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ABSTRACT

Some definitions of homelessness include doubling up—living with others because of economic hardship or housing loss. Doubling up can have negative consequences that should be addressed, but the U.S. Department of Housing and Urban Development's methods for enumerating homelessness exclude these arrangements, and Department of Education counts of doubling up include only school children. We provide a new method for measuring doubled-up homelessness in the total population using American Community Survey public use microdata. Using this method, we find that 3.7 million people in the U.S. population were doubled up in 2019 and show significant differences in doubling up by geography, race and ethnicity, marital status, educational attainment, school enrollment, and employment status, and compare these findings with research on sheltered and unsheltered homelessness. Notably, rates of Hispanic/Latinx doubled-up homelessness were high, in contrast to their rates of literal homelessness, and some rural areas with low rates of sheltered and unsheltered homelessness had high rates of doubling up. To aid in future research and policy, supplemental materials provide open-source tools for replicating the measure. Findings suggest that policies addressing homelessness and housing insecurity consider those experiencing doubled-up homelessness and that the current measure can assist in those efforts.

Across the United States, individuals and families are struggling to afford safe and secure housing (Joint Center for Housing Studies at Harvard University, 2020; National Low Income Housing Coalition, 2020). Although some federal, state, and local measures are in place to relieve housing cost burden, they do not meet the breadth of need. Only one in four of the nearly 18 million families eligible for federal rental assistance receive it (Joint Center for Housing Studies at Harvard University, 2020), and more than 7 million renter households have worst-case needs—making half or less of area median income; not receiving government housing assistance; and being severely rent burdened, living in severely inadequate conditions, or both (Watson, Steffen, Martin, & Vandenbroucke, 2020). With housing problems showing few signs of abating, researchers are steadily working toward comprehensive measures of housing insecurity by incorporating factors such as financial stress, poor physical conditions, crowding, frequent moves, and eviction (Routhier, 2019). By all measures, though, housing insecurities put people at risk of homelessness—typically understood as the bottom of the spectrum of housing problems (Rukmana, 2020).

The U.S. Department of Housing and Urban Development (HUD) defines homeless as those who lack a "fixed, regular, and adequate nighttime residence" (U.S. Department of Housing and Urban Development, 2009). Official estimates of homelessness reported by HUD include people staying in emergency shelter or transitional housing programs (sheltered homelessness) or staying in a place not meant for human habitation, such as a park, car, or abandoned building (unsheltered homelessness). HUD calls this *literal homelessness* and, using this definition, conducts one-night point-in-time (PIT) counts of sheltered and unsheltered homelessness produces 1-year administrative reports of sheltered homelessness (U.S. Department of Housing and Urban Development, 2020a, 2020b). According to these measures, more than half a million people experienced sheltered or unsheltered homelessness on a single night in January 2019 (U.S. Department of Housing and Urban Development, 2020a), and approximately 1.4 million experienced sheltered homelessness over the course of 2018 (U.S. Department of Housing and Urban Development, 2020b). However, to avoid these forms of homelessness, or when shelter space is inaccessible, many people who lose or cannot afford housing turn to doubling up—sharing a home with others when a home of their own is out of reach.

Although recognized by other federal agencies, other countries, and many researchers as a common form of homelessness, people doubling up do not meet HUD's current definition and are not included in its estimates. Therefore, methods for measuring doubled-up homelessness in the United States are limited. Currently, the lone existing annual count comes from the Department of Education (DoE) and only includes school-age children, without information on their characteristics (U.S. Department of Education, 2001, 2020). This article addresses this gap by introducing a measure to annually estimate doubled-up homelessness for the entire U.S. population using publicly available American Community Survey (ACS) data.

This measure helps capture a different dimension of homelessness and can improve understanding of the scope of homelessness overall, which is critical for effective policymaking. Estimates of the number of people experiencing differing forms of homelessness, including doubled-up homelessness, help guide decisions regarding resource allocation for shelter and services, rental assistance and prevention, and the development of affordable housing. Because of its importance, the issue of quantifying homelessness is one that researchers have long debated and aimed to improve upon, and measuring its more hidden forms has been a central, yet unresolved, challenge (Cordray & Pion, 1991; Hopper, Shinn, Laska, Meisner, & Wanderling, 2008; Koegel, Burnam, & Morton, 1996; Roncarati, Byrne, & McInnes, 2021; Rukmana, 2020; Smith & Castañeda-Tinoco, 2019). Outside of the United States, European efforts to broaden the range of situations considered homelessness have resulted in a typology for cross-country data that includes doubling up, and 14 European countries include such situations in their official definitions of homelessness (Baptista & Marlier, 2019). We add to this work by providing a new measure that can be used to estimate doubled-up homelessness in the total U.S. population, in demographic subpopulations, and for individual states, cities, and other local levels. In addition to improving enumeration of homelessness to accurately scale resources, this measure can inform policy design to specifically address the needs of people doubling up.

The first section of this article provides an overview of the literature on household sharing in the United States, which shows how, for many low-income individuals and families, doubled-up situations are often inadequate because of unstable and unsafe conditions. Next, we explore how doubled-up homelessness has been measured in past research and discuss the limitations to these existing methods. Then, we describe our new measure of doubled-up homelessness, which we define based on household relationships, geographically adjusted poverty level, and overcrowding. We follow this with an estimate of the number of people who experienced doubled-up homelessness in 2019 and an analysis of the geographic and demographic characteristics associated with doubling up. Finally, we discuss the policy implications of our findings for understanding the nature of homelessness in the United States and accurately responding to the nation's urgent housing needs.

Background and Literature Review

Doubling Up Across All Households

In its most inclusive definition, doubled-up households are defined based on the presence of any adult who is not the householder or the householder's partner (Harvey, 2020). However, most studies adopt a more nuanced definition. For example, some include all adult children of the householder (Mykyta & Macartney, 2011; Pilkaukas et al., 2014), whereas others include only those who surpass young adulthood (Eggers & Moumen, 2013; Mykyta & Macartney, 2016) or who are co-residing with children of their own (Wiemers, 2014). Additionally, most survey-based studies of doubling up include household sharing at all income levels, whereas some limit their scope to households at certain thresholds of income or poverty (Kang, 2019). In general, conceptual definitions of doubling up rely on differentiating subfamilies, considering social, cultural, and economic influences, and adapting definitions based on specific research aims (Ahrentzen, 2003; Koebel & Murray, 1999).

In the past decade, Census Bureau and HUD researchers have made use of the Current Population Survey (CPS) and American Housing Survey (AHS), respectively, to examine doubling up across households irrespective of income level (Eggers & Moumen, 2013; Mykyta & Macartney, 2011). Using the Annual Social and Economic Supplement of the CPS, Mykyta and Macartney (2011) found that 46 million, or 20% of all adults, were an *extra adult* in a shared household in 2010. According to this study and similar analyses that followed, extra adults were more likely to be in poverty and unemployed, and household sharing increased during the Great Recession as people coped with economic conditions by combining households (Eggers & Moumen, 2013; Mykyta & Macartney, 2011, 2012; Taylor et al., 2010; Wiemers, 2014). In response, a 2013 supplement to the AHS focused on doubling up and found that almost one third of household members who recently moved in or out did so because of an inability to pay for their own housing (U.S. Department of Housing and Urban Development, 2020b, September).

Effects of Doubling Up in Low-Income Households

With the understanding that doubling up is associated with economic conditions, most research has focused on low-income households. Such studies confirm that doubling up functions as a private safety net in response to housing insecurity (e.g., increased rent, loss of income, and eviction), helping people avoid shelters or the street, filling in the gaps when shelter space is inaccessible or unable to accommodate a whole family, and allowing households to pool resources (Desmond, 2012; Harvey, 2020; Pilkauskas et al., 2014; Skobba & Goetz, 2013; Wiemers, 2014). However, studies also reveal the ways in which doubling up can strain both hosts and guests, with consequences for social, mental, physical, and economic well-being.

Qualitative research on doubled-up, low-income families describes the benefits of leaning on social ties but also highlight tenuous living situations characterized by conflict, stress, uncertainty, and lack of autonomy (Bush & Shinn, 2017; Cusack & Montgomery, 2019; Skobba & Goetz, 2015). Whereas doubling up may allow children to leave unsafe living situations, it may also expose them to unwelcoming environments and frequent moves while disrupting their education (Ahrentzen, 2003; Harvey, 2020). Although people in these arrangements can share resources, there is evidence that doubled-up households experience increased strain on limited income and space (Clampet-Lundquist, 2003) and are more likely to be food insecure, with particular risk for children (Cutts et al., 2011). In addition, individuals and families who are doubling up do not have legal rights to their housing and can be asked to leave at any time.

