Community-Level Characteristics Associated With Variation in Rates of Homelessness Among Families and Single Adults

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Objectives. We modeled rates of family and single-adult homelessness in the United States in metropolitan and nonmetropolitan regions and as a function of community-level demographic, behavioral, health, economic, and safety net characteristics.

Methods. We entered community-level characteristics and US Department of Housing and Urban Development point-in-time counts for a single night in January 2009 into separate mixed-effects statistical analyses that modeled homelessness rates for 4 subpopulations: families and single adults in metropolitan and nonmetropolitan regions.

Results. Community-level factors accounted for 25% to 50% of the variance in homelessness rates across models. In metropolitan regions, alcohol consumption, social support, and several economic indicators were uniquely associated with family homelessness, and drug use and homicide were uniquely associated with single-adult homelessness. In nonmetropolitan regions, life expectancy, religious adherence, unemployment, and rent burden were uniquely associated with family homelessness, and health care access, crime, several economic indicators, and receipt of Supplemental Security Income were uniquely associated with single-adult homelessness.

Conclusions. Considering homeless families and single adults separately enabled more precise modeling of associations between homelessness rates and community-level characteristics, indicating targets for interventions to reduce homelessness among these subpopulations. (*Am J Public Health*. Published online ahead of print October 22, 2013: e1–e8. doi:10.2105/AJPH.2013.301619)

On a single night in January 2012, 394 379 single adults accounted for 62% of the total number of people experiencing homelessness in the United States, and 239 403 persons in homeless families accounted for the remaining 38%.[1] Although homeless single adults outnumber persons in homeless families, each group represents a significant proportion of the total homeless population, and each possesses unique risk factors as well as pathways into and through the experience of homelessness.[1] Gaps in the understanding of these 2 homeless subpopulations persist, despite improvements in data collection. Although previous studies of homeless families and individuals have identified differences in health, behavioral, and demographic characteristics as well as patterns of homelessness, the extent to which these contrasts indicate the causal factors that contribute to their homelessness remains unclear.[2–4]

Several causal models of homelessness have integrated both individual- and community-level factors. These models have asserted that homelessness results from a convergence of factors at multiple levels: characteristics and experiences of individuals and households, as well as conditions and forces acting on communities. Community-level studies investigating the relationship between structural factors and community-level variation in total homelessness rates have translated into multidimensional models of homelessness; however, these studies have generally not stratified by household status.[5–7] In this article, we adopt the multidimensional framework for homelessness and assert that the set of predictive variables will differ among household types and among regions.

To date, little progress has been made in testing multidimensional models of homelessness separately for subpopulations of families and single adults; few studies have addressed the role that individual-level characteristics and behaviors play in the causal processes of homelessness for both families and single adults relative to community-level factors such as housing costs and unemployment rates. Progress in answering these questions has, up to this point, been stalled by gaps in the available data on homelessness. Studies that have identified differences in family and single-adult homelessness have often focused on individual-level characteristics because data that distinguish between family and single-adult homelessness have been available primarily at the individual or household level.

Studies examining geographic variation in rates of homelessness have often had divergent findings with respect to the community-level factors identified as significant predictors of variation in homelessness across communities. The most consistent set of findings has been a positive relationship between homelessness rates and rental market variables (e.g., median rent, presence of low-cost rental housing; D.W. Early and E.O. Olsen, unpublished manuscript, 2001).[7–18] Many studies have demonstrated relationships between homelessness rates at the community level and rental tenure, residential mobility, poverty, and unemployment (all positive), as well as rental vacancy rates (negative), although not all factors were statistically significant in all studies.[5–7,9–13,16,18–20] By contrast, measures derived from social safety net programs (e.g., Temporary Assistance for Needy Families, proportion of the population receiving benefits) have inconsistently predicted homelessness rates.[5,8,9,11–15,20,21] Few studies have included crime statistics in their models; among those that have, 2 found no association between crime rates and homelessness (D.W. Early and E.O. Olsen, unpublished manuscript, 2001),[17] and a third found the violent crime rate to be positively associated with homelessness.[10]

A possible explanation for the divergence in results across studies is the lack of differentiation between and separate examination of family and single-adult subpopulations experiencing homelessness. Only 3 studies have distinguished between family and single-adult homelessness

rates in their outcomes: 2 used data from a single state, and the other used data from a single city.[10,16,20] These studies found that economic factors—especially housing market indicators—were more significantly related to family than to single-adult homelessness.

