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Permanent Supportive Housing: Addressing Homelessness and Health Disparities?

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Abstract

Permanent supportive housing (PSH) is an intervention to address long-term homelessness. Evidence has resulted in a shift in US policy toward using PSH rather than shelters and transitional housing.

Despite recognizing that individuals transitioning from homelessness to PSH experience a high burden of disease and health disparities, public health research has not considered whether and how PSH improves physical health outcomes.

Based on diverse areas of research, we argue that in addition to improved access to quality health care, social determinants of health (including housing itself, neighborhood characteristics, and built environment) affect health outcomes. We identify implications for practice and research, and conclude that federal and local efforts to end long-term homelessness can interact with concurrent efforts to build healthy communities

Long-Term Homelessness is a significant determinant of poor health. Lengthy exposure to weather, infections, drugs, and violence, coupled with limited access to ongoing health care, is associated with a high incidence of acute and chronic health problems and premature mortality.^{1,2} Launched in 1985 through pilot programs funded by the Robert Wood Johnson Foundation and the Pew Charitable Trust, Health Care for the Homeless programs now exist in cities throughout the United States and are designed to address the significant disease burden of this vulnerable population. ^{3,4} In addition, efforts to address the rise of homelessness during the past four decades have resulted in the recognition that housing is an important part of health care service delivery for persons who have experienced homelessness,⁵ and is cost effective^{6–8} and consistent with basic human rights.⁹ These factors have contributed to a remarkable shift in US policy toward addressing long-term homelessness through permanent supportive housing (PSH) rather than relying on shelters and transitional housing.¹⁰

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Contributors

B. F. Henwood, L. J. Cabassa, and C.M. Craig jointly conceptualized the topic and outline for this article. B. F. Henwood originally drafted the article with input from L. J. Cabassa and C. M. Craig. D. K. Padgett critically reviewed and provided feedback on the article. All authors approved the final article.

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PSH denotes programs that provide access to affordable community-based housing along with flexible support services intended to meet a broad array of health and psychosocial needs.¹¹ Typically, housing can be a congregate residence with services provided on site (i.e., single-site model)¹² or an apartment rented from a private landlord with services provided by mobile community treatment teams (i.e., scatter site).¹³ Today, there are nearly 240 000 PSH units across the country, a figure that has increased by an average of 12 000 units annually since 2006.¹⁴

Missing from the public health literature is evidence on whether and how PSH improves physical health outcomes. Instead, research on PSH has focused on residential stability and behavioral health outcomes.¹⁵ This focus is not surprising given that PSH predominantly serves individuals with serious mental illness (SMI) and substance abuse problems who represent a disproportionate number of those who are long-term homeless.^{1,16} Yet the omission of physical health outcomes is particularly problematic, because in addition to homelessness, significantly higher morbidity and mortality rates exist among people with SMI.¹⁷ Compared with the general population, people with SMI die at a younger age largely because of preventable medical conditions (e.g., diabetes, cardiovascular disease), suboptimal medical care, elevated rates of cardiovascular risk factors (e.g., smoking, lack of physical activity), and the uncontrolled or unmanaged cardiometabolic side effects of antipsychotic medications.¹⁸ Those entering PSH carry a significant disease burden based on multiple and significant risk categories (i.e., homeless and SMI) that exacerbate known health disparities.¹⁹

As a first step to considering whether PSH improves physical health outcomes and has the potential to reduce health disparities, we examine how PSH could affect physical health conditions and disease burden. Drawing from distinct and diverse areas of research, we consider different pathways through which PSH could affect health outcomes, namely, through health care and health interventions, through the provision of housing itself, and through the neighborhood and built environment in which it is located. Findings can be used to guide public health research and action.

