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Unstable Housing and Homelessness

# Differences in Health and Social Support between Homeless Men and Women Entering Permanent Supportive Housing



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#### ABSTRACT

*Background:* Permanent supportive housing (PSH) is the leading intervention to end chronic homelessness. Little is known, however, about gender differences, including potential disparities in physical and mental health and social support, that might inform services available through PSH.

*Methods:* This study included 421 homeless adults, at least 39 years old, English- or Spanish-speaking, who were moving into PSH through 26 different agencies in the Los Angeles area.

*Results*: Compared with men entering PSH, homeless women (28% of the sample) were younger (p < .01), less likely to have achieved at least a high school education (p < .05), and had lower incomes (p < .01). Women had more chronic physical health conditions (p < .01), were more likely to have any chronic mental health condition (odds ratio, 2.5; p < .01), and had more chronic mental health conditions than men (p < .01). Women had more relatives in their social networks (Coefficient, 0.79, p < .01) and more relatives who provided support (coefficient, 0.38; p < .05), but also more relatives with whom they had conflict (coefficient, 0.19; p < .01). Additionally, women were less likely to have caseworkers (coefficient, -0.59; p < .001) or physical and mental health care providers in their networks (coefficient, -0.23 [p < .01]; coefficient, -0.37 [p < .001], respectively). However, after correcting for multiple testing, three outcomes lost significance: number of chronic physical health conditions, number of relatives who provided any support, and number of relatives with whom there was conflict.

*Conclusions:* There is evidence of gender differences in mental health and social support among homeless adults moving into PSH. PSH cannot be a one-size-fits-all approach. Supportive services within housing should be tailored based on gender and other individual needs.

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Homeless adults are a heterogeneous, vulnerable population with high rates of morbidity and mortality (Baggett et al., 2013; Beijer, Wolf, & Fazel, 2012; Fazel, Khosla, Doll, & Geddes, 2008; Gambatese et al., 2013; Notaro, Khan, Kim, Nasaruddin, & Desai, 2013). Homeless women represent approximately onequarter of the chronically homeless population (Wilkins & Elliott, 2010), but there has been limited investigation of specific gender-based differences, which may impact service needs. The majority of studies comparing both homeless women and men in a single sample are dated, with many studies conducted in the 1980s and 1990s (Benda, 1990; Breakey et al., 1989; Burt & Cohen, 1989; Crystal & Ladner, 1985; Maurin, Russell, & Memmott, 1989; North & Smith, 1993; Ritchey, La Gory, & Mullis, 1991; Somlai, Kelly, Wagstaff, & Whitson, 1998; Stein & Gelberg, 1995). Much of the more recent literature on homelessness and gender has investigated homeless men's and women's health behaviors in gender-segregated samples (Kim, Ford, Howard, & Bradford, 2010; Stein, Andersen, & Gelberg, 2007; Teruya et al., 2010; Wenzel et al., 2009; Wenzel et al., 2012), which may limit the comparability of gender experiences across studies (Wenzel, Koegel, & Gelberg, 2000).

Moving chronically homeless individuals into permanent supportive housing (PSH) is a federal priority (United States Interagency Council on Homelessness, 2015), and PSH is the leading intervention for ending homelessness among chronically

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homeless adults (Byrne, Fargo, Montgomery, Munley, & Culhane, 2014; National Alliance to End Homelessness, 2016; Rog et al., 2014; Smelson et al., 2016). Investigating gender-based differences within the chronically homeless population has important implications for ensuring that housing and supportive services are appropriately tailored to meet the potentially disparate needs of men and women.

Past literature demonstrates that homeless adults have high rates of chronic physical (Beijer et al., 2012; Bernstein, Meurer, Plumb, & Jackson, 2015; Notaro et al., 2013) and mental (Fazel et al., 2008; Folsom et al., 2005; Lippert & Lee, 2015; Martens, 2001; Stergiopoulos, Dewa, Durbin, Chau, & Svoboda, 2010; Strehlau, Torchalla, Li, Schuetz, & Krausz, 2012) health conditions, and that there are disparities in homeless men's and women's health. In studies from the 1980s, homeless women were more likely than men to report a mental health condition (Breakey et al., 1989; Crystal & Ladner, 1985); however, there are discrepancies in the literature regarding gender differences in mental health symptoms, with one relatively recent study reporting no significant differences (Edens, Mares, & Rosenheck, 2011) and another study finding that women were significantly more likely to report mental health symptoms (Hwang et al., 2009). The literature also describes homeless women as being frailer and having more physical health problems than homeless men (Breakey et al., 1989; Salem et al., 2013).

The number and quality of social relationships decreases a person's morbidity and mortality by promoting positive health behaviors, improving mental health, and acting as a form of prevention (Umberson & Montez, 2010; Yang et al., 2016), even "beyond the effects of housing status" (Johnstone, Parsell, Jetten, Dingle, & Walter, 2016, p. 421) as demonstrated by an Australian longitudinal study from homelessness through housing (Johnstone et al., 2016). Moreover, social support from service providers and relatives increases housing stability among formerly homeless individuals (Calsyn & Winter, 2002), and stable housing promotes health and well-being (Burgard, Seefeldt, & Zelner, 2012; Rog et al., 2014; Wright, Vartanian, Li, Royal, & Matson, 2016).