A robust literature differentiating family and single-adult homelessness, and using data from a diverse set of jurisdictions, has yet to be developed and does not, at this time, support specific hypotheses. By exploring geographical variation at the national level as a function of demographic, behavioral, public health, economic, and safety net factors, we tested the assertion that the sets of variables predicting rates of family and single-adult homelessness differ. Including both subpopulations in 1 study permits a comparison of factors associated with homelessness among these populations as well as the development of more precise models of homelessness. Furthermore, we conceptualized homelessness as a challenging problem for all communities by exploring such associations in both metropolitan and nonmetropolitan regions.

METHODS

We used the US Department of Housing and Urban Development point-in-time counts of persons experiencing homelessness—in both unsheltered and sheltered situations—on a single night in January 2009 in 447 continuums of care (CoCs) throughout the United States. CoCs are geographical jurisdictions that allow efforts to address homelessness to be organized and administered. CoCs vary in size and composition, and they can consist of single cities, individual counties, several counties, or entire states and range from densely urban to highly rural. Although 54 primarily rural counties were not part of a CoC in 2009, more than 99% of the US population lived within the boundaries of a CoC. CoCs constituted the unit of analysis for this study.

Dependent Variables

We constructed 4 rates of homelessness using the US Department of Housing and Urban Development point-in-time estimates: the number of homeless families per 10 000 families in the (1) general population and (2) population living in poverty, and the number of homeless single adults per 10 000 single adults in the (3) general population and (4) population in poverty. We stratified the homeless outcomes by single adults and families, reflecting strong evidence demonstrating qualitative differences between the 2 populations.[22] Persons experiencing homelessness are almost universally poor; therefore, outcomes including the denominator from the poverty population, measured according to the US Census Bureau's poverty thresholds,[23] approximated the rate of homelessness among those at highest risk. We obtained denominators (i.e., general populations and populations in poverty) from population counts available from the American Community Survey 2005 to 2009 5-year estimates.[24]

Independent Variables

We collected independent variables at the county or state level from a number of sources related to 3 primary domains that have been associated with homelessness in prior studies: (1) demographic, behavioral, and public health; (2) economic; and (3) safety net. Table 1 lists the full set of variables along with their respective sources and years of measurement. We derived demographic, behavioral, and public health data from the following sources: the American Community Survey,[24] FBI Uniform Crime Reports,[25] Behavioral Risk Factor Surveillance System,[26] National Survey on Drug Use and Health,[27] County Health Rankings,[28] US Department of Health and Human Services, County Health Status Indicators Report,[29] and Religious Congregations and Membership Study.[30]

We derived economic variables (e.g., income, poverty, unemployment, housing market indicators) from the American Community Survey and measures of discretionary income and charitable donations from the How America Gives study.[31] Safety net variables on social spending and social program use were derived from the National Association of State Budget Officers annual report,[32] the American Community Survey,[24] and the US Department of Housing and Urban Development Picture of Subsidized Housing report.[33] We obtained additional proxies for safety net variables, including nonprofits per capita, from the National Center for Charitable Statistics.[34]

Although the CoC was the unit of analysis for the homelessness dependent variables, CoCs constitute geographies with irregular boundaries; measures of CoC-level characteristics—other than local housing inventory and homelessness rates—are nonexistent. We constructed CoC-level independent variables from county-level measures using a 2-step process and geographic information system software: we superimposed county centroids on a map of CoC boundaries to link with their appropriate CoC and then statistically adjusted county-level measures into CoC-level variables. A full explanation of this methodology is more fully described elsewhere.[35] Because of geographic overlap for some CoCs, a final set of 414 CoCs was available for analysis, which we stratified into metropolitan (n = 274) and nonmetropolitan (n = 140) CoCs using the US Department of Agriculture's Economic Research Service's definitions of rurality.[36] We removed CoCs in the states of Hawaii, New York, and Massachusetts from the homeless families models because of local right-to-shelter statutes that affect counts of homeless families,[37] resulting in a final sample of 245 metropolitan and 124 nonmetropolitan CoCs. For state-level variables, we assigned the same value to all CoCs within a state.

