes and heightened risk of premature mortality, and while permanent supportive housing (PSH) is a key solution for ending homelessness, there is a need for further evidence about the relationship between PSH and improvements in physical health.

What Does This Article Add?

These findings support the hypothesis that PSH may improve health, as the authors identify self-rated general health status improvements within the first 3 months of moving into PSH, and improvements in limitations to physical or social activity that begin after 6 months in PSH.

What are the Implications for Health Promotion Practice or Research?

This study supports the need to expand PSH programs as a way to improve the health of persons who have experienced homelessness, as well as emphasizes the need for access to tailored, intensive health services within PSH.

Other correlates of poor self-reported health in this study included unmet needs for physical/mental health care and increased chronic health conditions. While not surprising, these findings underscore the importance of thorough health assessments and access to wraparound services within PSH, particularly services tailored to persons with many chronic health conditions. Provision of services and intensive case management to encourage uptake of these services may help ensure all PSH residents experience health improvements. That black residents were less likely to report improvements in their health—and residents with more education were more likely to report improvements—suggest gaps in services and programming that must be addressed to adequately promote health equity[4].

These findings are limited by the lack of a control group within this observational study design; as such, we cannot make conclusions about the specific impact of housing, as opposed to other factors, on these health outcomes. The study is further limited by the dense, urban setting of Los Angeles, the specific age and parenting sample restrictions, and the fact that housing placements involve pre-existing vulnerability criteria, all of which restrict the generalizability of these findings beyond similar populations entering PSH.

Declaration of Conflicting Interests

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