Literature on doubling up also describes situations that are overcrowded (Bush & Shinn, 2017; Clampet-Lunquist, 2003), and substantial research links residential crowding to poor mental and physical health (Evans, 2003; Krieger & Higgons, 2002). Notably, crowding may contribute to or exacerbate conditions that make infectious diseases, such as COVID-19, more transmittable and harmful through increased risk of exposure to infectious air droplets and reduced air quality (Baker,

Das, Venugopal, & Howden-Chapman, 2008; Colosia et al., 2012; Mehdipanah, 2020). In fact, preliminary research examining not just crowding but doubling up (specifically, the merging of households in response to eviction) predicts significant increases in COVID-19 infections in poor neighborhoods without eviction moratoria (Nande et al., 2021), emphasizing the unique connection between this form of housing insecurity and health.

Doubling Up as Hidden Homelessness

Finally, whereas doubling up may help segments of the population during experiences with housing and economic hardship, scholars and policymakers argue that for many low-income individuals and families, doubling up is a form of hidden homelessness (Link et al., 1994; National Center for Homelessness Education, 2017; Rog, Holupka, & Patton, 2007; Vacha & Marin, 1993; Wright, Caspi, Moffitt, & Silva, 1998). Doubled-up homelessness is distinguished from broader household sharing by how permanent, voluntary, and adequate the doubled-up arrangement is, and whether a person would be on the street or in shelters if not for their "informal shelter provider" (Vacha & Marin, 1993, p. 25). Doubling up of this nature is documented as both a precursor to street and sheltered homelessness (Wright et al., 1998) and a negative situation that many families enter after shelter (Bush & Shinn, 2017). However, despite the risks associated with it, doubled-up homelessness is not incorporated into official estimates of total homelessness, potentially obscuring understandings of the nature and extent of the problem and misinforming policies to address it. As Lee, Tyler, and Wright (2010) note, "housing hardship forms a continuum not easily dichotomized into homeless and nonhomeless segments" (p. 503). Although this is not easy, researchers and policymakers are consistently tasked with defining homelessness, whether to specify eligibility for homeless services, determine the size of the problem to inform funding scale, or research its causes and correlates. One method for mitigating this definitional challenge is by specifying and enumerating different forms of homelessness.

Measuring Doubled-Up Homelessness

Although census and HUD studies have examined doubling up across all households (Mykyta & Macartney 201; Eggers & Moumen, 2013) and quantify the problems of very low-income renters through "worst case needs" (Watson et al., 2020),[1] estimating the number of low-income individuals who are not formally part of a renting household and who would otherwise be literally homeless is a challenge for researchers. In 1990, a nationally representative phone survey asked respondents whether they had ever "considered [themselves] homeless," and then asked where they stayed during that period (Link et al., 1994, p. 1909). Results showed that nearly as many people considered themselves homeless while staying in a friend or relative's home as they did when staying in a shelter or unsheltered location. Estimated lifetime prevalence of homelessness in shelters and unsheltered locations was 7.4%, rising to 14% when doubling up was included. More recently, a national phone survey of youth and young adult homelessness included "staying with others while lacking a safe and stable alternative living arrangement" in its definition (Morton et al., 2018, p. 15). They found that 1.3% of 13- to 17-year-olds and 4.5% of 18- to 25-year-olds had doubled up in the last 12 months. These studies offered important findings demonstrating the extent of doubling up as a form of homelessness for a cohort of adults and young adults. However, annual, state, and local estimates remain unmeasured.

Currently, the only annual data on doubled-up homelessness is collected by the DoE and available for school districts and states. Although HUD counts only people who are sheltered or visibly unsheltered, the McKinney–Vento Act (2001) requires public schools, in their identification of children eligible for federally funded programs, to include those "who are sharing the housing of other persons due to loss of housing, economic hardship, or a similar reason" (U.S. Department of Education, 2001). One million students lived doubled up by the DoE definition in the 2018–2019 school year (U.S. Department of Education, 2020). Data from schools includes only school-age children, but about half of children

experiencing sheltered homelessness are too young to be in school (U.S. Department of Housing and Urban Development, 2020b, September), suggesting that the data miss a substantial portion of doubled-up children. These counts also include only children, not their family members, and miss all families and individuals without children. Moreover, the publicly available data are aggregate counts submitted by school districts, do not include demographic variables for students identified as homeless, and have varying data quality issues by state (National Center for Homeless Education, 2021; U.S. Department of Education, 2018).

Finally, the National Alliance to End Homelessness (NAEH) has used the ACS to estimate the total number of people in poor households who are doubled up and at risk of literal homelessness for its *State of Homelessness* reports. The ACS is the largest household survey in the United States (U.S. Census Bureau, 2021). In contrast to the AHS and CPS, ACS microdata allow for estimates for all states, metro areas, and smaller geographies known as Public Use Microdata Areas (PUMAs), and the survey includes many more variables at the individual level.[2] Although their definition has varied over time, NAEH's 2020 report considered a person doubled up and at risk of homelessness if they were a poor nonrelative or relative, excluding spouses, minor children, and adult children and grandchildren in school (National Alliance to End Homelessness, 2020).

The Current Study

NAEH has used the ACS to publish national and state estimates of doubling up among poor households that have been useful for advocacy and policy, but additional considerations are required to estimate a conservative measure of the population experiencing doubled-up homelessness. Moreover, the difficulty of replicating measures using microdata necessitate sharing detailed methodology to encourage its use. The goal of this article is to advance a consistent measure of doubled-up homelessness that can be estimated at national, state, and local levels and associated with other individual and community characteristics. Using the ACS, the current study proposes a conservative definition of included household members, incorporates overcrowding and geographic variation in housing costs to assess economic hardship and adequacy of housing, and shares information for reproducing the measure. We then compare our measure with existing measures of homelessness, present a national figure for 2019, and examine the individual, household, and geographic characteristics associated with being doubled up in the general U.S. population and among those in poverty.

Methods

Data

To estimate a total number of individuals experiencing doubled-up homelessness and describe their individual, household, and geographic characteristics, we used ACS 2019 1-year microdata obtained from Integrated Public Use Microdata Series (IPUMS; Ruggles et al., 2019). ACS microdata are nationally representative 1-in-100 random samples of the population, obtained on a rolling basis (a small percentage of the population sampled every month), with the smallest identifiable geographic unit (PUMA) containing at least 100,000 persons. ACS 1-year data are designed to describe average characteristics of the United States over a given year. All ACS variables included in the study are listed in the Supplementary Material (see Supplement C). To compare this measure with other measures of homelessness, we obtained HUD PIT count data for overall (sheltered and unsheltered) homelessness for 2019 for all Continuums of Care (CoCs) and states (HUD, 2020c) and DoE data by state (U.S. Department of Education, 2020). To map literal homelessness rates, we used CoC population totals developed by Byrne and colleagues from ACS 2016 5-year estimates.[3]

Measure of Doubling Up

Constructing the measure of doubled-up homelessness was a collaborative and iterative effort led by the authors and informed by prior research and feedback from both homeless service providers and families with lived experience of homelessness.[4] ACS surveys do not ask whether household members are present because of housing loss or economic hardship, so we defined doubled-up homeless persons as poor or near-poor individuals in a poor or near-poor household (at or below 125% of a geographically adjusted poverty threshold)[5] who met the following conditions: a relative that the household head does not customarily take responsibility for (based on age and relationship); or a nonrelative who is not a partner and not formally sharing in household costs (not roomers/roommates).[6] Single adult children and relatives over 65 may be seen as a householder's responsibility, so such cases are included only if the household is overcrowded—an arrangement that we believe, based on the literature and feedback from experts working in the homelessness response system, provides evidence of economic hardship and involuntary doubling up (Ahrentzen, 2003; Carillo et al., 2016; Wright et al., 1998). Table 1 describes detailed inclusion criteria.