Statistical Analysis

We computed descriptive statistics for all variables and compared their distributions between metropolitan and nonmetropolitan CoCs using the independent-samples *t* test. In terms of modeling our outcomes, we used a linear mixed-effects modeling approach (i.e., multilevel modeling) with random intercepts for US states to account for clustering (we did not consider data from CoCs located in the same state independent of one another). We conducted a series of statistical models to understand which CoC variables were significantly associated with each of the 4 homelessness outcomes. In addition, we stratified CoCs by metropolitan and nonmetropolitan status and conducted analyses separately for each stratum. We also conducted separate models for clusters of demographic, behavioral, and health; economic; and safety net factors to compare patterns of results between families and single adults as well as across metropolitan and nonmetropolitan regions. We applied

TABLE 1—Descriptive Statistics for Study Variables, Stratified by Metropolitan and Nonmetropolitan Regions: US Department of Housing and Urban Development Point-in-Time Counts of Persons Experiencing Homelessness, January 2009

Variable	Source (Year)	Metropolitan Regions (n = 274)		Nonmetropolitan Regions (n = 140)	
		Mean ±SD	%	Mean ±SD	%
Dependent variables					
Homeless families, per 10 000 families	HUD PIT (2009)	11.51 ±12.52	0.12	13.48 ±28.51	0.13
Homeless families, per 10 000 families in poverty*	HUD PIT (2009)	138.97 ±155.20	1.39	129.20 ±239.66	1.29
Homeless single adults, per 10 000 adults*	HUD PIT (2009)	132.38 ±133.23	1.32	120.73 ±162.72	1.21
Homeless single adults, per 10 000 adults in poverty*	HUD PIT (2009)	675.09 ±675.71	6.75	461.22 ±654.11	4.61
Independent variables					
Demographic, behavioral, and public health					
Individuals consuming ≥ 2 alcoholic drinks/d, %	BRFSS (2009)	5.09 ±0.94		4.94 ±1.07	
Illicit drug users (excluding marijuana) in past mo, per 100 000	NSDUH (2008)	7408.48 ±1393.55		7445.22 ±1446.84	
Individuals drug dependent in past y, per 100 000	NSDUH (2008)	1751.95 ±217.38		1749.99 ±196.70	
Liquor store density, per 10 000	CHR (2006)	1.04 ±0.64		1.00 ±0.68	
Pregnancies with no care in first trimester, %	CHSI (2009)	15.46 ±6.05		17.15 ±5.36	
Births to single mothers, %	CHSI (2009)	34.49 ±10.30		35.89 ±6.72	
Individuals reporting no social support, %	CHR (2008)	19.80 ±4.11		19.05 ±3.33	
Homicides, per 100 000	CHR (2009)	6.79 ±5.17		6.79 ±4.35	
Motor vehicle thefts, per 100 000	UCR (2009)	257.05 ±103.63		256.03 ±93.77	
Average life expectancy,* y	CHSI (2009)	76.99 ±1.85		76.50 ±1.56	
Counties in CoC considered hospital shortage area,* %	CHSI (2009)	12.24 ±32.85		59.68 ±49.25	
Religious adherence,[a] %	RCMS (2010)	47.45 ±10.26		48.03 ±11.97	
Economic					
Median household income, in $1000s*	ACS (2005–2009)	57.09 ±14.30		44.03 ±6.61	
Unemployment, %	ACS (2005–2009)	7.39 ±1.80		7.68 ±1.92	
Median property value, in $1000s*	ACS (2005–2009)	245.42 ±143.04		158.86 ±96.81	
Overcrowded units (> 1 person/room), %	ACS (2005–2009)	2.21 ±1.78		1.97 ±1.37	
Rent cost ≥ 30% income,* %	ACS (2005–2009)	46.58 ±4.69		41.85 ±6.27	
Households with mortgage ≥ 30% income,* %	ACS (2005–2009)	37.00 ±8.09		32.89 ±8.30	
Renter-occupied housing units,* %	ACS (2005–2009)	32.11 ±8.53		29.25 ±5.94	
Units lacking complete plumbing,* %	ACS (2005–2009)	0.26 ±0.42		0.51 ±0.78	
Units lacking complete kitchens, %	ACS (2005–2009)	0.67 ±0.50		0.81 ±0.68	
Median discretionary income, in $1000s	HAG (2008)	5.57 ±0.65		5.49 ±0.44	
Median charitable contribution, in $1000s	HAG (2008)	2.59 ±0.70		2.69 ±0.77	
Safety net					
Households receiving SSI, %	ACS (2005–2009)	30.28 ±8.05		29.48 ±8.07	
Subsidized units/households in poverty,* %	HUD Picture of Subsidized Housing (2008)	23.43 ±10.50		16.39 ±6.35	
Medicaid spending as % of total state expenditures	NASBO (2009)	20.88 ±5.70		20.43 ±5.69	
TANF expenditures, per capita	NASBO (2009)	14.48 ±15.84		13.81 ±15.17	
Nonprofit agencies, per 1000	NCCS (2009)	1.17 ±0.57		1.15 ±0.46	