HEALTH CARE AND HEALTH INTERVENTIONS

Improved access to quality medical care in PSH is a clear pathway to addressing health outcomes. The delivery of health services connected to PSH, however, has traditionally involved psychiatric care without the integration of physical health care. Whether services are located on site or delivered through mobile community treatment providers, professional resources and funding have primarily come from the public mental health system.²⁰

As the need for holistic care has become increasingly apparent, two dominant approaches to integrating physical and mental health care have emerged: embedding mental health services in primary care settings²¹ and embedding medical care in mental health services.²² The latter approach leverages existing community mental health services already connected to the majority of PSH programs. The articulation of such models has begun to emerge within the literature on PSH.^{5,23,24} For example, a program that provided scatter-site housing partnered with a local academic medical center to include a primary care physician as a member of a multidisciplinary community treatment team, which in addition to providing direct care, fostered increased awareness of physical health comorbidities among its mental health practitioners. ^{23,24} This enabled relatively high rates of documentation of several health care quality indicators, suggesting further development and testing of this integrated model.²⁵

A variety of integrated models are also being developed and evaluated through governmentfunded demonstration projects, such as those supported by the Substance Abuse and Mental

Health Services Administration and the Centers for Medicare & Medicaid Services.²⁶ Although some of these models may be incorporated in PSH, unique challenges may emerge when housing and health service providers overlap or attempt to coordinate care.²⁷ Addressing such challenges will be critical because the availability of PSH is growing to include those who are most vulnerable and medically frail, regardless of mental health diagnosis.

Although PSH has been identified as a viable locus of integrated health care,⁵ alternatives include using health care navigators to help link tenants to already existing health care services. Health care manager programs have been shown to increase the engagement in preventive primary care (e.g., screenings, vaccinations, physical examinations) and improve the quality of cardiometabolic care among adults with SMI.²⁸ Through the inclusion of either physical health services or more effective care coordination mechanisms, PSH may be uniquely suited to realize the concept of the person-centered medical home for those who have experienced homelessness.²³

In addition to improving access to quality health care, PSH can also serve as a venue for health promotion interventions. Lifestyle interventions that focus on weight loss and management, improved nutrition, and physical activity show great promise in helping people with SMI reduce their risk of cardiovascular disease and other chronic medical conditions. ^{29–31} A recent study found that PSH tenants would welcome lifestyle interventions, particularly if they are led by peers, that would help them develop skills to change their eating habits and navigate food environments, incorporate opportunities to participate in physical activities, and employ experiential teaching methods (e.g., cooking and shopping demonstrations) to support health behavior change.³² Interventions such as the Stanford Chronic Disease Self-Management Program,³³ perhaps the most-studied self-management program in the United States,³⁴ can be implemented in conjunction with PSH.³⁵ This peer-led model has been previously modified for use with individuals with SMI.³⁶

PSH provides an ideal service platform for reducing health disparities because it represents a critical point of services for many people with SMI and chronic medical conditions, helps bring existing health care and health promotion interventions closer into the community, and fits within a mission to improve wellness and recovery among this population.³⁷ Further research is needed to establish the effectiveness and sustainability of these health care and health interventions in PSH.

HOUSING

If homelessness is a determinant of poor health, then having housing should improve one's health through reduced exposure to the elements, infections, and violence. It should also confer a sense of security and stability missing from life on the streets or in shelters. Although it is unclear whether the benefits of housing can buffer the negative impact of cumulative adversity, including high rates of trauma documented over the life course of people who experience long-term homelessness, ³⁸ permanent housing can at least reduce stress associated with the ongoing concern about safety experienced while homeless. Although research has identified psychological benefits of having a home that increases "ontological security,"^{39(p1925)} physical health benefits may also result from decreased cortisol levels.⁴⁰

Housing should optimally provide a foundation for health (a bed, refrigerator, heat, electricity), and the physical space needed to engage in healthy behaviors. For example, adequate housing means having a convenient and safe place to store medication, including insulin that requires refrigeration. It also means that people can more easily buy, store, and

prepare food that is affordable and of their choosing rather than rely on food pantries, soup kitchens, and prepared foods that have contributed to the hunger-obesity paradox among homeless populations.⁴¹ Having a home makes it logistically possible to hang a calendar, use an alarm clock, perform daily exercise, tend to personal hygiene, and more easily keep track of medical appointments.