Social support from relatives and service providers is an important factor in positively impacting a homeless person's physical (Hwang et al., 2009; LaGory, Ritchey, & Fitzpatrick, 1991) and mental health (Bates & Toro, 1999; Hwang et al., 2009; Irwin, LaGory, Ritchey, & Fitzpatrick, 2008; LaGory et al., 1991). Previously, it has been found that homeless women are more likely to have contact with relatives (Bates & Toro, 1999; Breakey et al., 1989; Maurin et al., 1989; Ritchey et al., 1991) and have more social support (Bates & Toro, 1999; Lam & Rosenheck, 1999) than homeless men. Among formerly homeless individuals living in housing, relatives were the largest component of social support for individuals (Henwood et al., 2015). Given accumulating research on the profound influence of social networks on health and well-being (Umberson & Montez, 2010; Yang et al., 2016), further research investigating gender differences in social networks and support among homeless persons entering PSH must be conducted to determine if there are disparities that need to be addressed to improve PSH residents' well-being.

Homelessness histories and income, which may also impact health and social relationships, may be subject to gender disparities. With the exception of one study (Edens et al., 2011), it has been found that women's lifetime homelessness duration is less than men's (Calsyn & Morse, 1990; Gelberg & Linn, 1992; North & Smith, 1993; Ritchey et al., 1991), and chronic homelessness may contribute to increased morbidity and mortality (Martens, 2001). Additionally, the longer people are homeless, the smaller their social networks, and thereby the less social support they may have (Bates & Toro, 1999; Calsyn & Morse, 1991; Lam & Rosenheck, 1999). Early research found that homeless women were more likely than men to receive financial benefits (Crystal & Ladner, 1985); this study included young women, however, and income may differ depending on whether women have custody of minor children. Additionally, these findings should be considered in light of general population data that continue to indicate lower earnings among women relative to men (Bureau of Labor Statistics, 2016).

Through survey data collected from a cohort of homeless women and men moving into PSH, this study seeks to understand gender-based health and key social network and support differences. Given that much of the previous research investigating gender differences is dated, often does not include men and women in the same study, does not focus on persons entering PSH, or has other limiting characteristics, the findings of this study will inform the potential need for gender-tailored housing and supportive services for homeless persons moving into PSH.

# Methods

The study presented here uses baseline data that were collected as part of a longitudinal study investigating the health and social network changes of homeless adults transitioning into PSH in the Los Angeles area (Wenzel, 2014). Chronically homeless adults apply for PSH in LA County through the Coordinated Entry System (CES) with the aid of a housing or social service agency staff member. The CES uses the Vulnerability Index—Service Prioritization Decision Assistance Tool (VI-SPDAT) and then matches clients to available PSH units based on the VI-SPDAT score and the housing voucher (United Way of Greater Los Angeles, n.d.). Clients have higher VI-SPDAT scores if they report a chronic health condition, physical or mental disability, being HIV-positive, and/or substance abuse (United Way of Greater Los Angeles, 2016).

Between August 2014 and October 2015, staff members at 26 housing/social service provider agencies in Los Angeles County referred homeless clients who were preparing to move into PSH. Referrals occurred via one of four methods: 1) with the client's permission, a partner agency staff member provided the interested client's name and contact information to the project manager, 2) an interested client called the project manager directly after being given the contact information by a partner agency staff member, 3) a partner agency staff member and the client contacted the project manager together, or 4) potentially eligible clients were approached at agencies during large lease-up or other move-in related events.

All interested clients of the partner agencies were screened for study eligibility by a trained study member. Clients were eligible for participation if they were at least 39 years old (turning 40 during their study participation), spoke English or Spanish, were currently homeless, were moving into PSH without minor children, and were moving into housing within 20 miles of downtown Los Angeles. A geographic exception was made for Long Beach, because there are many homeless adults, services, and housing programs in the Long Beach area of Los Angeles County. Eligibility screenings occurred over the phone or in person. The age of 39 (thereby turning 40 during the course of the study) minimum was chosen to reduce variability owing to differing developmental stages within the life course, and fits the generativity versus stagnation stage of Erik Erikson's Eight Ages of Man theory, which tends to begin around age 40 (Erikson, 1963; McLeod, 2013; Slater, 2003).

A little more than one-half of those persons we screened for study eligibility were referred to us by staff at partnering agencies (51.0%). Unfortunately, our partnering agencies were unable to collect refusal rates among their prescreened eligible clientele. We were able to track refusals for respondents recruited at move-in or lease-up events (49.0% of those persons screened for eligibility), during which 20 people refused to complete a screener. This is a refusal rate of 6.6% among persons approached for participation by our study staff during lease-up and other move-in related events. During the study recruitment period, 599 persons at partnering agencies and at move-in or lease-up events completed eligibility screeners, and 63 were screened as ineligible (10.5%). Of the remaining 536 people who were initially deemed eligible, we were able to schedule and complete baseline interviews with 472 (15 persons scheduled interviews, but did not show up and could not be rescheduled; 49 could not be contacted after completing the screener). Additionally, 51 persons who screened eligible and completed the baseline interview were subsequently excluded from the study: 1 person moved from one PSH location to another housing location and therefore was not homeless, 1 person withdrew after completing her baseline interview and before moving into housing, 1 person passed away before he moved into housing, and 48 people did not move into PSH within 3 months after our study recruitment period. This resulted in a final baseline sample of 421 participants.

The study sample is very similar to the overall population of homeless individuals who moved into PSH in the same zip codes and during the same time as our sample, in terms of age and race/ethnicity, although a lesser proportion of our sample is women (28% vs. 33%) and a greater proportion of our sample are veterans (30% vs. 11%; Los Angeles Homeless Services Authority, 2016).

Interviewers obtained informed consent from study participants in English or Spanish. The study was approved by the University of Southern California's Institutional Review Board and received a Certificate of Confidentiality from the U.S. Department of Health and Human Services.