Note. ACS = American Community Survey; BRFSS = Behavioral Risk Factor Surveillance System; CHR = County Health Rankings; CHSI = County Health Status Indicators Report; CoC = continuum of care; HAG = How America Gives; HUD = US Department of Housing and Urban Development; NASBO = National Association of State Budget Officers; NCCS = National Center for Charitable Statistics; NSDUH = National Survey on Drug Use and Health; PIT = point-in-time; RCMS = Religious Congregations and Membership Study; SSI = Supplemental Security Income; TANF = Temporary Assistance for Needy Families; UCR = Uniform Crime Reports. The sample size was n = 414.

[a]Defined as affiliation with a congregation.

*Indicates significant differences between metropolitan and nonmetropolitan CoCs after independent-samples *t* test; $P < .01$.

a natural logarithmic transformation to each outcome variable because of their highly skewed nature.

We conducted initial variable screening procedures using univariate mixed-effects models. Only variables that were considered to be modifiable (i.e., potentially amenable to change through intervention) and nonredundant with other predictors ($r < 0.80$) and that had a P value of less than .2 were included in the multivariate models. We removed variables from multivariate models if they were not statistically significant in any of the models tested for metropolitan and nonmetropolitan subgroups separately. Analyses were conducted using the R environment for statistical computing (R Development Core Team, Vienna, Austria).[38]

RESULTS

Descriptive statistics for all study variables are presented in Table 1, stratified by metropolitan and nonmetropolitan region. Although rates of family homelessness in the general population were similar between metropolitan and nonmetropolitan regions, rates of homelessness among families in the poverty population as well as among single adults in both general and poverty populations were significantly higher in metropolitan regions ($P < .01$). Descriptive statistics for predictor variables are presented separately for metropolitan and nonmetropolitan CoCs for each domain.

Modeling Homelessness Rates for Metropolitan Continuums of Care

Demographic, behavioral, and health-related factors. Increased rates of homelessness among families were significantly associated with higher liquor store density, lower rates of first-trimester prenatal care, and increased motor vehicle thefts (Table 2). Increased rates of homelessness among families living in poverty were associated with higher levels of alcohol consumption, lower rates of single motherhood, and fewer individuals with no social support. These factors accounted for 33% to 41% of the variance in family homelessness outcomes. Rates of single-adult homelessness were elevated in communities with increased rates of drug use, homicide, and motor vehicle theft. Lower rates of drug dependency and single motherhood and higher rates of no prenatal care during the first trimester were associated with higher rates of homelessness among single adults living in poverty. These factors accounted for 47% to 49% of the variance in single-adult homelessness outcomes.

Economic factors. All metropolitan community economic factors included in the models were significantly associated with rates of homelessness among families in both the general and the poverty populations (with the exception of the proportion of renters paying more than 30% of their income in the latter), accounting for 41% and 47% of the variance, respectively (Table 2). Rates of homelessness among single adults were only explained positively and significantly by property values, the proportion of rental housing units, and the percentage of renters paying more than 30% of their income for rent, accounting for 58% (general) and 49% (poverty) of the variance.

Safety net factors. Few metropolitan community safety net variables were significantly associated with rates of homelessness among families, although they accounted for 27% to 39% of the variance (Table 2). Both the proportion of households with subsidized housing and nonprofit agencies per capita were positively associated with rates of homelessness among families. Alternatively, 50% to 53% of the variance in the rates of single-adult homelessness was explained by significant and positive associations with the proportion of households with subsidized housing and nonprofit agencies per capita and by a negative association with Medicaid spending.

Modeling Homelessness Rates for Nonmetropolitan Continuums of Care

Demographic, behavioral, and health-related factors. A higher average life expectancy and the proportion of births to single mothers were positively associated with rates of homelessness among families, and an increased rate of religious adherence was negatively associated, accounting for 25% and 32% of the variance in the 2 outcomes, respectively (Table 3). Increased rates of single-adult homelessness were associated with communities that were not classified as a hospital shortage area and increased motor vehicle thefts; these variables accounted for 54% and 46% of the variance in the 2 outcomes.