The assumption that housing improves health is supported by existing research. Research has shown that poor housing quality is associated with morbidity related to infectious and chronic diseases, injuries, poor nutrition, asthma, neurologic damage, and mental disorders.⁴² Additionally, living in crowded conditions can exacerbate poor health and increase the likelihood of infectious diseases, such as tuberculosis.

What is less clear, however, is how transitioning from homelessness to housing affects health-related perceptions and behaviors. ³⁵ Whether persons in PSH make healthier lifestyle choices remains to be seen, and it remains unclear what interventions and additional supports may be required to enable such choices (e.g., cooking classes, budgeting skills training, etc). Access to housing may result in a more sedentary lifestyle, especially given concerns that people tend to remain isolated in housing because of past traumas and stigma from having lived on the streets.⁴³ Food insecurity experienced while homeless may lead to more frequent overeating when food can be stored and is more readily available,⁴¹ and people may lack the skills to prepare healthy foods. Such factors may increase the already elevated risk of cardiovascular disease in a population that has experienced homelessness and SMI, and require lifestyle interventions, as previously noted, to be specifically tailored to the needs of this population. Clearly, permanent housing could positively influence the health of those who have experienced homelessness, yet negative influences may also exist depending on the condition of the housing and lifestyle choices that new tenants adopt. This leads to a third, and related, pathway to health outcomes.

NEIGHBORHOOD AND THE BUILT ENVIRONMENT

When considering the effects of housing on health, research suggests that location matters. One of the limitations of research on PSH, however, is that it often overlooks the impact of place and environment.⁴⁴ Limited research regarding location has focused on how PSH affects property values (they increase)⁴⁵ and crime rates (they do not change).⁴⁶

Public health researchers have identified the mechanisms by which community characteristics influence health. The built environment, which is understood to encompass a range of physical and social elements that constitute the structure of a community, has been a focus.^{47,48} For example, assessments of "walkability" have shown that neighborhood factors such as residential density, land-use mix including the amount of retail, residential, and entertainment areas, and the connectivity of street networks are associated with physical activity and level of obesity.^{49–51} Whether these associations apply to those living in PSH may be dependent on mediating factors of community integration, stigma, and discrimination. ⁵²

Overall paucity of resources in neighborhoods of lower socioeconomic status, or "neighborhood deprivation," has also been shown to impede engagement in health behaviors.^{53,54} Some clear examples include limited access to affordable healthy food and fewer areas for recreation and safe physical activity, which contribute to health disparities and increased chronic disease burden in these underserved communities.^{55,56} PSH is disproportionately located in these communities.⁵⁷ with concentrated disadvantages.⁵⁸ Even when resources are available, concerns about crime can impede physical activity,⁵⁹ and social norms may reinforce inactivity, smoking rates, substance use, and poor diet^{60,61}—familiar habits from time spent homeless. The communities into which PSH tenants move

may influence lifestyle choices, and hence, health outcomes, yet there has been no research to date that considers aspects of the neighborhood or built environment with regard to PSH.

DEVELOPING AN AGENDA

Advancing planning and research on physical health outcomes in conjunction with efforts to end homelessness through PSH can occur through consideration of the roles of health care, health promotion, housing quality, and characteristics of the neighborhood and the built environment. To develop a roadmap for future efforts, however, priorities must be made. Recognizing housing as a critical social determinant of health, for example, leads to obvious policy questions about whether and how collaboration will occur between health care and housing systems at the level of service provision and in coordinated funding. This raises further questions about whether health care dollars will be spent on housing, and if so who will be "prescribed" this treatment. Will the provision of housing be rationed only for those whose disease burden would otherwise result in expensive care or should housing be part of universal coverage? Such conversations have rarely been made explicit, yet are close to the surface when considering the differential health impact of housing insecurity and neighborhood deprivation.