Each participant was asked to complete a total of four interviews—baseline (between 3 months before or up to 5 days of moving in), and at 3, 6, and 12 months from the move-in date. This paper focuses solely on the baseline data. Each intervieweradministered interview took approximately 1.5 hours to complete and occurred at a housing agency, public space, or the participant's apartment. Interviews were conducted in English or Spanish, depending on the participant's preferred language; 4.3% of baseline interviews were conducted in Spanish. Responses were collected on an iPad through Qualtrics survey software for the questionnaire and a social network data collection app designed by the study team (Rice, 2011). Participants received \$20 for their completion of the baseline interview.

The social network portion of the interview asked participants to identify (by first name or nickname only) the people with whom they interacted in the past 3 months in person, via phone, email, written notes or letters, text messaging, or social media. The participant provided demographic information for each person (or "alter" in the terminology of social network science) who was nominated, and was asked to identify characteristics of their relationships with these people, and the alters' social support provided to the participant.

#### Measures

Demographic characteristics (i.e., race and ethnicity, military service, lifetime duration of literal homelessness, and income from all legal sources in the past 30 days) were assessed using items adopted or adapted from previous research by the authors (Rice, 2011; Wenzel, 2005, 2009). The achievement of a high school education or GED was assessed with an item adapted from the California Health Interview Survey (2014).

With an item adapted from the National Health Interview Survey (National Center for Health Statistics, 2014) and response options informed by Bassuk, Buckner, Perloff, and Bassuk (1998), Hwang (2001), and the National Health Care for the Homeless Council (2011), participants were asked which chronic physical (e.g., diabetes, arthritis, cancer, HIV) and mental (e.g., schizophrenia, posttraumatic stress disorder [PTSD], bipolar disorder) health diagnoses they had ever received. For analyses, an indicator was created for any chronic mental health diagnosis and any chronic physical health diagnosis. However, owing to the high prevalence of chronic conditions, we also present the sum of the total number of physical and mental chronic conditions, respectively. An indicator of having at least "good" health was created based on a participant's response to an item adapted from the Short Form-12 (Ware, Kosinski, & Keller, 1996). Past month symptoms of PTSD and other mental health symptoms were assessed with the four-item Primary Care-PTSD screener (Prins et al., 2003) and the Modified Colorado Symptom Index (MCSI; Conrad et al., 2001), respectively. Participants met the criteria for experiencing past month PTSD symptoms if they endorsed at least three of four statements (Prins et al., 2003); we present the proportion of those who met the criteria. The MCSI is an assessment of psychological symptoms with a score range from 0 to 56, with higher scores indicating more symptoms and greater frequency of symptoms; a score of at least 16 indicates psychiatric disability (Boothroyd & Chen, 2008; Conrad et al., 2001).

Social network items have been used in previous studies (Green, Tucker, Golinelli, & Wenzel, 2013; Rhoades et al., 2011; Rice, 2011; Tucker et al., 2009). Participants identified which alters were relatives, caseworkers or other agency staff, physical health care providers, and mental health providers. We operationalized social support as someone who participants felt emotionally close to, felt they could confide in, provided them with resources (i.e., tangible support—food, money, clothes, shelter), and who gave them advice or information. "Any support" is defined as endorsing at least one of the aforementioned types of support. We also asked about conflict in terms of whom they had unpleasant disagreements with or made them angry/ upset in the past 3 months.

#### Analysis

Stata 13.0 (StataCorp, College Station, TX) was used to conduct univariable (i.e., *t* tests and  $\chi^2$  tests for demographic characteristic differences, and regressions for unadjusted models) and multivariable analyses. Multivariable logistic and linear regressions were used to identify potential gender differences in health and social network characteristics; while controlling for the following demographic characteristics: age, race/ ethnicity (Black is the reference group), veteran status, having at least a high school education, lifetime duration of literal home-lessness, and past 30-day income. For the social network analyses, network size (i.e., the number of alters in one's network)

was also included as a control variable. These independent variables were included to better understand if gender itself has a unique and statistically significant association with each of the outcomes, controlling for the potential influence of other characteristics that may differ by gender.

This study included 421 homeless adults who completed the baseline interview. For this paper, three participants who identified as transgender were removed from the analyses because of the small size of this subgroup, resulting in an analytic sample size of 418 for most variables. Three additional participants refused to complete the social network inventory; as such, the social network analyses have a sample size of 415.

#### Results

As reported in Table 1, women comprised 28% of the study sample and were on average approximately 2 years younger than the men in the study. The majority of both men and women were Black. Women were significantly less likely than men to have achieved at least a high school education, and they reported \$143 less income from all sources on average in the past 30 days than their male peers. More men than women reported being a veteran of military service (38.5% vs. 10.3%), and men were literally homeless for about 2.5 years longer during their lifetimes than women (6.7 vs. 4.3 years).

Univariable results show significant differences between women and men on a number of health and social network and support variables, findings that remained after controlling for demographic characteristics in multivariable analyses. Multivariable analyses adjusting for the demographic characteristics (Table 1) show that women were 2.5 times as likely as men to have any chronic mental health condition and also were diagnosed with more chronic mental health conditions than men. There were no significant gender differences in diagnoses of at least one chronic physical health condition. Women, however, had a greater number of diagnosed chronic physical health conditions than men.

Although average network size was about the same (i.e., 7.7 for women and 7.8 for men), there were several significant social network differences between homeless women and men entering PSH. Women had more alters who were relatives, and more relatives in their networks who provided any support, as well as relatives with whom they had conflict. Women had fewer alters in their networks who were caseworkers or agency staff members, and fewer who were health care providers for physical or mental health.

To correct for multiple testing, we conducted a Bonferroni-Holm minimum p test, which is a closed testing method that is less conservative than Bonferroni correction. Through this test, three outcomes lost their significance: the number of chronic physical health conditions, the number of relatives who provided any support, and the number of relatives with whom there was conflict.