Economic factors. Several nonmetropolitan community economic factors were associated with increased rates of homelessness among families, including lower unemployment rates, increased proportions of renters paying more than 30% of their income for rent, and an increased proportion of housing units lacking complete kitchens, accounting for approximately 30% of the variance (Table 3). However, increased rates of homelessness among single adults were strongly associated with higher property values, lower household incomes, a larger proportion of households paying more than 30% of their income for mortgages, and a greater percentage of housing units lacking complete kitchens, accounting for 54% and 46% of the variance in the outcomes (Table 3).

Safety net factors. Only 1 safety net factor was associated with increased rates of homelessness among families in nonmetropolitan communities: higher Temporary Assistance for Needy Families expenditures, which accounted for 23% to 35% of the variance in the 2 family outcomes (Table 3). Higher Temporary Assistance for Needy Families expenditures were also significantly associated with increased rates of single-adult homelessness, as was a decrease in the percentage of adults receiving Supplemental Security Income, but only for the model including the general population in the denominator of this outcome; these models accounted for 53% and 46%, respectively, of the variance in rates of homelessness among single adults.

DISCUSSION

We explored how rates of homelessness among families and single adults were associated with demographic, behavioral, public health, economic, and safety net factors. Although the observed associations between community predictors and rates of homelessness cannot be presumed to imply causality, results show important differences between the factors that explain variation in homelessness rates for families versus individuals and also demonstrate that housing cost and income were key predictors for both groups. In general, findings using the population in poverty as the denominator for our outcomes were more pronounced than for those using the general population, as expected.

TABLE 2—Demographic, Behavioral, Health, Economic, and Safety Net Predictors of Homelessness Among Families and Single Adults for Metropolitan Areas: US Department of Housing and Urban Development Point-in-Time Counts of Persons Experiencing Homelessness, January 2009

Domain	Families (n = 245 CoCs)				Single Adults (n = 274 CoCs)			
	Homeless per 10 000 in Population, Estimate (95% CI)	Model R^2	Homeless per 10 000 in Poverty, Estimate (95% CI)	Model R^2	Homeless per 10 000 in Population, Estimate (95% CI)	Model R^2	Homeless per 10 000 in Poverty, Estimate (95% CI)	Model R^2
Demographic, behavioral, and health predictors		.41		.33		.49		.47