    Adjusted Poverty Measure. Determining doubled-up status also requires assessing whether people would be able to afford housing on their own. Housing costs vary across the country, so we adjusted poverty following the method of the Supplemental Poverty Measure (Renwick, 2011). This geographic adjustment relies on comparing area median rents for a standard unit (two-bedroom units with full kitchen and plumbing facilities) and adjusting the portion of a household's poverty threshold allocated toward housing, based on housing tenure status group (i.e., owning versus renting). Adjustment factors were calculated using the following formula, where a denotes geographic area (PUMA), h denotes housing tenure status group (owners with mortgages, owners without mortgages, or renters),[7] and n denotes national: $Factor_{ah} = HousingShare_h \times (Rent_a/Rent_n) + (1 - HousingShare_h)$. Since ACS poverty variables express income as a percentage of poverty thresholds, we then adjusted ACS poverty by dividing it by $Factor_{ah}$. For example, if unadjusted poverty was 150% of the federal poverty threshold and the adjustment factor was 1.2, adjusted poverty would be 150/1.2, or 125% of the area threshold.

Data Analysis

Analyses for this article were conducted in SAS version 9.4. Both SAS and open-source R code for reproducing the measure are included in Supplements D and E. Person weights were applied to all analyses to approximate representative statistics. Margins of error at 90% confidence levels were

Table 1. Household members who are considered doubled up, if poor or near poor.

- **Adult children and children-in-law**
- Who have children of their own, who are married, or who are single but living in an overcrowded situation (i.e., more than two people per bedroom).
  - ○ **Grandchildren**
  - ○ Minor and adult grandchildren, excluding:
  - ○ Minor grandchildren of the household head when the household head claims responsibility for their needs (asked directly by the American Community Survey).
  - ○ Minor grandchildren whose single parent is living at home and is under 18 (i.e., children of teenage dependents).
  - ○ **Other relatives**
  - ○ Parents/parents-in-law, siblings/siblings-in-law, cousins, aunts/uncles, and other unspecified relatives of the household head who are under the age of 65, excluding:
  - ○ Minor siblings of the household head when the minor's parent is not present (so that the household head may assume responsibility for minor siblings).
  - ○ Single and childless adult siblings of the household head, when the household head is also single with no children—resembling a roommate situation.
  - ○ Parents/parents-in-law, siblings/siblings-in-law, cousins, aunts/uncles, and other unspecified relatives of the household head who are over age 65 and in an overcrowded situation.
  - ○ **Nonrelatives**
  - ○ Individuals unrelated to the householder, including friends, visitors, and other nonrelatives, excluding:
  - ○ An unmarried partner or their children, roommates/housemates, and roomers/boarders.

calculated using standard errors from jackknife repeated replication simulation, which uses replicate weights following census and IPUMS guidelines (Minnesota Population Center, n.d.; U.S. Census Bureau, 2019). Different measures of homelessness were compared using Pearson correlations. Bivariate analyses examining relationships between doubling up and other variables were conducted using Rao–Scott adjusted chi-square tests to account for survey design (Rao & Scott, 1981). Maps were created using QGIS version 3.10, where data were classified using rounded Jenk's natural breaks, a goodness-of-fit optimization method (Jenks, 1967). CoC shapefiles were downloaded from HUD's office of Community Planning and Development, and PUMA shapefiles were downloaded from the Minnesota Population Center.

Results

Comparison With Existing Homelessness Measures

HUD Homelessness Counts. Table 2 compares the current measure with existing measures of homelessness. Based on ACS 1-year data, there were 3,717,589 people—1.2% of the population—doubled up in the United States in 2019. ACS questionnaires refer to a single point in time, so this figure is most comparable with the PIT count of literal homelessness of 567,715, or 0.017% of the population, in January 2019. The correlation of these two measures across 50 states and the District of Columbia is 0.44 ($p = .001$). A moderate correlation of this nature indicates that although the measures capture different dimensions of homelessness, they are related. Similar economic and housing market factors likely contribute to both forms of housing hardship, and people often move between doubling up and literal homelessness during the same period of housing instability.[8]

However, several factors influence PIT data that do not impact the ACS measure of doubling up. Because people experience homelessness episodically, often moving in and out of homelessness, more people experience it over a year than are counted on a single night. Because the ACS is a rolling PIT count, with households sampled every month of the calendar year, bias attributed to the PIT count of literal homelessness being conducted once in January is not shared by our doubling up measure. Additionally, counts of sheltered homelessness depend on the availability of emergency shelters and other services, which vary within and across states. For example, rural areas have fewer shelters and limited transportation to facilitate access, leading researchers to suggest that shelter-based PIT counts underrepresent need in these areas (Robertson, Harris, Fritz, Noftsinger, & Fischer, 2007). On the other hand, some states have right-to-shelter policies and counts of sheltered persons that, in theory, align with need. Assessment of unsheltered counts reveals underestimation even in major cities, because of weather, number of volunteer enumerators, and lack of training (Hopper et al., 2008; Roncarati et al., 2021; U.S. Government Accountability Office, 2020). A recent federal assessment of PIT counts stated concern for large year-to-year changes, particularly in suburban and rural areas, and suggested such changes are unlikely to represent real population change but may instead reflect fluctuating capacity (Government Accountability Office, 2020). Therefore, in addition to measuring a different dimension of homelessness than those included in the PIT count, the ACS may provide estimates that are less biased by resources or toward individuals experiencing visible forms of homelessness.

DoE Doubled-Up Counts. Of the 3.7 million people doubled up by the ACS measure, an estimated 737,886 were school-age children. Across states and DC, the rates of school-age children doubling up shows a correlation of 0.51 ($p = .0001$) with DoE figures, which are based on parents' report at school enrollment and updated by school personnel throughout the year. By DoE counts, there were 1.04 million doubled-up students in school year 2018–2019. These two measures aim to capture the same form of homelessness. Time-frame differences likely explain why the DoE count is larger, with the ACS representing an average PIT count, and the DoE providing period prevalence for the school year. Differences in how data are collected are also important and may help explain the moderate correlation.

Table 2. Comparison with existing homelessness measures.

Measure	2019 estimate (millions)	Time frame	Definition	State-level correlation with ACS doubling up
ACS doubling up	3.7 total 0.74 school age (5 to 17 years)	Rolling point-in-time	Current measure of additional poor/near-poor relatives and nonrelatives (see Table 1)	–
DoE Doubling up	1.04 school age[a]	Period prevalence	Public school children sharing the housing with others because of loss of housing, economic hardship	0.51 (school-age children)[a]
HUD Homeless[b]	0.57	Point-in-time	Sheltered and unsheltered homeless	0.44

[a]Tabulated from school year 2018–2019 data (U.S. Department of Education, 2020).
[b]Calculated using the ACS 2017 1-year sample and rates of doubled-up students per all enrolled students for the 2016–2017 school year, the most recent time frame for which these rates have been published by DoE. Estimates from HUD's one-year administrative data are not available at the state or Continuum of Care level, so it is not possible to measure that correlation.

Although DoE counts aim to record the total population of students experiencing homelessness and their primary nighttime residence (unsheltered, sheltered, doubled up, or hotel/motel), this depends on student or family self-report or inquiries by school personnel. Stigma associated with homelessness and fear of child welfare involvement often prevents students and families from reporting homelessness (Cunningham, Hardwood, & Hall, 2010; Edwards, 2020; Ingram, Bridgeland, Reed, & Atwell, 2017; Miller, Pavlakis, Samartino, & Bourgeois, 2015). At the level of school personnel, studies that examine McKinney–Vento program implementation barriers highlight funding issues, noting that districts with McKinney–Vento subgrants have more training, dedicated staff, and incentive to identify students as homeless because they can offer them more services, and, as a result, these districts identify a disproportionate number of homeless students nationally (Hallett, Skrla, & Low, 2015; Miller & Bourgeois, 2013).[9] Federal reporting indicates that only 23% of school districts receive subgrants (National Center for Homless Education, 2021). Finally, data quality issues include variability in whether preschool students are counted, missing data for nighttime residence across several states, and measurement sensitivity attributed to policy rather than student need (U.S. Department of Education, 2018).[10]

Despite these limitations, DoE counts attempt to enumerate doubled-up homelessness across the total population of public-school students. On the other hand, the ACS is a sample survey, estimating characteristics of the total population using a randomly selected sample. Therefore, there are levels of uncertainty about the true population's characteristics that vary by item, demographics, and geography (Spielman, Folch, & Nagle, 2014). The Census Bureau employs complex processes to minimize and understand the uncertainty of the ACS, including extensive research and evaluation of its sampling techniques and questionnaire design, data collection procedures that are standardized across the country, and controlling for differential response rates by weighing responses to official population estimates by age, sex, race, and Hispanic origin (U.S. Census Bureau, 2020). Unlike in schools, respondents are not identifying members of their household as homeless or reporting their arrangement to members of their community, and thus are unlikely to be impacted by stigma or fear of government involvement.