## Discussion

To the best of our knowledge, this is the first study to investigate gender differences in social support and health among homeless men and women entering PSH. Although the majority of men and women had chronic physical or mental health conditions, homeless women entering PSH seemed to be even less healthy than their male peers, as illustrated by greater numbers of chronic physical and mental health diagnoses.

Consistent with the larger population of chronically homeless adults (Wilkins & Elliott, 2010), approximately one-quarter of our sample were women. Although gender differences in demographic and background characteristics were not a focus of this paper, our findings revealed some notable similarities and dissimilarities to previous studies investigating gender differences among homeless men and women. Several of our findings, such as those that women were younger, less likely to be military veterans, and experienced a shorter duration of lifetime literal homelessness are similar to those reported from research conducted in the 1980s and 1990s (Breakey et al., 1989; Calsyn & Morse, 1990; Gelberg & Linn, 1992; North & Smith, 1993; Ritchey et al., 1991). However, our findings differed in some ways from past studies. Breakey et al. (1989) and Burt and Cohen (1989) found homeless women to have less income and education than homeless men, whereas we found the opposite. Our findings suggest that homeless women may be more vulnerable than their male counterparts. The lower income among women, albeit at a level of poverty for both men and women in this study, may reflect the persistent income disparity in the larger population (Bureau of Labor Statistics, 2016). Moreover, differences in eligibility criteria (e.g., age minimum) may explain these discrepancies partly.

In addition to differences in income and education, other findings suggest increased vulnerability of homeless women as compared with homeless men. Women were more likely to report a greater number of chronic physical health condition diagnoses than men. In line with previous research (Breakey et al., 1989; Crystal & Ladner, 1985), we did find that women were more likely than men to report the diagnosis of a chronic mental health condition, though there are no statistically significant gender differences in current mental health symptoms (similar to the findings of Edens et al. [2011]). One possible explanation, which cannot be explored with the current data, is that women may be more likely to receive a diagnosis of a chronic health condition because societal scripts dictate that it is more socially acceptable for women to seek mental health and physical health care than men (Afifi, 2007; Green & Pope, 1999; Smith, Braunack-Mayer, & Wittert, 2006). However, the significant barriers faced by homeless women and men in accessing health care might negate a tendency for women to receive diagnoses for chronic conditions.

Women also reported fewer caseworkers and health care providers with whom they had contact of any kind in the previous 3 months. This finding may reflect that more of the women than men had a single service provider who met multiple needs or that women were dissatisfied with their service providers, although there would be no reason to expect these to be more likely among women than men. Given the greater level of chronic physical and mental health needs among women relative to men, the more limited availability of caseworkers and service providers in women's networks even during a 3-month period is nevertheless a concern that deserves additional investigation.

Homeless women in this study were more likely than homeless men to report relatives as members of their social networks, a finding similar to previous studies (Bates & Toro, 1999; Breakey et al., 1989; Maurin et al., 1989). Relationships with family members in this context were not unequivocally positive, however. Women reported greater numbers of relatives who provided support but they also reported greater numbers of relatives with whom they had conflict. That the women in this sample had more social support than men is consistent with a similar, prior American study (Bates & Toro, 1999), but unlike the

## Table 1

Gender Differences in Demographics, Homelessness and Housing, Economic and Service Characteristics, Physical and Mental Health, and Social Networks and Support

	Men n = 301 (72.0%)	Women n = 117 (28.0%)	Unadjusted Likelihood of Women Reporting Each Dependent Variable	Adjusted Likelihood of Women Reporting Each Dependent Variable
Demographics	% (n)	% ( <i>n</i> )	Test statistic	
Age mean (SD)	55.13 (7.53)	52.85 (7.27)	2.80**	-
Race/ethnicity			1.98	-
Black	57.58 (171)	52.99 (62)		-
White	24.58 (73)	23.08 (27)		-
Hispanic/multiracial/	17.85 (53)	23.93 (28)		-
other race				
At least high school education	80.40 (242)	69.23 (81)	5.98*	-
Veteran	38.54 (116)	10.26 (12)	31.72***	-
Lifetime duration of literal homelessness,	6.70 (7.36)	4.32 (5.14)	3.21**	-
years mean (SD) Income in past 30 days, \$	637.25 (476.44)	494.16 (454.88)	2.80**	-
mean (SD) Physical health and mental health dependent	% (n)	% (n)	OR/Coefficient and 95% CI	OR/Coefficient and 95%
variables				
Any diagnosed physical chronic health condition	88.04 (265)	94.02 (110)	2.13 (0.92-4.94)	1.62 (0.66-4.00)
No. of physical chronic health conditions	2.40 (1.69)	2.89 (1.95)	0.49 (0.11–0.87)*	0.55 (0.15–0.94)**†
mean (SD) Any diagnosed chronic mental health	69.44 (209)	84.62 (99)	2.42 (1.38-4.23)**	2.48 (1.36-4.53)**
condition No. of chronic mental health conditions	1.99 (1.89)	2.65 (1.96)	0.66 (0.25–1.07)**	0.65 (0.24–1.06)**
mean (SD) Experienced PTSD symptoms in past	51.16 (154)	49.57 (58)	0.94 (0.61–1.44)	0.83 (0.52–1.34)
month MCSI mental health symptoms in past	20.82 (12.96)	23.14 (12.31)	2.31 (-0.42 to 5.05)	0.88 (-1.88 to 3.63)
month score (scale range: 0–56; higher number, more frequent symptoms) mean (SD) Self-rated good health (excellent, very good, good)	45.00 (135)	36.75 (43)	0.71 (0.46–1.10)	0.78 (0.49–1.24)
	Men <i>n</i> = 298 (71.8%)	Women <i>n</i> = 117 (28.2%)		
ocial networks and social support dependent	Mean (SD)	Mean (SD)	OR/Coefficient and 95% Cl	OR/Coefficient and 95%
Total no. of alters	7.74 (4.08)	7.68 (5.47)	-0.07 (-1.04 to 0.90)	_
No. of alters who were relatives	1.76 (2.10)	2.56 (2.80)	0.80 (0.30 to 1.29)**	0.79 (0.33–1.25)**
No. of alters who were case workers/agency	1.33 (1.28)	0.74 (1.39)	$-0.60 (-0.88 \text{ to } -0.32)^{***}$	-0.59 (-0.86 to -0.32)**
staff No. of alters who were health care providers	0.40 (0.61)	0.16 (0.64)	$-0.24 (-0.37 \text{ to } -0.11)^{***}$	-0.23 (-0.37 to -0.10)**
No. of alters who were mental health care providers	0.53 (0.77)	0.19 (0.51)	-0.34 (0.49 to -0.19)***	-0.37 (-0.52 to -0.22)**
No. of alters who provided any support	4.58 (3.36)	4.64 (3.75)	0.07 (-0.68 to 0.82)	-0.11 (-0.90 to 0.68)
No. of alters who had conflict with	0.98 (1.74)	1.16 (1.18)	0.19 (-0.15 to 0.53)	0.17 (-0.19 to 0.53)
No. of relatives who provided any support	1.23 (1.61)	1.66 (2.28)	0.43 (0.04–0.82)*	0.38 (0.01–0.76)*†
No. of relatives who had conflict with	0.23 (0.57)	0.46 (0.75)	0.23 (0.09–0.36)**	0.19 (0.05–0.33)**†