Although these larger structural issues may best explain the causes of health disparities and long-term homelessness, more proximal goals may better serve the development of a research agenda. The Patient Protection and Affordable Care Act has made equity in health care delivery the most apparent focus. PSH programs have been recognized as critical partners in some state health home initiatives⁶² and could serve as the basis for patientcentered medical homes for persons with SMI.⁶³ Yet as models of integrated care are being developed within the context of PSH, there are important considerations that have not yet been articulated. For example, research that focuses on how universal design (housing that can be modified depending on residents' needs) can help people successfully age in place can be applied to aging tenants of PSH who already have rates of disability nearing 80%.¹⁴ It should be noted that given the significant disease burden carried by those with histories of long-term homelessness, an important outcome to track can be the number of people who die with dignity in their own home or with access to end-of-life care. Similarly, although active-living research has shown that the built environment can affect health and lifestyle choices differently based on race/ethnicity, gender, and resources,⁶⁴ researchers can empirically investigate whether stigma, discrimination, and mental health symptoms may also have a differential impact for persons living in PSH that impedes increased physical activity and healthy diet.

Research that considers neighborhood effects on PSH residents would need to consider whether the PSH is single site or scatter site, the 2 predominant models. Research on the scatter-site approach, which places people in different locations, would have to account for variability not present in single-site. For new development of single-site PSH buildings, a health impact assessment could inform where such projects are located and the architectural design of those projects.⁶⁵ Conducting research that considers neighborhood effects will require increasingly sophisticated mixed-method designs and multilevel modeling⁶⁶ to develop concrete ramifications for public policy that is sensitive to the connection between housing, the built environment, and health.⁶⁷

Regardless of their location model, PSH programs could contribute to a healthier community and environment through social action and community advocacy. PSH programs and tenants could become valuable partners in healthy communities programs sponsored by the Centers for Disease Control and Prevention. This would require a strengths-based approach when working with PSH tenants that has not been consistently articulated within the literature.

Nevertheless, from personal experience, we know of PSH programs that support tenant participation in community programs, such as community gardens, walking groups, and neighborhood watch. Such activities can contribute to the health of the community and promote greater integration of PSH residents⁶⁸ and suggest that community-based participatory research based on academic and community partners should include PSH programs.^{32,35}

CONCLUSIONS

We have argued that in addition to improved access to quality health care and health interventions, social determinants of health, including housing and characteristics of the neighborhood and the built environment are plausible pathways that affect health outcomes for formerly homeless individuals now living in PSH. Together, these should be considered when developing a national agenda on homelessness and health disparities. The US Interagency Council on Homelessness released its first national research agenda in October 2012, in part outlining the need to consider neighborhoods in terms of receptivity to PSH or lack thereof (e.g., the NIMBY, or "not in my backyard," phenomenon); the relationship between neighborhoods and tenant health was not identified in this agenda.

On a national level, campaigns to end homelessness such as those organized by the US Department of Veterans Affairs or nonprofits such as Community Solutions (the latter responsible for the 100 000 Homes Campaign⁶⁹) can interact and align with the efforts of others to build healthy communities. Collaboration at the federal level with supporting agencies such as the Centers for Disease Control and Prevention, US Department of Housing and Urban Development, or the National Institute of Environmental Health Sciences could facilitate such consideration.

Within this article, we have identified several priorities including policy discussions about funding implications given that housing is a key social determinant of health; development of integrated care models and health promotion interventions that incorporate the specific needs of an aging population, including restricted mobility and end-of-life care; research on the links among neighborhood characteristics, the built environment, and tenants health behaviors and outcomes; research on the impact of stigma, discrimination, and mental health symptoms on the physical activity and diet of those who have transitioned from homelessness to PSH; and the inclusion of PSH within community-academic partnerships focusing on health disparities. In addition to suggesting that collaboration at the federal level is key to developing such an agenda, individuals working to end homelessness could find key collaborators in public health researchers who not only assess the physical health outcomes of those who are homeless but also include those living in PSH.