Intercept	0.62 (−0.36, 1.60)		4.32 (3.17, 5.47)		0.91 (−0.16, 1.98)		5.13 (3.96, 6.30)	
% of individuals consuming ≥ 2 alcoholic drinks/d, per 5%	0.10 (−0.46, 0.66)		0.72* (0.07, 1.38)		−0.16 (−0.83, 0.52)		0.19 (−0.54, 0.93)	
Drug dependency past y, per 100 individuals	−0.01 (−0.59, 0.58)		0.01 (−0.68, 0.69)		−0.57 (−1.23, 0.09)		−0.80* (−1.52, −0.09)	
Drug use past mo, per 100 individuals	0.09 (−0.02, 0.19)		0.00 (−0.12, 0.12)		0.22* (0.10, 0.35)		0.19* (0.05, 0.32)	
Liquor store density, per 10 000 individuals	0.17* (0.05, 0.30)		0.35* (0.20, 0.49)		−0.04 (−0.18, 0.11)		−0.02 (−0.18, 0.14)	
% of pregnancies with no care in first trimester, per 5%	0.11* (0.04, 0.19)		0.15* (0.05, 0.24)		0.06 (−0.03, 0.15)		0.10* (0.01, 0.19)	
% of births out of wedlock, per 5%	0.03 (−0.04, 0.10)		−0.15* (−0.23, −0.07)		0.04 (−0.03, 0.12)		−0.09* (−0.17, −0.01)	
% of individuals with no social support, per 5%	−0.04 (−0.18, 0.10)		−0.17* (−0.33, 0.00)		0.07 (−0.08, 0.22)		0.13 (−0.04, 0.29)	
Homicide rate, per 1000 individuals	0.31 (−2.09, 2.70)		0.66 (−2.14, 3.47)		3.14* (0.55, 5.73)		2.89* (0.08, 5.70)	
Motor vehicle thefts, per 1000 individuals	0.10* (0.01, 0.20)		0.13* (0.02, 0.25)		0.15* (0.03, 0.27)		0.22* (0.09, 0.35)	
Economic predictors		.41		.47		.58		.49
Intercept	1.44 (0.19, 2.69)		4.25 (2.80, 5.70)		0.47 (−0.77, 1.71)		4.75 (3.35, 6.14)	
Median property value, per $50 000	0.04* (0.01, 0.07)		0.17* (0.12, 0.21)		0.01 (−0.03, 0.04)		0.08* (0.04, 0.12)	
% overcrowded units, per 5%	−0.34* (−0.63, −0.04)		−0.66* (−1.01, −0.32)		−0.21 (−0.50, 0.08)		0.31 (−0.02, 0.64)	
% households paying rent ≥ 30% income, per 5%	0.11* (0.02, 0.20)		0.04 (−0.06, 0.14)		0.12* (0.03, 0.20)		0.07 (−0.02, 0.17)	
% renter-occupied housing units, per 5%	0.16* (0.10, 0.22)		0.07* (0.01, 0.14)		0.21* (0.16, 0.27)		0.07* (0.01, 0.13)	
% units lacking complete plumbing, per 5%	1.68* (0.74, 2.62)		1.37* (0.28, 2.46)		0.45 (−0.42, 1.33)		−0.13 (−1.12, 0.87)	
% units lacking complete kitchens, per 5%	−1.02* (−1.86, −0.18)		−1.48* (−2.45, −0.51)		−0.01 (−0.80, 0.79)		−0.28 (−1.18, 0.63)	
Median discretionary income, per $10 000	−0.15* (−0.29, −0.01)		−0.06* (−0.22, 0.11)		−0.05 (−0.19, 0.10)		−0.04 (−0.19, 0.12)	
Median charitable contribution, per $1000	−0.14* (−0.26, −0.02)		−0.21* (−0.35, −0.07)		0.01 (−0.11, 0.14)		0.03 (−0.10, 0.17)	
Safety net predictors		.27		.39		.50		.53
Intercept	1.86 (1.39, 2.33)		3.98 (3.37, 4.59)		2.54 (1.94, 3.15)		6.38 (5.76, 6.99)	
% subsidized units per households in poverty, per 1%	1.34* (0.49, 2.20)		1.26* (0.26, 2.27)		1.47* (0.65, 2.28)		1.92* (1.08, 2.76)	
Medicaid spending as % of total state expenditures, per 5%	−0.05 (−0.15, 0.04)		−0.07 (−0.20, 0.06)		−0.15* (−0.29, −0.02)		−0.21* (−0.34, −0.07)	
Nonprofit agencies, per capita	0.24* (0.06, 0.42)		0.44* (0.24, 0.65)		0.36* (0.18, 0.53)		0.15 (−0.03, 0.33)	