Abbreviations: MCSI, Modified Colorado Symptom Index; PTSD, posttraumatic stress disorder. \*p < .05, \*\*p < .01, \*\*\*p < .001. † No longer significant after the Bonferroni-Holm minp test.

findings in a large Canadian study of homeless adults in which there were no gender differences (Hwang et al., 2009). Given that social integration and the quality of relationships are key to health and well-being (Umberson & Montez, 2010; Yang et al., 2016), women's relative advantage to men in having more familial connections may be offset by the conflictual aspects of those connections.

## Limitations

We note several study limitations. Mental and physical chronic health conditions were self-reported and therefore could have been either underreported or overreported. However, research has shown that homeless adults are reliable in their health care utilization reports (Hwang, Chambers, & Katic, 2016). Regarding social networks, participants were asked to nominate alters with whom they had contact during the 3 months before the interview. It is possible that the 3-month timeframe did not adequately represent provider contacts, or that women or men may have been in contact with providers who they did not think to report in their social networks. We have no reason to expect, however, that underinclusion or overinclusion of providers would have occurred differentially for women and men. Although the study sample was a large cohort of homeless women and men entering PSH through 26 different agencies in Los Angeles, it is not necessarily representative of all homeless adults moving into PSH within Los Angeles City or County. Our study sample furthermore consists of homeless adults entering PSH as individuals and is therefore not representative of homeless adults moving into PSH with children. An additional limitation with respect to understanding the representativeness of the sample is that the 26 PSH agencies were unable to track client refusals to participate in our study among their clientele moving into housing.

## Implications for Practice and/or Policy

Consistent with the PSH model to tailor services to meet individuals' needs (Burt, 2004; Byrne et al., 2014; Rog et al., 2014), housing and supportive services for homeless people should not have a one-size-fits-all approach (Busch-Geertsema, 2005). Subsisting through the extreme conditions of homelessness, both men and women experience resource deprivation and poor health that should be addressed in the context of stable housing. As demonstrated in this study, there are nonetheless differences between men and women in terms of income, education, mental and physical health, and social resources that should be addressed either more intensively or differently among men and women to enable equal opportunities to achieve well-being in PSH. Initiatives within PSH might include enhanced efforts to connect women to all of the public benefits to which they are entitled, and efforts to inquire about and fulfill any educational, vocational, and employment goals to enhance monthly income through social enterprise (Ferguson, 2007), for example.

Social relationships, including ties with caseworkers and health care providers, can positively impact health and wellbeing (Umberson & Montez, 2010; Yang et al., 2016). Support from relatives and agency staff or health care providers might be a fruitful area to be further developed and encouraged in interventions for homeless persons moving into housing (Busch-Geertsema, 2005; Calsyn & Winter, 2002; Henwood et al., 2015), particularly for homeless women (Tucker et al., 2009). Even if familial relationships are complex and potential sources of conflict, they are typically the largest support group and represent a resource for formerly homeless persons in housing (Henwood et al., 2015). Positive social ties, including with providers, could potentially be enhanced through peer-based patient navigation programs (Enard & Ganelin, 2013). Furthermore, positive social relationships could be leveraged to assist formerly homeless persons in accessing services and in improving one's health and well-being in housing (Hwang et al., 2009). Although family reunification assistance is predominantly aimed at women with young children, further research to bolster familial ties and resolve conflicts for older men and women is warranted.

Evidence thus far indicates that permanent housing and accompanying supportive services may significantly reduce formerly homeless persons' unmet physical and mental health care needs, improve residents' perceived health quality (Wright et al., 2016), and their well-being, quality of life, and housing retention (Gilmer, Stefancic, Ettner, Manning, & Tsemberis, 2010; Tsemberis & Eisenberg, 2000; Wright et al., 2016). Enhancements, as necessary, based on gender may be critical to consider when designing programs to promote the health and well-being of all homeless persons entering PSH.

# Conclusions

The findings of this paper suggest that homeless women entering PSH are more vulnerable than men in terms of having fewer financial resources and lower educational status, greater physical and mental health needs, and fewer caseworkers and health care providers in their social networks. Women have an advantage relative to men in having more supportive familial ties, but advantages may be offset by conflict in those relationships. Health care and supportive service providers within PSH should consider these gender differences when tailoring services to meet the needs and enhance the well-being of homeless persons entering PSH.