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References

- Barrow SM, Herman DB, Córdova P, Struening EL. Mortality among homeless shelter residents in New York City. Am J Public Health. 1999; 89(4):529–534. [PubMed: 10191796]
- O'Connell JJ. Raging against the night: dying homeless and alone. J Clin Ethics. 2005; 16(3):262– 266. [PubMed: 16302552]

- O'Connell JJ, Oppenheimer SC, Judge CM, et al. The Boston Health Care for the Homeless Program: a public health framework. Am J Public Health. 2010; 100(8):1400–1408. [PubMed: 20558804]
- Zlotnick C, Zerger S. Survey findings on characteristics and health status of clients treated by the federally funded (US) Health Care for the Homeless Programs. Health Soc Care Community. 2009; 17(1):18–26. [PubMed: 18564196]
- Craig, C.; Eby, D.; Whittington, J. IHI Innovation Series White Paper. Cambridge, MA: Institute for Healthcare Improvement; 2011. Care Coordination Model: Better Care at Lower Cost for People with Multiple Health and Social Needs.
- 6. Culhane DP. The costs of homelessness: a perspective from the United States. Eur J Homelessness. 2008; 2:97–114.
- Culhane DP, Metraux S, Hadley T. Public service reductions associated with placement of homeless persons with severe mental illness in supportive housing. Hous Policy Debate. 2002; 13(1):107– 163.
- Culhane, DP.; Parker, WD.; Poppe, B.; Gross, KS.; Sykes, E. Accountability, cost-effectiveness, and program performance: progress since 1998. Paper presented at: National Symposium on Homelessness Research; March 1–2, 2007; Washington, DC. Available at: http://aspe.hhs.gov/hsp/ homelessness/symposium07/culhane/report.pdf.
- Office of the United Nations High Commissioner for Human Rights. International Covenant on Economic, Social and Cultural Rights. Geneva, Switzerland: United Nations; 1976. Available at: http://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx. [Accessed July 3, 2013]
- Kresky-Wolff M, Larson MJ, O'Brien RW, McGraw SA. Supportive housing approaches in the Collaborative Initiative to Help End Chronic Homelessness (CICH). J Behav Health Serv Res. 2010; 37(2):213–225. [PubMed: 20195779]
- Wong, IY.; Hadley, TR.; Culhane, DP., et al. US Department of Housing and Urban Development; 2006. Predicting staying in or leaving permanent supportive housing that serves homeless people with serious mental illness. Available at: http://www.huduser.org/Publications/pdf/ permhsgstudy.pdf. [Accessed April 15, 2013]
- Collins SE, Clifasefi SL, Dana EA, et al. Where harm reduction meets housing first: exploring alcohol's role in a project-based housing first setting. Int J Drug Policy. 2012; 23(2):111–119. [PubMed: 21852096]
- Tsemberis S, Gulcur L, Nakae M. Housing First, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. Am J Public Health. 2004; 94(4):651–656. [PubMed: 15054020]
- 14. US Department of Housing and Urban Development. The 2010 Annual Homeless Assessment Report to Congress. Washington, DC: US Department of Housing and Urban Development; 2010. Available at:https://www.onecpd.info/resources/documents/2010HomelessAssessmentReport.pdf. [Accessed January 2, 2013]
- Kyle T, Dunn JR. Effects of housing circumstances on health, quality of life and healthcare use for people with severe mental illness: a review. Health Soc Care Community. 2008; 16(1):1–15. [PubMed: 18181811]
- Link BG, Susser E, Stueve A, Phelan J, Moore RE, Struening E. Lifetime and five-year prevalence of homelessness in the United States. Am J Public Health. 1994; 84(12):1907–1912. [PubMed: 7998628]
- Colton CW, Manderscheid RW. Congruencies in increased mortality rates, years of potential life lost, and causes of death among public mental health clients in eight states. Prev Chronic Dis. 2006; 3(2):A42. [PubMed: 16539783]
- Druss BG, Zhao L, Von Esenwein S, Morrato EH, Marcus SC. Understanding excess mortality in persons with mental illness: 17-year follow up of a nationally representative US survey. Med Care. 2011; 49(6):599–604. [PubMed: 21577183]
- Weinstein LC, Henwood BF, Matejkowski J, Santana AJ. Moving from street to home: health status of entrants to a Housing First program. J Prim Care Community Health. 2011; 2(1):11–15. [PubMed: 23804656]