The different methodological strengths and limitations of DoE and ACS measures may suggest that DoE counts of doubled-up children are more accurate in jurisdictions with strong McKinney–Vento implementation, whereas the ACS estimates may provide consistency across jurisdictions and, notably, more transparent information on levels of uncertainty (i.e., margins of error). DoE data depend on self-reported homelessness, but ACS estimates would include individuals who may not identify themselves as homeless, but are living in a shared housing situation that is likely due to economic hardship, including youths under 18 who are not in school.

Mapping Doubled-Up Homelessness

Next, we examine doubling up spatially and compare it with sheltered and unsheltered homelessness. Some states, such as Alaska, California, the District of Columbia (DC), New York, and Hawaii suffer from high rates of both. In contrast, Mississippi, Louisiana, Alabama, New Mexico, and Arizona have some of the highest rates of doubling up but lower than average rates of literal homelessness. Supplemental Table A shows the number of people doubled up and literally homeless per 10,000 in the population for each state and for DC in 2019. Figures 1 and 2 map these measures. Sheltered and unsheltered homelessness data are available at the CoC level, unique geographic areas through which HUD administers homeless services funding. Doubling-up data are available at a smaller unit, PUMAs, and reveal greater within-state variation. For example, South Dakota's doubling-up rate (0.79%) is less than the national rate, but the Lakota Region, 44% Native American and home to several reservations (U.S. Census Bureau, 2021), has a very high doubling up rate (4.7%). Supplemental Table B shows the 50
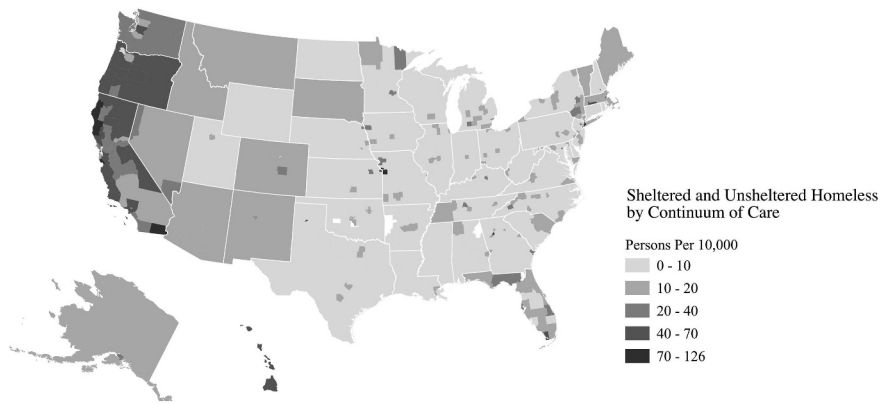
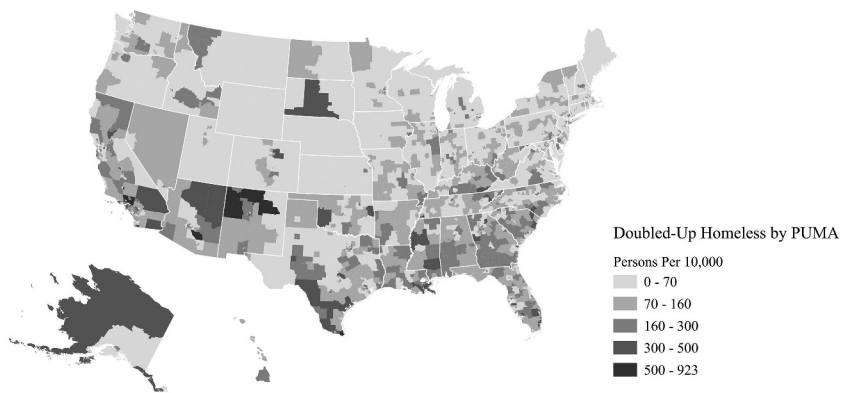**Figure 1.** Sheltered and unsheltered homelessness in the United States, 2019.

Figure 2. Doubled-up homelessness in the United States, 2019.
Note. PUMA: Public Use Microdata Area

PUMAs with the highest rates, predominantly major cities (the highest rate, 9.23%, was found in Northeast Philadelphia), but also including a rural area of Mississippi and two areas containing tribal lands (Lakota Region in South Dakota and Navajo Nation in New Mexico).

Selected Characteristics of Individuals Who Are Doubled Up

Tables 3 and 4 describe how geographic, housing, and demographic variables relate to doubling up at the person level. Analyses were conducted in two ways: (a) with the denominator as the total population and (b) with the denominator as the population at or below 125% of the adjusted poverty level. Some studies compare people experiencing homelessness with the total population, whereas others compare with those who are low-income but not homeless. Although our measure of doubled-up homelessness requires being in or near poverty and staying in a poor or near-poor household, not all individuals who met these criteria were categorized as doubled up, based on housing arrangement. Therefore, the second approach allows us to examine characteristics associated with doubling up specifically among those in or near poverty.

Geographic Distribution. Individual-level analyses help confirm the geographic patterns observed in Figures 1 and 2. Among the four census regions, people in the West were most likely to be doubled up, followed by those in the South, then Northeast, then Midwest. The pattern was the

Table 3. Geographic and housing characteristics of people living doubled up in 2019.

	Doubling up among all individuals				Doubling up among individuals at or below 125% adjusted poverty			
	Percentage doubled up	Margin of error for percentage	P	F	Percentage doubled up	Margin of error for percentage	P	F
Region			<.001	146.1			<.001	79.4
Northeast	1.03	±0.05			7.30	±0.20		
Midwest	0.68	±0.04			5.63	±0.17		
South	1.30	±0.04			8.50	±0.14		
West	1.45	±0.05			9.43	±0.18		
Metropolitan status[a]			<.001	55.5			<.001	39.5
Not in metropolitan area	0.98	±0.04			7.04	±0.27		
In metropolitan area	1.21	±0.03			8.27	±0.17		
Tenure status			<.001	2,269.4			<.001	150.7
Owned or being bought	0.71	±0.02			9.55	±0.27		
Rented	2.07	±0.05			7.26	±0.17		
Total	1.16	±0.02			8.04	±0.15		

Note. All estimates are calculated using person weights and exclude people living in group quarters.
[a]Metro status does not include *Metropolitan status indeterminable (mixed)*.

same among poor or near-poor individuals. Rates of literal homelessness are also high on the West Coast, but they tend to be lower in Southern states (U.S. Department of Housing and Urban Development, 2020b, September). Although rates of doubling up are relatively lower in the Northeast, rates of sheltered homelessness are especially high in this region (U.S. Department of Housing and Urban Development, 2020b, September). There was also a significant relationship between doubling up and living in a metropolitan area among the total population and those who are poor or near poor. Sheltered and unsheltered homelessness is also more common in urban areas. Additionally, people doubling up in metropolitan areas were more likely to be overcrowded (37%) than people doubling up in nonmetropolitan areas (27%).

Tenure Status of Host. Across the total population, individuals are more likely to double up in renting households. However, this is likely explained by the fact that the host household must be in or near poverty, because among the sample under 125% of adjusted poverty, doubled-up homelessness is more likely to take place in a homeowning household.

Age and Overcrowding. Rates of doubling up among different age groups must be interpreted with the age-based inclusion criteria for doubling up in mind. Moreover, considering relationship to the household head and crowding can help explain the findings. Despite young adult children being limited to those who were married, had children of their own, or were overcrowded, this age group still had the greatest rate of doubling up among the total population and those in or near adjusted poverty (an estimated 863,898 individuals). Of this age group, one third were single adult children of the household head who were living in overcrowded households. Grandchildren were the next highest share (20.5%), followed by other relatives (17.7%), single adult children with children of their own (14.1%), nonrelatives (12.1%), and married children (2.3%). On the other hand, adults 65 and over were limited to nonrelatives and overcrowded relatives, and we see the lowest rates of doubling up in this age group. Of the older adults experiencing doubled-up homelessness (an estimated 119,325 individuals), approximately 60% were older relatives experiencing overcrowding and 40% were nonrelatives.