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#### References

- Afifi, M. (2007). Gender differences in mental health. Singapore Medical Journal, 48(5), 385.
- Baggett, T. P., Hwang, S. W., O'Connell, J. J., Porneala, B. C., Stringfellow, E. J., Orav, E. J., ... Rigotti, N. A. (2013). Mortality among homeless adults in Boston: Shifts in causes of death over a 15-year period. *JAMA Internal Medicine*, 173(3), 189–195.
- Bassuk, E. L., Buckner, J. C., Perloff, J. N., & Bassuk, S. S. (1998). Prevalence of mental health and substance use disorders among homeless and lowincome housed mothers. *American Journal of Psychiatry*, 155(11), 1561–1564.
- Bates, D. S., & Toro, P. A. (1999). Developing measures to assess social support among homeless and poor people. *Journal of Community Psychology*, 27(2), 137–156.
- Beijer, U., Wolf, A., & Fazel, S. (2012). Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: A systematic review and meta-analysis. *Lancet Infectious Diseases*, 12(11), 859–870.
- Benda, B. B. (1990). Crime, drug abuse and mental illness. Journal of Social Service Research, 13(3), 39–60.
- Bernstein, R. S., Meurer, L. N., Plumb, E. J., & Jackson, J. L. (2015). Diabetes and hypertension prevalence in homeless adults in the United States: A systematic review and meta-analysis. *American Journal of Public Health*, 105(2), E46–E60.

- Boothroyd, R. A., & Chen, H. J. (2008). The psychometric properties of the Colorado Symptom Index. Administration and Policy in Mental Health and Mental Health Services Research, 35(5), 370.
- Breakey, W. R., Fischer, P. J., Kramer, M., Nestadt, G., Romanoski, A. J., Ross, A., ... Stine, O. C. (1989). Health and mental health problems of homeless men and women in Baltimore. *JAMA*, 262(10), 1352–1357.
- Bureau of Labor Statistics. (2016). Usual weekly earnings of wage and salary workers. Washington, D.C.: U.S. Department of Labor. [Press release].
- Burgard, S. A., Seefeldt, K. S., & Zelner, S. (2012). Housing instability and health: Findings from the Michigan recession and recovery study. Social Science & Medicine, 75(12), 2215–2224.
- Burt, M. R., & Cohen, B. E. (1989). Differences among homeless single women, women with children, and single men. Social Problems, 36(5), 508–524.
- Burt, M. R., Hedderson, J., Zweig, J., Ortiz, M. J., Aron-Turnham, L., & Johnson, S. M. (2004). Strategies for reducing chronic street homelessness (Office of Policy Development and Research). Washington, D.C.: The Urban Institute. U.S. Department of Housing and Urban Development.
- Busch-Geertsema, V. (2005). Does re-housing lead to reintegration? *Innovation: The European Journal of Social Science Research*, 18(2), 205–226.
- Byrne, T., Fargo, J. D., Montgomery, A. E., Munley, E., & Culhane, D. P. (2014). The relationship between community investment in permanent supportive housing and chronic homelessness. *Social Service Review*, 88(2), 234–263.
- California Health Interview Survey. (2014). CHIS 2011-2012 Adult Questionnaire Version 10.3 UCLA Center for Health Policy Research. Los Angeles, CA: Regents of the University of California.
- Calsyn, R. J., & Morse, G. (1990). Homeless men and women: Commonalities and a service gender gap. American Journal of Community Psychology, 18(4), 597–608.
- Calsyn, R. J., & Morse, G. A. (1991). Predicting chronic homelessness. Urban Affairs Review, 27(1), 155–164.
- Calsyn, R. J., & Winter, J. P. (2002). Social support, psychiatric symptoms, and housing: A causal analysis. *Journal of Community Psychology*, 30(3), 247–259.
- Conrad, K. J., Yagelka, J. R., Matters, M. D., Rich, A. R., Williams, V., & Buchanan, M. (2001). Reliability and validity of a modified Colorado Symptom Index in a national homeless sample. *Mental Health Services Research*, 3(3), 141–153.
- Crystal, S., & Ladner, S. (1985). Multiple impairment patterns in the mentally ill homeless. *International Journal of Mental Health*, 14(4), 61–73.
- Edens, E. L., Mares, A. S., & Rosenheck, R. A. (2011). Chronically homeless women report high rates of substance use problems equivalent to chronically homeless men. Women's Health Issues, 21(5), 383–389.
- Enard, K. R., & Ganelin, D. M. (2013). Reducing preventable emergency department utilization and costs by using community health workers as patient navigators. *Journal of Healthcare Management/American College of Healthcare Executives*, 58(6), 412.

Erikson, E. H. (1963). Eight ages of man. Childhood and Society. New York: Norton.