- Henwood BF, Stanhope V, Padgett DK. The role of housing: a comparison of front-line provider views in Housing First and traditional programs. Adm Policy Ment Health. 2011; 38(2):77–85. [PubMed: 20521164]
- Stange KC, Miller WL, Nutting PA, Crabtree BF, Stewart EE, Jaén CR. Context for understanding the National Demonstration Project and the patient-centered medical home. Ann Fam Med. 2010; 8(suppl 1):S2–S8. [PubMed: 20530391]
- 22. Druss BG, Newcomer JW. Challenges and solutions to integrating mental and physical health care. J Clin Psychiatry. 2007; 68(4):e09. [PubMed: 17474799]
- 23. Henwood BF, Weinstein LC, Tsemberis S. Creating a medical home for homeless persons with serious mental illness. Psychiatr Serv. 2011; 62(5):561–562. [PubMed: 21532088]
- 24. Weinstein LC, Henwood BF, Cody J, Jordan M, Lelar R. Transforming assertive community treatment into an integrated care system: the role of nursing and primary care partnerships. J Am Psychiatr Nurses Assoc. 2011; 17(1):64–71. [PubMed: 21659296]
- Weinstein LC, Lanoue M, Collins E, Henwood BF, Drake RE. Evaluation of standard health indicators and care integration in a Housing First program for formerly homeless individuals with serious mental illness. J Dual Diagn. 2013; 9(1):72–77.
- Chowdhury FM, Kulcsar M, Gilchrist S, Hawkins NA. News from the CDC: integrating behavioral health into the patient-centered medical home. Transl Behav Med. 2012; 2(3):257–259. [PubMed: 24073120]
- 27. Matejkowski J, Draine J. Investigating the impact of Housing First on ACT fidelity. Community Ment Health J. 2009; 45(1):6–11. [PubMed: 18563563]
- 28. Druss BG, Von Esenwein SA, Compton MT, Rask KJ, Zhao L, Parker RM. A randomized trial of medical care management for community mental health settings: the Primary Care Access, Referral, and Evaluation (PCARE) study. Am J Psychiatry. 2010; 167(2):151–159. [PubMed: 20008945]
- 29. Cabassa LJ, Ezell JM, Lewis-Fernández R. Lifestyle interventions for adults with serious mental illness: a systematic literature review. Psychiatr Serv. 2010; 61(8):774–782. [PubMed: 20675835]
- Gabriele JM, Dubbert PM, Reeves RR. Efficacy of behavioural interventions in managing atypical antipsychotic weight gain. Obes Rev. 2009; 10(4):442–455. [PubMed: 19389059]
- Daumit GL, Dickerson FB, Wang NY, et al. A behavioral weight-loss intervention in persons with serious mental illness. N Engl J Med. 2013; 368(17):1594–1602. [PubMed: 23517118]
- 32. Cabassa LJ, Parcesepe A, Nicasio A, Baxter E, Tsemberis S, Lewis-Fernández R. Health and wellness Photovoice project: engaging consumers with serious mental illness in health care interventions. Qual Health Res. 2013; 23(5):618–630. [PubMed: 23258117]
- Lorig KR, Ritter P, Stewart AL, et al. Chronic Disease Self-Management Program: 2-year health status and health care utilization outcomes. Med Care. 2001; 39(11):1217–1223. [PubMed: 11606875]
- 34. Gordon, C.; Galloway, T. Review of Findings on Chronic Disease Self-Management Program (CDSMP) Outcomes: Physical, Emotional & Health-Related Quality of Life, Healthcare Utilization and Costs. Washington, DC: Centers for Disease Control and Prevention and National Council on Aging; 2008.
- 35. Henwood BF, Stanhope V, Brawer R, et al. Addressing chronic disease within supportive housing programs. Prog Community Health Partnersh. 2013; 7(1):67–75. [PubMed: 23543023]
- 36. Druss BG, Zhao L, Von Esenwein SA, et al. The Health and Recovery Peer (HARP) program: a peer-led intervention to improve medical self-management for persons with serious mental illness. Schizophr Res. 2010; 118(1–3):264–270. [PubMed: 20185272]
- Tsemberis S, Kent D, Respress C. Housing stability and recovery among chronically homeless persons with co-occuring disorders in Washington, DC. Am J Public Health. 2012; 102(1):13–16. [PubMed: 22390393]
- Padgett DK, Smith B, Henwood BF, Tiderington E. Life course adversity in the lives of formerly homeless persons with serious mental illness: qualitative analyses of context and meaning. J Orthopsychiatry. 2012; 82(3):421–430.
- 39. Padgett DK. There's no place like (a) home: ontological security among persons with serious mental illness in the United States. Soc Sci Med. 2007; 64(9):1925–1936. [PubMed: 17355900]