Gender and Marital Status. In the total population, adult women were more likely to be doubled up than men (unfortunately, other sex and gender categories are not available in the ACS). However, this relationship is likely explained by higher poverty rates among women, because among those in or near the adjusted poverty level, men showed a higher rate of doubling up (8.7% versus 8.3%). Men

Table 4. Demographic characteristics of people living doubled up in 2019.

	Doubling up among all individuals				Doubling up among individuals at or below 125% adjusted poverty			
	Percentage doubled up	Margin of error for percentage	P	F	Percentage doubled up	Margin of error for percentage	P	F
Age[a]			–	–			–	–
0 to 4	1.92	±0.09			8.29	±0.38		
5 to 17	1.38	±0.05			6.71	±0.25		
18 to 24 years	3.19	±0.09			16.59	±0.46		
25 to 64 years	0.97	±0.03			8.52	±0.20		
65 years or more	0.23	±0.02			1.84	±0.13		
Sex (population 18+)			<.001	180.5			0.004	9.1
Male	0.93	±0.03			8.74	±0.24		
Female	1.17	±0.03			8.30	±0.16		
Marital status (population 15+) [a]			–	–			–	–
Married	0.37	±0.02			5.31	±0.26		
Widowed/separated/divorced	1.02	±0.04			5.44	±0.20		
Never married	2.13	±0.05			11.96	±0.25		
Ethnicity			<.001	2316.3				
Hispanic/Latinx/Spanish	2.40	±0.07			7.02	±0.10	<.001	393.0
Non-Hispanic	0.88	±0.02			10.49	±0.17		
Race			<.001	557.6			<.001	79.3
White	0.82	±0.02			7.00	±0.17		
Black	2.19	±0.08			9.05	±0.29		
American Indian or Alaska Native	3.03	±0.26			12.34	±0.98		
Asian or Pacific Islander	1.19	±0.08			8.71	±0.51		
Other race	2.96	±0.19			11.67	±0.63		
Two or more major races	1.39	±0.12			7.62	±0.61		
Educational attainment (populations 25 and over)			<.001	1426.3			<.001	136.0
Less than high school	2.28	±0.09			8.33	±0.29		
High school graduate and equivalency	1.13	±0.04			7.70	±0.27		
Some college	0.55	±0.03			5.20	±0.23		
Bachelor's degree or more	0.20	±0.01			4.00	±0.30		
School (population 18 to 24)			0.815	0.06			<.001	160.2
Enrolled	3.20	±0.12			13.52			
Not enrolled	3.18	±0.14			20.64			
Employment status (population 25 to 64)			<.001	3541.9			<.001	73.5
Employed	0.46	±0.02			7.28	±0.24		
Unemployed	3.13	±0.19			10.69	±0.61		
Not in labor force	2.59	±0.08			9.27	±0.28		
Total	1.16	±0.02						

Note. All estimates are calculated using person weights and exclude people living in group quarters.
[a]Chi square tests were not conducted for age or marital status because both variables are included in the construction of the measure.

are also more likely to experience sheltered and unsheltered homelessness. For individuals over age 16, rates of doubling up were higher among those who were never married. This was the same for both the total population and the population in or near poverty.

Race and Ethnicity. Race and ethnicity were significantly related to doubling up. White individuals were least likely to be doubled up, as in estimates of literal homelessness. People who identified as American Indian/Alaska Native, *other* race, or Black had the highest rates of doubling up among racial groups. Although people who identify as Hispanic are reported in counts of literal homelessness at rates only slightly above their proportion in the general population (U.S. Department of Housing and Urban Development, 2020b, September) and less than half the rate of those identifying as Black (Moses, 2019), ACS data show high rates of doubling up among those who are Hispanic/Latinx/Spanish. People identifying as Asian or Pacific Islander had higher rates of doubling up than those identifying as White, but among those experiencing literal homelessness,

Asian Americans have lower rates than Whites. When the denominator is only the population in or near poverty, race and ethnicity are still significantly related to doubling up rates. However, the disparities between White and non-White and between Hispanic and non-Hispanic groups are not as large, suggesting that racial/ethnic disparities in poverty play a role but do not fully explain the relationship.

Employment, Education, and School Enrollment. Finally, rates of doubling up in the total population (of working age) were higher among those who were unemployed and had lower educational attainment. This remained significant for those in or near poverty. We looked at school enrollment specifically among young adults 18 to 24 and found that doubling up was unrelated to school enrollment in the total population, but was significantly lower among individuals in or near the adjusted poverty level: 12.5% of those in school were doubled up, compared with 20.6% of those not in school.

Discussion

Some definitions of homelessness include people who are doubled up—living with family or friends because of economic hardship or housing loss. Doubling up can have negative consequences for health and well-being, but annual methods for enumerating the total population experiencing homelessness excludes people in these arrangements. Using our new measure derived from ACS microdata, we estimate that 3.7 million people were experiencing doubled-up homelessness in 2019, more than 6 times the number found in PIT counts of sheltered and unsheltered homelessness.

We found doubling up to be significantly related to living in a metropolitan area, similar to research on literal homelessness. However, maps reveal areas where rates of doubled-up homelessness are high, but rates of literal homelessness are low. Broadly, some urban areas with high rates of unsheltered and sheltered homelessness are also areas with high rates of doubling up. Meanwhile, there are rural areas with low rates of sheltered and unsheltered homelessness but high rates of doubling up. With HUD's estimates, most rural areas are aggregated up to large jurisdictions (e.g., balance-of-state CoCs), but the ACS can produce doubled-up estimates at smaller levels of geography. These estimates suggest that HUD's PIT count of literal homelessness may underestimate homelessness in rural areas. This aligns with a recent report by the U.S. Government Accountability Office (2020) that found less reliable estimates in rural areas and pointed to resources and capacity as potential explanations. It also aligns with research on rural homelessness, which suggests that it is often hidden and experienced as doubling up (Carpenter-Song, Ferron, & Kobylenski, 2016; Fitchen, 1992; Robertson et al., 2007). Analysis of DoE data suggests this is true for students, with rural homeless students more likely to stay in doubled-up arrangements than nonrural students (Institute for Children, Poverty & Homelessness (ICPH), 2019), and a recent phone-based survey provides evidence for youths and young adults, with rates of literal homelessness greater in urban areas than rural, but doubling-up rates nearly equal (4.5% in rural areas, 4.4% in urban; Morton et al., 2018).[11]

At the same time, doubling up in rural areas may be more common and less likely to represent housing insecurity because the average dwelling is larger and can accommodate more household members. AHS estimates suggest that housing may be larger in rural suburbs, but not in rural areas that are disconnected from cities.[12] Although the ACS does not have data on dwelling size, we found that people who were doubling up in metropolitan areas were more likely to be overcrowded than those doubling up in nonmetropolitan areas. Future research should further examine the relationship between rural dwelling characteristics and doubling up, while acknowledging qualitative research that stresses the shortage of affordable housing options and the precarious nature of doubled-up living arrangements among rural households (Carpenter-Song, 2016).

Among those in or near poverty, doubling up was more likely to take place in a unit being bought or owned. This may suggest that despite being in or near poverty themselves, householders who own their home are more likely to offer support to friends and family, perhaps because of increased

autonomy or lower housing costs. This is in line with recent research showing that property values and tax burdens are significantly lower in poor neighborhoods, whereas rents are not (Desmond & Wilmers, 2019).

We also found significant differences in doubling up by individual characteristics—race, ethnicity, education, and employment—that parallel research on literal homelessness. However, rates among Hispanic/Latinx people (and to a lesser extent Asian and Pacific Islanders) were greater than sheltered/unsheltered homelessness rates. This aligns with previous research by Baker (1996), who noted that rates of Hispanic/Latinx homelessness are lower across the country than their poverty rates. Baker named this the "Latino paradox" in homelessness and suggested that the phenomenon may in part be explained by higher rates of doubling up.

In this study, the highest doubling-up rates were found among people identified as American Indian or Alaska Native, and two of the areas with the highest rates were tribal lands. These findings align with previous research from HUD on the housing needs of Native Americans in tribal areas in Arizona, New Mexico, and Alaska, which found homelessness to manifest more often as doubling up and overcrowding than as street or sheltered homelessness (Pindus et al., 2017). In a parallel study on urban areas, respondents reported that doubling up was preferred to shelter (Levy, Beiss, Baum, Pindus, & Murray, 2017).