- Fazel, S., Khosla, V., Doll, H., & Geddes, J. (2008). The prevalence of mental disorders among the homeless in Western countries: Systematic review and meta-regression analysis. *PLoS Medicine*, 5(12), 1670–1681.
- Ferguson, K. M. (2007). Implementing a social enterprise intervention with homeless, street-living youths in Los Angeles. Social Work, 52(2), 103– 112.
- Folsom, D. P., Hawthorne, W., Lindamer, L., Gilmer, T., Bailey, A., Golshan, S., ... Jeste, D. V. (2005). Prevalence and risk factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system. *American Journal of Psychiatry*, 162(2), 370–376.
- Gambatese, M., Marder, D., Begier, E., Gutkovich, A., Mos, R., Griffin, A., ... Madsen, A. (2013). Programmatic impact of 5 years of mortality surveillance of New York City homeless populations. *American Journal of Public Health*, 103(S2), S193–S198.
- Gelberg, L., & Linn, L. S. (1992). Demographic differences in health status of homeless adults. Journal of General Internal Medicine, 7(6), 601–608.
- Gilmer, T. P., Stefancic, A., Ettner, S. L., Manning, W. G., & Tsemberis, S. (2010). Effect of full-service partnerships on homelessness, use and costs of mental health services, and quality of life among adults with serious mental illness. *Archives of General Psychiatry*, 67(6), 645–652.
- Green, C. A., & Pope, C. R. (1999). Gender, psychosocial factors and the use of medical services: A longitudinal analysis. *Social Science & Medicine*, 48(10), 1363–1372.
- Green, H. D., Tucker, J. S., Golinelli, D., & Wenzel, S. L. (2013). Social networks, time homeless, and social support: A study of men on Skid Row. Network Science (Cambridge University Press), 1(3), 305–320.
- Henwood, B. F., Stefancic, A., Petering, R., Schreiber, S., Abrams, C., & Padgett, D. K. (2015). Social relationships of dually diagnosed homeless adults following enrollment in housing first or traditional treatment services. *Journal of the Society for Social Work and Research*, 6(3), 385–406.
- Hwang, S. W. (2001). Homelessness and health. Canadian Medical Association Journal, 164(2), 229–233.
- Hwang, S. W., Chambers, C., & Katic, M. (2016). Accuracy of self-reported health care use in a population-based sample of homeless adults. *Health Services Research*, 51(1), 282–301.

- Hwang, S. W., Kirst, M. J., Chiu, S., Tolomiczenko, G., Kiss, A., Cowan, L., & Levinson, W. (2009). Multidimensional social support and the health of homeless individuals. *Journal of Urban Health*, 86(5), 791–803.
- Irwin, J., LaGory, M., Ritchey, F., & Fitzpatrick, K. (2008). Social assets and mental distress among the homeless: Exploring the roles of social support and other forms of social capital on depression. *Social Science & Medicine*, 67(12), 1935–1943.
- Johnstone, M., Parsell, C., Jetten, J., Dingle, G., & Walter, Z. (2016). Breaking the cycle of homelessness: Housing stability and social support as predictors of long-term well-being. *Housing Studies*, 31(4), 410–426.
- Kim, M. M., Ford, J. D., Howard, D. L., & Bradford, D. W. (2010). Assessing trauma, substance abuse, and mental health in a sample of homeless men. *Health & Social Work*, 35(1), 39–48.
- LaGory, M., Ritchey, F., & Fitzpatrick, K. (1991). Homelessness and affiliation. Sociological Quarterly, 32(2), 201–218.
- Lam, J. A., & Rosenheck, R. (1999). Social support and service use among homeless persons with serious mental illness. *International Journal of Social Psychiatry*, 45(1), 13–28.
- Lippert, A. M., & Lee, B. A. (2015). Stress, coping, and mental health differences among homeless people. *Sociological Inquiry*, 85(3), 343–374.
- Los Angeles Homeless Services Authority. (2016). Homeless Management Information System Data, Los Angeles Continuum of Care (LA CoC HMIS). Los Angeles, CA.
- Martens, W. (2001). A review of physical and mental health in homeless persons. Public Health Reviews, 29(1), 13–33.
- Maurin, J. T., Russell, L., & Memmott, R. J. (1989). An exploration of gender differences among the homeless. *Research in Nursing & Health*, 12(5), 315–321.
- McLeod, S. (2013). Erik Erikson. Developmental Psychology. Available: www. simplypsychology.org/Erik-Erikson.html. Accessed: November 15, 2016.
- National Alliance to End Homelessness. (2016). Chronic Homelessness-Overview. Available: www.endhomelessness.org/pages/chronic\_homelessness\_ overview. Accessed: May 17, 2016.
- National Center for Health Statistics. (2014). 2014 NHIS Questionnaire-Sample Adult National Health Interview Survey. Atlanta: Centers for Disease Control and Prevention.
- National Health Care for the Homeless Council. (2011). *Homelessness & Health: What's the Connection? Fact Sheet*. Nashville, TN: National Health Care for the Homeless Council.
- North, C. S., & Smith, E. M. (1993). A comparison of homeless men and women: Different populations, different needs. *Community Mental Health Journal*, 29(5), 423–431.
- Notaro, S. J., Khan, M., Kim, C., Nasaruddin, M., & Desai, K. (2013). Analysis of the health status of the homeless clients utilizing a free clinic. *Journal of Community Health*, 38(1), 172–177.
- Prins, A., Ouimette, P., Kimerling, R., Cameron, R. P., Hugelshofer, D. S., Shaw-Hegwer, J., ... Sheikh, J. I. (2003). The primary care PTSD screen (PC-PTSD): Development and operating characteristics. *Primary Care Psychiatry*, 9(1), 9–14.
- Rhoades, H., Wenzel, S. L., Golinelli, D., Tucker, J. S., Kennedy, D. P., Green, H. D., & Zhou, A. (2011). The social context of homeless men's substance use. *Drug* and Alcohol Dependence, 118(2-3), 320–325.
- Rice, E. (2011). HIV Risk in Large Social Networks of Homeless Youth R01 MH093336. Washington: National Institute of Mental Health.
- Ritchey, F. J., La Gory, M., & Mullis, J. (1991). Gender differences in health risks and physical symptoms among the homeless. *Journal of Health and Social Behavior*, 32(1), 33–48.
- Rog, D. J., Marshall, T., Dougherty, R. H., George, P., Daniels, A. S., Ghose, S. S., & Delphin-Rittmon, M. E. (2014). Permanent supportive housing: Assessing the evidence. *Psychiatric Services*, 65(3), 287–294.
- Salem, B. E., Nyamathi, A. M., Brecht, M. L., Phillips, L. R., Mentes, J. C., Sarkisian, C., & Leake, B. (2013). Correlates of frailty among homeless adults. Western Journal of Nursing Research, 35(9), 1128–1152.
- Slater, C. L. (2003). Generativity versus stagnation: An elaboration of Erikson's adult stage of human development. *Journal of Adult Development*, 10(1), 53–65.
- Smelson, D. A., Zaykowski, H., Guevermont, N., Siegfriedt, J., Sawh, L., Modzelewski, D., ... Kane, V. (2016). Integrating permanent supportive housing and co-occurring disorders treatment for individuals who are homeless. *Journal of Dual Diagnosis*, 12(2), 1–9.
- Smith, J. A., Braunack-Mayer, A., & Wittert, G. (2006). What do we know about men's help-seeking and health service use? *Medical Journal of Australia*, 184(2), 81–83.
- Somlai, A. M., Kelly, J. A., Wagstaff, D. A., & Whitson, D. P. (1998). Patterns, predictors, and situational contexts of HIV risk behaviors among homeless men and women. *Social Work*, 43(1), 7–20.
- Stein, J. A., Andersen, R., & Gelberg, L. (2007). Applying the Gelberg-Andersen Behavioral Model for Vulnerable Populations to health services utilization in homeless women. *Journal of Health Psychology*, 12(5), 791–804.
- Stein, J. A., & Gelberg, L. (1995). Homeless men and women: Differential associations among substance abuse, psychosocial factors, and severity of homelessness. *Experimental and Clinical Psychopharmacology*, 3(1), 75–86.