- Cutuli JJ, Wiik KL, Herbers JE, Gunnar MR, Masten AS. Cortisol function among early schoolaged homeless children. Psychoneuroendocrinology. 2010; 35(6):833–845. [PubMed: 20022181]
- 41. Koh KA, Hoy JS, O'Connell JJ, Montgomery P. The hunger-obesity paradox: obesity in the homeless. J Urban Health. 2012; 89(6):952–964. [PubMed: 22644329]
- 42. Krieger J, Higgins DL. Housing and health: time again for public health action. Am J Public Health. 2002; 92(5):758–768. [PubMed: 11988443]
- 43. Padgett DK, Henwood BF, Abrams C, Drake RE. Social relationships among persons who have experienced serious mental illness, substance abuse and homelessness: implications for recovery. Am J Orthopsychiatry. 2008; 78(3):333–339. [PubMed: 19123752]
- 44. Yanos PT. Beyond "landscapes of despair": the need for new research on the urban environment, sprawl, and the community integration of persons with severe mental illness. Health Place. 2007; 13(3):672–676. [PubMed: 17178251]
- 45. Galster G, Tatian P, Pettit K. Supportive housing and neighborhood property value externalities. Land Econ. 2004; 80(1):33–54.
- 46. Galster G, Pettit K, Santiago A, Tatian P. The impact of supportive housing on neighborhood crime rates. J Urban Aff. 2002; 24(3):289–315.
- 47. Srinivasan S, O'Fallon LR, Dearry A. Creating healthy communities, healthy homes, healthy people: initiating a research agenda on the built environment and public health. Am J Public Health. 2003; 93(9):1446–1450. [PubMed: 12948961]
- Papas MA, Alberg AJ, Ewing R, Helzlsouer KJ, Gary TL, Klassen AC. The built environment and obesity. Epidemiol Rev. 2007; 29(1):129–143. [PubMed: 17533172]
- Brownson RC, Hoehner CM, Day K, Forsyth A, Sallis JF. Measuring the built environment for physical activity: state of the science. Am J Prev Med. 2009; 36(4 suppl):S99–S123. e12. [PubMed: 19285216]
- Sallis JF, Saelens BE, Frank LD, et al. Neighborhood built environment and income: examining multiple health outcomes. Soc Sci Med. 2009; 68(7):1285–1293. [PubMed: 19232809]
- Sallis JF, Slymen DJ, Conway TL, et al. Income disparities in perceived neighborhood built and social environment attributes. Health Place. 2011; 17(6):1274–1283. [PubMed: 21885324]
- Whitley R. Social defeat or social resistance? Reaction to fear of crime and violence among people with severe mental illness living in urban 'recovery communities.'. Cult Med Psychiatry. 2011; 35(4):519–535. [PubMed: 21701942]
- 53. White HL, Matheson FI, Moineddin R, Dunn JR, Glazier RH. Neighbourhood deprivation and regional inequalities in self-reported health among Canadians: are we equally at risk? Health Place. 2011; 17(1):361–369. [PubMed: 21177136]
- Macintyre S. Deprivation amplification revisited; or, is it always true that poorer places have poorer access to resources for healthy diets and physical activity? Int J Behav Nutr Phys Act. 2007; 4:32. [PubMed: 17683624]
- Cannuscio CC, Weiss EE, Asch DA. The contribution of urban foodways to health disparities. J Urban Health. 2010; 87(3):381–393. [PubMed: 20354910]
- 56. Sallis JF, Glanz K. Physical activity and food environments: solutions to the obesity epidemic. Milbank Q. 2009; 87(1):123–154. [PubMed: 19298418]
- Irene Wong YL, Stanhope V. Conceptualizing community: a comparison of neighborhood characteristics of supportive housing for persons with psychiatric and developmental disabilities. Soc Sci Med. 2009; 68(8):1376–1387. [PubMed: 19251346]
- Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: a multilevel study of collective efficacy. Science. 1997; 277(5328):918–924. [PubMed: 9252316]
- Sundquist K, Theobald H, Yang M, Li X, Johansson SE, Sundquist J. Neighborhood violent crime and unemployment increase the risk of coronary heart disease: a multilevel study in an urban setting. Soc Sci Med. 2006; 62(8):2061–2071. [PubMed: 16203075]
- Stimpson JP, Ju H, Raji MA, Eschbach K. Neighborhood deprivation and health risk behaviors in NHANES III. Am J Health Behav. 2007; 31(2):215–222. [PubMed: 17269911]
- 61. Laraia BA, Karter AJ, Warton EM, Schillinger D, Moffet HH, Adler N. Place matters: neighborhood deprivation and cardiometabolic risk factors in the Diabetes Study of Northern California (DISTANCE). Soc Sci Med. 2012; 74(7):1082–1090. [PubMed: 22373821]