Although many people living doubled up may do so out of necessity, higher rates among Native American, Hispanic/Latinx, Asian American, and Pacific Islanders may be influenced by cultural preferences (Koebel & Murray, 1999; Levy et al., 2017; Pader, 2002). The question of whether extended living arrangements among low-income households is predominantly influenced by culture or economic necessity has long been debated (Angel & Tienda, 1982; Baker, 1996). Whereas cultural preferences should be affirmed and integrated into policy decisions, cultural norms for housing, like most social conditions, are shaped in part by social structures. Several studies on low-income households find that economic and housing market factors explain more variation in doubling up than demographic ones do (Carrillo et al., 2016; McConnell, 2015, 2017; Mutchler & Krivo, 1989). Studies such as these emphasize the role of structural barriers, from residential discrimination and barriers to legal immigration status, in determining the housing status of marginalized groups alongside cultural norms.

Policy Implications

This study has specific implications for defining and measuring homelessness and, in effect, designing and evaluating housing policy. First, the extent of doubling up in the total population may suggest that efforts to encourage HUD to expand its definition of homelessness are warranted. Although there is concern regarding expanding eligibility for homeless services when resources are scarce, advocates and policymakers can use estimates of doubling up to call for increased funding. This may be especially important for marginalized groups more likely to double up than stay in shelters or in unsheltered locations. While HUD maintains its current definition and counts, estimates of doubled-up homelessness from this measure can be used to supplement annual enumerations of sheltered and unsheltered homelessness. Because many people move from doubling up to literal homelessness during the same period, estimates from this measure should not simply be added to counts of sheltered and unsheltered homelessness, but can be used alongside them to expand the information on homelessness that drives political discourse on homelessness response. Finally, given that doubling up is often a precursor to literal homelessness, understanding doubling up may be useful for prevention of the forms of homelessness that HUD counts.

Rural homelessness is understudied, but the existing literature concludes that measures of homelessness that include doubling up are more responsive to need in rural areas (Carpenter-Song et al., 2016; Fitchen, 1992). Better enumeration of need may imply that increased funding is warranted. For example, rural areas where students are more likely to experience homelessness in a doubled-up situation are also much less likely to receive a Mckinney–Vento subgrant (ICPH, 2019).

In addition to increased funding, effective solutions for people in rural areas may differ from what works best in urban areas. Experts suggest regionalized services, increased partnering among local organizations, and transportation assistance, to make the most of limited resources (Robertson, 2007). Finally, preventing rural doubled-up homelessness requires addressing the physical conditions of the housing stock and the growing need for affordable rental housing in rural America (Scally, Gilbert, Hedman, & Posey, 2018).

As mentioned, doubling up highlights a tension between housing norms and housing needs, especially for those aiming to enact policies that are equitable for all race, ethnic, and citizenship status groups. Some researchers argue that problematizing doubling up reflects a Eurocentric view of housing preference (Koebel & Murray, 1999; Pader, 2002). These perspectives are important reminders to consider the relationship between cultural norms and the extended household, especially when assessing potential disparate impact. For example, Pader (2002) describes how occupancy standards have been enforced in ways that lead to disproportionate eviction for Hispanic/Latinx families. In a HUD study with Native/Indigenous communities in urban areas, participants criticized lease requirements of both private-market and government-subsidized housing that prevented family or friends from living with them temporarily (Levy, 2017). Participants requested more affordable housing that could accommodate multigenerational living arrangements to help reduce unstable doubling up and overcrowding while reflecting cultural preferences (Levy, 2017).

Although the private safety net of doubling up is important to many, as it continues to be associated with negative housing, health, and developmental outcomes, public housing and homeless assistance programs must assess whether their funding levels or designs contribute to racial and ethnic disparities. For example, recent research documents lower rates of homeless service use by Hispanic/Latinx individuals and families because of concerns about family separation, lack of linguistically inclusive and culturally responsive programs, and misinformation about shelter eligibility for immigrants (Chinchilla & Gabrielian, 2019; Culhane, Metraux, Treglia, Lowman, & Ortiz-Siberon, 2019). Similarly, research suggests that for Native/Indigenous communities, lack of shelters in tribal areas and lack of targeted homelessness resources in urban areas contributes to high rates of doubling up (Levy et al., 2017; Pindus et al., 2017).

Funding levels and policy design outside of the homelessness response system are also potential drivers of racial and ethnic disparities in doubling up. When Baker (1996) described doubling up among Hispanic/Latinx families as a cultural adaptation to poverty, she also stated, "Such alternatives of necessity are no substitute for housing subsidies, tax and wage policies that bolster working-class earnings, or aggressive antidiscrimination policies that open up new sectors of the labor and housing markets still closed on the basis of race" (p. 140). Whether because of a lack of culturally competent outreach or eligibility restrictions for immigrants, income-eligible Hispanic/Latinx households are underrepresented in the Housing Choice Voucher Program (Acevedo-Garcia, 2014). Changes proposed by the Biden–Harris administration to allow all eligible households entitlement to the program could reduce these disparities and, subsequently, reduce doubling up. As another example, Pindus, et al. (2017) found that funding levels for the Native American Housing and Self Determination Act (NAHASDA) have not increased or been adjusted for inflation over time, reducing its purchasing power for low-income housing programs on tribal lands by about a third since its enactment (Pindus, et al. 2017). Increasing NAHASDA funding could help address doubled-up homelessness for Native youths, adults, and families.

Finally, this study has additional implications given the COVID-19 pandemic and its impact on homeless shelters, household income, and housing stability. First, shelter de-compression because of social distancing requirements may be associated with an increase in doubling up as fewer people are able to access shelter beds. The homelessness response system requires adequate resources to house people on their own, whether temporarily with hotel vouchers or, ideally, permanently with short- or long-term rental subsidies. Further, the impact of COVID-19 on employment and income is likely to lead to a rise in the number of housing-insecure renters, evictions, and people left choosing

among doubling up, shelters, or the streets. Because of systemic racism—in particular, housing and employment discrimination—people of color are disproportionately impacted by the coronavirus itself (Mackey et al., 2021) and by related economic hardship (Anyamele, McFarland, & Fiakofi, 2021). Increasing our understanding of doubling up may be vital in addressing COVID-19-related health disparities, and policies to support people in this housing crisis—from eviction moratoria to cash stimuli to rent relief—may be crucial public health measures (Benfer et al., 2021; Leifheit et al., 2020).

Limitations

This study should be considered alongside limitations. First, no ACS question asks whether a person is residing in the household to avoid sheltered or unsheltered homelessness. Therefore, we cannot confirm that individuals are doubling up for economic reasons, but our measure uses a geographically adjusted poverty level, household relationships, and crowding to infer. Despite the anonymity of the ACS, renters may avoid reporting additional household members for fear of being evicted if housing more people than a lease allows. Next, although the Census Bureau engages in complex sampling procedures, it has been criticized for underestimating people in poverty, people of color, and immigrants (Bazuin & Fraser, 2013). Because of these limitations, the ACS may underestimate doubling up. There are also limitations to using ACS 1-year data to study annual change for small areas and subpopulations. The ability to accurately detect year-to-year changes decreases as sample size decreases, so changes in subpopulation estimates may have large margins of error and should be interpreted with caution. For increased statistical reliability in research specific to small areas and subpopulations, ACS 5-year data are more appropriate, although less useful in monitoring annual trends (U.S. Census Bureau, 2020).

Conclusion

Across the United States, individuals and families double up with others because of economic hardship or the loss of their own housing. Although doubling up is often considered a form of homelessness, methods to estimate its extent have been limited. This study introduces a new measure to estimate this dimension of homelessness using publicly available ACS data. Given research connecting doubling up to negative health and well-being for low-income households, informed action at local, state, and federal levels is needed to prevent this form of homelessness. This measure adds to existing methods to enumerate homelessness and inform program and policy decisions to address it.