Note. CI = confidence interval; CoC = continuum of care. Values represent parameter estimates from multivariate multilevel statistical models, indicating percentage of change in homelessness rates per unit change as indicated after variable name (e.g., per 5% indicates that a 1-unit increase in the predictor variable corresponds to an increase of 5%).
*$P \leq .05$.

TABLE 3—Demographic, Behavioral, Health, Economic, and Safety Net Predictors of Homelessness among Families and Single Adults for Nonmetropolitan Areas: US Department of Housing and Urban Development Point-in-Time Counts of Persons Experiencing Homelessness, January 2009

Domain	Families (n = 245 CoCs)				Single Adults (n = 274 CoCs)			
	Homeless per 10 000 in Population, Estimate (95% CI)	Model R^2	Homeless per 10 000 in Poverty, Estimate (95% CI)	Model R^2	Homeless per 10 000 in Population, Estimate (95% CI)	Model R^2	Homeless per 10 000 in Poverty, Estimate (95% CI)	Model R^2
Demographic, behavioral, and health predictors		.25		.32		.54		.46
Intercept	−13.34 (−22.46, −4.22)		−23.52 (−35.13, −11.90)		−0.22 (−8.81, 8.37)		−1.64 (−12.70, 9.43)	
Average life expectancy, per y	0.20* (0.09, 0.31)		0.37* (0.23, 0.51)		0.03 (−0.07, 0.13)		0.09 (−0.05, 0.22)	
Hospital shortage area	0.03 (−0.28, 0.34)		−0.02 (−0.42, 0.37)		0.36* (−0.63, −0.10)		−0.38* (−0.73, −0.02)	
% births out of wedlock, per 5%	0.13* (0.01, 0.26)		0.11 (−0.06, 0.27)		0.05 (−0.06, 0.17)		0.04 (−0.11, 0.19)	
Motor vehicle thefts, per 1000 individuals	0.08 (−0.08, 0.23)		0.04 (−0.15, 0.24)		0.29* (0.11, 0.47)		0.43* (0.21, 0.64)	
% religious adherence,[a] per 5%	−0.11* (−0.17, −0.05)		−0.13* (−0.21, −0.05)		−0.06 (−0.12, 0.00)		−0.05 (−0.13, 0.03)	
Economic predictors		.27		.33		.54		.46
Intercept	0.74 (−1.53, 3.01)		1.29 (−1.63, 4.20)		2.22 (0.34, 4.10)		4.13 (1.60, 6.65)	
% unemployment, per 5%	−0.52* (−1.01, −0.03)		−0.87* (−1.50, −0.24)		−0.13 (−0.57, 0.30)		0.11 (−0.47, 0.69)	
Median property value, per $50 000	−0.04 (−0.25, 0.17)		−0.05 (−0.32, 0.22)		0.20* (0.03, 0.36)		0.18 (−0.05, 0.40)	
Median household income, per $1000	−0.02 (−0.05, 0.02)		0.02 (−0.02, 0.06)		−0.05* (−0.08, −0.02)		−0.02 (−0.06, 0.02)	
% households with mortgage ≥ 30% income, per 5%	0.16 (−0.06, 0.37)		0.16 (−0.12, 0.44)		0.14 (−0.04, 0.32)		0.24* (0.01, 0.49)	
% households paying rent ≥ 30% income, per 5%	0.29* (0.12, 0.45)		0.39* (0.18, 0.60)		0.06 (−0.07, 0.20)		−0.02 (−0.20, 0.15)	
% Renter-occupied housing units, per 5%	−0.11 (−0.25, 0.04)		−0.20* (−0.38, −0.01)		0.05 (−0.07, 0.17)		0.00 (−0.16, 0.17)	
% units lacking complete kitchens, per 5%	1.61* (0.51, 2.71)		2.06* (0.65, 3.47)		0.97* (0.05, 1.89)		1.07 (−0.17, 2.31)	
Safety net predictors		.30		.35		.53		.46
Intercept	2.48 (1.86, 3.09)		4.40 (3.58, 5.23)		2.74 (2.18, 3.31)		5.43 (4.69, 6.17)	
% households receiving SSI income, per 5%	−0.10 (−0.21, 0.01)		−0.11 (−0.26, 0.03)		−0.10* (−0.19, −0.01)		−0.03 (−0.15, 0.10)	
TANF expenditures, per $10	0.23* (0.08, 0.38)		0.33* (0.12, 0.54)		0.18* (0.05, 0.32)		0.23* (0.07, 0.39)	

Note. CI = confidence interval; CoC = continuum of care; SSI = Supplemental Security Income; TANF = Temporary Assistance for Needy Families. Values represent parameter estimates from multivariate multilevel statistical models, indicating percentage of change in homelessness rates per unit change as indicated after variable name (e.g., per 5% indicates that a 1-unit increase in the predictor variable corresponds to an increase of 5%).

[a]Defined as affiliation with a congregation.

*$P \leq .05$.

Metropolitan Areas

For both families and single adults residing in metropolitan areas, economic factors explained a greater proportion of variance in homelessness rates than did demographic, behavioral, and public health characteristics or safety net measures. The models confirm previous studies' findings that rental housing market factors, particularly housing costs, are the strongest predictors of homelessness, as are measures of household income (D. W. Early and E. O. Olsen, unpublished manuscript, 2001).[7–18] The results of the economic models fit more consistently with findings of research examining individual-level predictors of homelessness rates than do the results of demographic, behavioral, public health, and safety net models, which are more difficult to interpret, stemming in part from the fact that some of the measures may be representative of housed rather than homeless populations.

Several results from the demographic, behavioral, and health factors models contradicted findings from investigations including individual-level predictors. For instance, although drug use was positively and significantly associated with rates of single-adult homelessness, drug dependency was negatively associated. Several of these variables were both annual rates and state-level estimates and could represent broad proxies for other social or undetermined constructs. That these contrary findings were not replicated across all models suggests that they may not be robustly associated with homelessness; therefore, further research should replicate or refute these findings. Despite these contrary findings, several predictors that have received little attention in the literature—lack of prenatal health care, crime rates, liquor stores per capita—were significantly associated in this study with rates of homelessness among families and single adults. Although these characteristics were each associated with increased rates of homelessness, they may serve as proxy measures for broader constructs of community deprivation or social disorganization, which have been linked to increased levels of adverse health and social phenomena[39,40] and which may also occur simultaneously with or as a result of homelessness.