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- 62. Meyer, H. New York's Chronic Illness Demonstration Project: Lessons for Medicaid Health Homes. Hamilton, NJ: Center for Health Care Strategies; 2012.
- 63. Alakeson V, Frank RG, Katz RE. Specialty care medical homes for people with severe, persistent mental disorders. Health Aff (Millwood). 2010; 29(5):867–873. [PubMed: 20439873]
- 64. Day K, Cardinal BJ. A second generation of active living research. Am J Health Promot. 2007; 21(4, suppl):iv-vii. [PubMed: 17465173]
- Dannenberg AL, Bhatia R, Cole BL, Heaton SK, Feldman JD, Rutt CD. Use of health impact assessment in the U.S.: 27 case studies, 1999–2007. Am J Prev Med. 2008; 34(3):241–256. [PubMed: 18312813]
- Diez-Roux AV. Multilevel analysis in public health research. Annu Rev Public Health. 2000; 21:171–192. [PubMed: 10884951]
- 67. Hood E. Dwelling disparities: how poor housing leads to poor health. Environ Health Perspect. 2005; 113(5):A310–A317. [PubMed: 15866753]
- 68. Hopper K. The counter-reformation that failed? A commentary on the mixed legacy of supported housing. Psychiatr Serv. 2012; 63(5):461–463. [PubMed: 22549534]
- Kanis R, McCannon J, Craig C, Mergl KA. An end to chronic homelessness: an introduction to the 100,000 Homes Campaign. J Health Care Poor Underserved. 2012; 23(1):321–326. [PubMed: 22643479]