Notes

1. The current classification of *severe physical problems* for HUD's worst case housing needs (WCHN) does not include overcrowding or households with subfamilies. Koebel and Renneckar (2003) suggest that households that are doubled up may be a subgroup of households with WCHN, so including them would have a negligible impact on the measure. Our study, then, aims to zero in on this subgroup of households and specifically examine the so-called guests rather than the overall household.
2. AHS (used by HUD to describe WCHN, poor physical conditions, and overcrowding) releases data for 25 metropolitan areas, nine states, and the nation. CPS releases data for the nation, regions, and selected characteristics of states (U.S. Census Bureau, 2016).
3. Not all CoCs are coterminous with county or census tract boundaries, so constructing CoC-level population measures is difficult. A rigorous approach has been developed by Byrne and colleagues (2013), and Byrne (2018) has made population totals constructed from ACS 2016 5-year publicly available data. Because of the relatively stable nature of these population estimates and because we only use the data for broad mapping of homelessness rates, we determined these population totals to be current enough for our purposes.
4. In early stages, members of the Data Committee of the Nashville-Davidson Continuum of Care Homeless Planning Council, including shelter, service, and school-based professionals in the homeless service field, contributed to the development of the inclusion criteria. Following this process, the authors developed

a measure and incorporated prior research to inform decision-making. Finally, a group of 10 parents of Chicago Public Schools students experiencing homelessness reviewed and approved the inclusion criteria for the measure and reviewed the current article, providing feedback that was incorporated into the final article. Additional contributions by individuals are described in the Acknowledgments.

5. A cutoff of 125% poverty was chosen to follow the National Alliance to End Homelessness *State of Homelessness* report's definition of poor people living doubled up. This cutoff is the maximum for eligibility for Community Services Block Grant programs and is slightly more conservative than the cutoff for free school meals (130%) and Medicaid (138%).

6. To determine who respondents provide information for, the household head is asked, "How many people are living or staying at this address?" and are told to include "everyone who is living or staying here for more than 2 months" and "anyone else staying here who does not have another place to stay, even if they are here for 2 months or less." Respondents are told to exclude "anyone who is living somewhere else for more than 2 months, such as a college student living away or someone in the Armed Forces on deployment" (U.S. Department of Commerce, 2018).

7. Housing status groups determine what share of the poverty threshold is adjusted based on housing costs. For units that have owners with mortgages, owners without mortgages, and renters, the shares of expenses for housing in the thresholds are 0.504, 0.402, and 0.514, respectively (Bureau of Labor Statistics 2013).

8. More than half the people who enter shelter indicate their prior living situation was staying with friends or family (as opposed to one in six who leave a place they owned or rented; U.S. Department of Housing and Urban Development, 2018). Availability and affordability of housing, among other factors, are associated with literal homelessness (see Rukmana, 2020, for a review), doubled-up homelessness among public school students (Evangelist & Shaefer, 2020), and household sharing (Mutchler & Krivo, 1989).

9. Miller and Bourgeois (2013) report that the 19% of districts receiving McKinney–Vento funds in school year 2009–2010 identified 80% of the homeless students in the United States, and that that the disproportionality was not explained by population size (ratios of homeless to nonhomeless students were significantly higher in funded districts). Our calculations for 2018–2019 find that the 30% of districts receiving funds identified 64% of doubled-up students. Using a qualitative case study, Hallett and colleagues (2015) describe how newly granted state funding motivated a district to begin counting doubled-up students.

10. For example, data issues reported for Tennessee for the 2016–2017 school year (the data used to determine the correlation between DoE and ACS measures for this article) were as follows: "Primary nighttime residence was not collected for all students. Increased outreach and identification activities [led] to an increase in the number of students identified as homeless. Regular assessments resumed, resulting in a significant increase in the number of homeless students assessed" (U.S. Department of Education, 2018, p. 18).

11. Morton and colleagues (2018) estimated doubled-up homelessness by including youths who were "couch surfing," or "moving from one temporary living arrangement to another without a secure place to be" (p. 15).

12. Analysis of the 2009 AHS data by household size and metropolitan statistical area (MSA) status (central city, urban suburbs, rural suburbs, and nonmetropolitan) finds that the median square footage of owner-occupied housing units in urban metropolitan areas is 1,800. In rural metropolitan suburbs, the median is 1,900 sq. ft, and in nonmetropolitan areas, which include rural towns and areas disconnected from MSAs (measured by commuting patterns and population density) it is 1,680 sq. ft. This suggests that rural areas near cities have larger average homes, but that the most rural areas, where income is lower than in the rural suburbs, do not. Additionally, the median square footage per person was 800 for all areas except the central cities of MSAs, where the median was 767 (Dietz & Siniavskaia, 2011).

Disclosure Statement

No potential conflict of interest was reported by the authors.

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References

Anyamele, O. D., McFarland, S. M., Fiakofi, K. (2021). The disparities on loss of employment income by U.S. households during the COVID-19 pandemic. *Journal of Economics, Race, and Policy*. 1-19.

Acevedo-Garcia, D. (2014). Reflections on a comparative perspective within the U.S. *The Dream Revisited*. Retrieved from https://furmancenter.org/research/iri/essay/reflections-on-a-comparative-perspective-within-the-u.s

Ahrentzen, S. (2003). Double indemnity or double delight? The health consequences of shared housing and "doubling up". *Journal of Social Issues*, *59*(3), 547–568.

Angel, R., & Tienda, M. (1982). Determinants of extended household structure: Cultural pattern or economic need? *American Journal of Sociology*, *87*(6), 1360–1383.

Baker, M., Das, D., Venugopal, K., & Howden-Chapman, P. (2008). Tuberculosis associated with household crowding in a developed country. *Journal of Epidemiology and Community Health*, *62*(8), 715–721.

Baker, S. G. (1996). Homelessness and the Latino paradox. In J. Baumohl (Ed.), *Homelessness in America* (pp. 132–140). Phoenix, AZ: Oryx Press.

Baptista, I., & Marlier, E. (2019). *Fighting homelessness and housing exclusion in Europe: A student of national policies*. European Social Policy Network, European Commission. Retrieved from https://op.europa.eu/en/publication-detail/-/publication/2dd1bd61-d834-11e9-9c4e-01aa75ed71a1/language-en

Bazuin, J. T., & Fraser, J. C. (2013). How the ACS gets it wrong: The story of the American Community Survey and a small, inner city neighborhood. *Applied Geography*, *45*, 292–302.

Benfer, E. A., Vlahov, D., Long, M. Y., Walker-Wells, E., Pottenger Jr, J. L., Gonsalves, G., & Keene, D. E. (2021). Eviction, health inequity, and the spread of COVID-19: Housing policy as a primary pandemic mitigation strategy. *Journal of Urban Health*, *98*(1), 1–12.

Bush, H., & Shinn, M. (2017). Families' experiences of doubling up after homelessness. *Cityscape*, *19*(3), 331–356.

Bureau of Labor Statistics (2013). *Supplemental Poverty Measure (SPM) Thresholds*. Washington, DC: Department of Labor., http://www.bls.gov/pir/spmhome.htm .

Byrne. (2018). HUD-CoC-Geography-Crosswalk. Github. Retrieved from https://github.com/tomhbyrne/HUD-CoC-Geography-Crosswalk

Byrne, T., Munley, E. A., Fargo, J. D., Montgomery, A. E., & Culhane, D. P. (2013). New perspectives on community-level determinants of homelessness. *Journal of Urban Affairs*, *35*(5), 607–625.

Carpenter-Song, E., Ferron, J., & Kobylenski, S. (2016). Social exclusion and survival for families facing homelessness in rural New England. *Journal of Social Distress and the Homeless*, *25*(1), 41–52.

Carrillo, L., Pattillo, M., Hardy, E., & Acevedo-Garcia, D. (2016). Housing decisions among low-income Hispanic households in Chicago. *Cityscape*, *18*(2), 109–150.

Chinchilla, M., & Gabrielian, S. (2019). Stemming the rise of Latinx homelessness: Lessons from Los Angeles County. *Journal of Social Distress and the Homeless*, *29*(2), 71–75

Clampet-Lundquist, S. (2003). Finding and keeping affordable housing: Analyzing the experiences of single-mother families in North Philadelphia. *Journal of Sociology and Social Welfare*, *30*(4), 123–140.

Colosia, A. D., Masaquel, A., Hall, C. B., Barrett, A. M., Mahadevia, P. J., & Yogev, R. (2012). Residential crowding and severe respiratory syncytial virus disease among infants and young children: A systematic literature review. *BMC Infectious Diseases*, *12*(1), 95.