- Stergiopoulos, V., Dewa, C., Durbin, J., Chau, N., & Svoboda, T. (2010). Assessing the mental health service needs of the homeless: A level-of-care approach. *Journal of Health Care for the Poor and Underserved*, 21(3), 1031–1045.
- Strehlau, V., Torchalla, I., Li, K., Schuetz, C., & Krausz, M. (2012). Mental health, concurrent disorders, and health care utilization in homeless women. *Jour*nal of Psychiatric Practice, 18(5), 349–360.
- Teruya, C., Longshore, D., Andersen, R. M., Arangua, L., Nyamathi, A., Leake, B., & Gelberg, L. (2010). Health and health care disparities among homeless women. Women & Health, 50(8), 719–736.
- Tsemberis, S., & Eisenberg, R. F. (2000). Pathways to housing: Supported housing for street-dwelling homeless individuals with psychiatric disabilities. *Psychiatric Services*, 51(4), 487–493.
- Tucker, J. S., Kennedy, D., Ryan, G., Wenzel, S. L., Golinelli, D., & Zazzali, J. (2009). Homeless women's personal networks: Implications for understanding risk behavior. *Human Organization*, 68(2), 129–140.
- Umberson, D., & Montez, J. K. (2010). Social relationships and health a flashpoint for health policy. *Journal of Health and Social Behavior*, 51(1 suppl), S54–S66.
- United States Interagency Council on Homelessness. (2015). Opening Doors: Federal Strategic Plan to Prevent and End Homelessness. Washington, DC.
- United Way of Greater Los Angeles. (2016). Greater Los Angeles Coordinated Entry System Survey Packet Version 2.2, Vol. 2.2. Los Angeles.
- United Way of Greater Los Angeles. (n.d.). Using CES to fill your units/vouchers (Vol. 1.8). Los Angeles.
- Ware, J. E., Jr., Kosinski, M., & Keller, S. D. (1996). A 12-item Short-Form Health Survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care*, 34(3), 220–233.
- Wenzel, S. (2005). Alcohol use and HIV risk among impoverished women R01 AA015301. Washington, DC: National Institute on Alcohol Abuse and Alcoholism.
- Wenzel, S. (2009). Heterosexual HIV risk behavior in homeless men R01HD059307. Washington, DC: National Institute on Child Health and Human Development.
- Wenzel, S. L. (2014). HIV risk, drug use, social networks: Homeless persons transitioned to housing. R01 DA036345. Rockville, MD: National Institute on Drug Abuse.
- Wenzel, S. L., Green, H. D., Jr., Tucker, J. S., Golinelli, D., Kennedy, D. P., Ryan, G., & Zhou, A. (2009). The social context of homeless women's alcohol and drug use. Drug and Alcohol Dependence, 105(1–2), 16–23.
- Wenzel, S. L., Koegel, P., & Gelberg, L. (2000). Antecedents of physical and sexual victimization among homeless women: A comparison to homeless men. *American Journal of Community Psychology*, 28(3), 367–390.
- Wenzel, S. L., Rhoades, H., Hsu, H.-T., Golinelli, D., Tucker, J. S., Kennedy, D. P., ... Ewing, B. (2012). Behavioral health and social normative influence: Correlates of concurrent sexual partnering among heterosexually-active homeless men. AIDS and Behavior, 16(7), 2042–2050.

- Wilkins, C., & Elliott, J. (2010). Chronic Homelessness USICH Briefing Paper. Washington, DC: United States Interagency Council on Homelessness.
- Wright, B. J., Vartanian, K. B., Li, H. F., Royal, N., & Matson, J. K. (2016). Formerly homeless people had lower overall health care expenditures after moving into supportive housing. *Health Affairs*, 35(1), 20–27.
- Yang, Y. C., Boen, C., Gerken, K., Li, T., Schorpp, K., & Harris, K. M. (2016). Social relationships and physiological determinants of longevity across the human life span. *Proceedings of the National Academy of Sciences*, 113(3), 578–583.

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