The economic models of homelessness among families and single adults presented here suggest that, although numerous housing market factors are related to family homelessness rates—including housing costs and income, housing tenure, and housing quality—single-adult homelessness is related more simply to housing costs (i.e., the ratio of rent to income or property value) and the presence of rental housing in the housing market.

Finally, the models including safety net measures were the poorest predictors of homelessness rates. Results from these models contradicted previous research that identified housing subsidies as 1 of the most consistent protective factors against homelessness at the individual level; we found a positive association with homelessness. Such a discrepancy highlights the difficulty in measuring the impact of safety net programs at the community level. In this case, these measures likely reflect the allocation of housing subsidies based on federal needs-based formulas. Interestingly, higher Medicaid spending per capita had a protective effect for single adults, indicating a key strategy for reducing homelessness at the community level.

Nonmetropolitan Areas

The importance of housing costs and income as positive and negative predictors of homelessness is further confirmed by the results of economic models of homelessness rates in nonmetropolitan areas. Additionally, the models for nonmetropolitan areas identified 2 unique findings. First, unemployment was a significant, but negative, predictor of homelessness among families in nonmetropolitan areas. This finding seems counter to the expectation that financial distress and housing loss may follow loss of employment; however, it may result from the link between the vitality of job and housing markets. Because housing is cheaper and more easily accessible in areas in which there are few jobs to move to, homelessness may be less prevalent in those nonmetropolitan areas. Second, the rate of Supplemental Security Income receipt is negatively associated with homelessness among single adults in the general population and not significant among the population in poverty, suggesting that success of the Supplemental Security Income program in reaching qualifying single adults may have a protective effect, demonstrating the importance of separate analyses for individuals and families.

Limitations

The primary limitation of this study is the use of community- but not individual-level variables. The results of the study cannot be easily applied to individual-level cases or data. Previous work has conceptualized the intersection of community- and individual-level factors in creating homelessness as a process of social selection[6] or a game of musical chairs[41] occurring in the context of housing scarcity. Although our results do not directly address the question of social selection into homelessness, the results do suggest variables that should be considered in future studies that consider individual-level characteristics.

Other limitations include the use of cross-sectional data and the number of state-level variables; the observed associations between these variables and the homeless outcomes should be interpreted cautiously and merit further investigation. In addition, several community-level measures were based on data from household surveys that may not have fully captured the homeless population, and 1 independent variable (religious adherence) was measured during the year after the homeless outcome measures used in this study. However, this variable was included given its close temporal proximity to the homeless outcome measures and because we intended to identify only associations and not causality. Finally, community characteristics identified in our models may not have direct causal relationships with rates of homelessness but may be proxies, such that they indicate social phenomena that are closely tied to experiences of homelessness.

Conclusions

Rates of homelessness among families were most strongly associated with housing adequacy, income, and unemployment and uniquely related to factors such as religious adherence as well as public health characteristics such as births to single mothers, prenatal care, alcohol availability and use, and life expectancy. Rates of homelessness among single adults were also highly related to economic factors, but also to demographic and safety net variables. Factors uniquely related to rates of homelessness among single adults included homicide rates,

drug use and dependence, Medicaid spending per capita, and percentage of Supplemental Security Income payees. Considering these 2 homeless subpopulations in separate models enabled the development of more precise models to understand associations with rates of homelessness. Our results confirm previous assertions that housing cost and income are the most important factors in determining community rates of homelessness, supporting the development of policies to prevent and reduce homelessness by addressing shortfalls between income and housing costs. This policy focus should apply to reducing both family and individual homelessness, as indicated by the stratified results. The characteristics associated with rates of homelessness identified in this study could serve as targets for interventions to reduce homelessness among these subpopulations. We found fewer factors to be associated with rates of homelessness among single adults and families in nonmetropolitan regions, suggesting more research is needed to understand factors related to variation in homelessness in rural areas. ■

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J. D. Fargo was responsible for project management, oversight of data collection, conducting analyses, and writing. E. A. Munley was responsible for project conceptualization, data acquisition, literature review, and writing. T. H. Byrne was responsible for data acquisition, geographic methodology, and writing. A. E. Montgomery was responsible for project conceptualization, data acquisition, and writing. D. P. Culhane was responsible for project conceptualization and writing.

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