Cordray, D. S., & Pion, G. M. (1991). What's behind the numbers? Definitional issues in counting the homeless. *Housing Policy Debate*, *2*(3), 585–616.

Culhane, D., Metraux, S., Treglia, D., Lowman, K., & Ortiz-Siberon, A. (2019). *Latinx homelessness in Philadelphia: Rates of services use, perceived barriers and assets, and potential opportunities for leveraging city reform efforts to address service gaps*. University of Pennsylvania. Retrieved from https://works.bepress.com/dennis_culhane/233/

Cunningham, M., Harwood, R., Hall, S. (2010). Residential instability and the McKinney-Vento homeless children and education program: What we know, plus gaps in research. Washington DC: Urban Institute.

Cusack, M., & Montgomery, A. E. (2019). Examining the risk factors and needs of veterans involuntarily doubling-up with family or friends. *Housing and Society*, *46*(3), 144–156.

Cutts, D. B., Meyers, A. F., Black, M. M., Casey, P. H., Chilton, M., Cook, J. T., . . . Frank, D. A. (2011). U.S. Housing insecurity and the health of very young children. *American Journal of Public Health*, *101*(8), 1508–1514.

Deitz, R, & Siniavskaia, N. (2011). The geography of home size and occupancy. Washington, DC: National Association of Home Builders. Retrieved from https://www.nahbclassic.org/generic.aspx?genericContentID=171558&fromGSA=1

Desmond, M. (2012). Disposable ties and the urban poor. *American Journal of Sociology*, *117*(5), 1295–1335.

Desmond, M., & Wilmers, N. (2019). Do the poor pay more for housing? Exploitation, profit, and risk in rental markets. *American Journal of Sociology*, *124*(4), 1090–1124.

Edwards, E. J. (2020). Young, Black, successful, and homeless: Examining the unique academic challenges of Black students who experienced homelessness. *Journal of Children and Poverty*, *26*(2), 125–149.

Eggers, F. J., & Moumen, F. (2013). *Analysis of trends in household composition using American housing survey data*. Washington, DC: Government Printing Office.

Evangelist, M., & Shaefer, H. L. (2020). No place called home: Student homelessness and structural correlates. *Social Service Review*, *94*(1), 4–35.

Evans, G. W. (2003). The built environment and mental health. *Journal of Urban Health*, *80*(4), 536–555.

Fitchen, J. (1992). On the edge of homelessness: Rural poverty and housing insecurity. *Rural Sociology*, *57*(2), 173–193.

Hallett, R. E., Skrla, L., & Low, J. (2015). That is not what homeless is: A school district's journey toward serving homeless, doubled-up, and economically displaced children and youth. *International Journal of Qualitative Studies in Education*, *28*(6), 671–692.

Harvey, H. (2020). Cumulative effects of doubling up in childhood on young adult outcomes. *Demography*, *57*(2), 1–28.

Hopper, K., Shinn, M., Laska, E., Meisner, M., & Wanderling, J. (2008). Estimating numbers of unsheltered homeless people through plant-capture and postcount survey methods. *American Journal of Public Health*, *98*(8), 1438–1442.

Ingram, E. S., Bridgeland, J. M., Reed, B., & Atwell, M. (2017). *Hidden in plain sight: Homeless students in America's public schools*. Civic Enterprises. Retrieved from https://eric.ed.gov/?id=ED572753

Institute for Children, Poverty & Homelessness. (2019). Student homelessness in rural America. New York: Author. Retrieved from https://www.icphusa.org/wp-content/uploads/2019/02/Rural-Report-Final.pdf

Jenks, G. F. (1967). The data model concept in statistical mapping. *International Yearbook of Cartography*, *7*, 186–190.

Joint Center for Housing Studies at Harvard University. (2020). *American's rental housing*. Retrieved from https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_Americas_Rental_Housing_2020.pdf

Kang, S. (2019). Why low-income households become unstably housed: Evidence from the panel study of income dynamics. *Housing Policy Debate*, *29*(4), 559–587.

Koebel, C. T., & Murray, M. S. (1999). Extended families and their housing in the U.S. *Housing Studies*, *14*(2), 125–143.

Koebel, C. T., & Renneckar, P. L. (2003). *A review of the worst case housing needs measure*. Virginia Center for Housing Research. Retrieved from https://vtechworks.lib.vt.edu/bitstream/handle/10919/48648/worst_case_housing_needs.pdf?sequence=1&isAllowed=y

Koegel, P., Burnam, M. A., & Morton, S. C. (1996). Enumerating homeless people: Alternative strategies and their consequences. *Evaluation Review*, *20*(4), 378–403.

Krieger, J., & Higgins, D. L. (2002). Housing and health: Time again for public health action. *American Journal of Public Health*, *92*(5), 758–768.

Lee, B. A., Tyler, K. A., & Wright, J. D. (2010). The new homelessness revisited. *Annual Review of Sociology*, *36*(1), 501–521.

Leifheit, K. M., Linton, S. L., Raifman, J., Schwartz, G., Benfer, E., Zimmerman, F. J., & Pollack, C. (2020). Expiring eviction moratoriums and COVID-19 incidence and mortality. *SSRN Electronic Journal*. doi:10.2139/ssrn.3739576

Levy, D. K., Beiss, J., Baum, A., Pindus, N., & Murray, B. (2017). *Housing needs of American Indians and Alaska Natives in urban areas: A report from the assessment of American Indian, Alaska Native, and Native Hawaiian housing needs*. Washington, DC: U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Retrieved from https://www.huduser.gov/portal/publications/NAHSG-UrbanStudy.html

Link, B. G., Susser, E., Stueve, A., Phelan, J., Moore, R. E., & Struening, E. (1994). Lifetime and five-year prevalence of homelessness in the United States. *American Journal of Public Health*, *84*(12), 1907–1912.

Mackey, K., Ayers, C. K., Kondo, K. K., Saha, S., Advani, S. M., Young, S., . . . Kansagara, D. (2021). Racial and ethnic disparities in COVID-19–related infections, hospitalizations, and deaths: A systematic review. *Annals of Internal Medicine*, *174*(3), 362–373.

McConnell, E. D. (2015). Restricted movement: Nativity, citizenship, legal status, and the residential crowding of Latinos in Los Angeles. *Social Problems*, *62*(1), 141–162.

McConnell, E. D. (2017). Rented, crowded, and unaffordable? Social vulnerabilities and the accumulation of precarious housing conditions in Los Angeles. *Housing Policy Debate*, *27*(1), 60–79.

Mehdipanah, R. (2020). Housing as a determinant of COVID-19 inequities. *American Journal of Public Health*, *110*(9), 1369–1370.

Miller, P. M., & Bourgeois, A. K. (2013). Considering the geographic dispersion of homeless and highly mobile students and families. *Educational Researcher*, *42*(4), 242–249.

Miller, P. M., Pavlakis, A., Samartino, L., & Bourgeois, A. (2015). Brokering educational opportunity for homeless students and their families. *International Journal of Qualitative Studies in Education*, *28*(6), 730–749.

Minnesota Population Center. (n.d.). Replicate weights in the American Community Survey. Retrieved from https://usa.ipums.org/usa/repwt.shtml

Morton, M. H., Dworsky, A., Matjasko, J. L., Curry, S. R., Schlueter, D., Chávez, R., & Farrell, A. F. (2018). Prevalence and correlates of youth homelessness in the United States. *Journal of Adolescent Health*, *62*(1), 14–21.

Moses, J. (2019). *Demographic data project: Race, ethnicity, and homelessness*. Washington DC: Homelessness Research Institute of the National Alliance to End Homelessness. Retrieved from https://endhomelessness.org/wp-content/uploads/2019/07/3rd-Demo-Brief-Race.pdf

Mutchler, J. E., & Krivo, L. J. (1989). Availability and affordability: Household adaptation to a housing squeeze. *Social Forces*, *68*(1), 241–261.

Mykyta, L., & Macartney, S. (2011). The effects of recession on household composition: "Doubling up" and economic well-being (Working Paper No. SEHSD-WP2011–04). Social, Economic, & Housing Statistics Division (SEHSD) of U.S. Census Bureau. Retrieved from https://www.census.gov/library/working-papers/2011/demo/SEHSD-WP2011-04.html

Mykyta, L., & Macartney, S. (2012). Sharing a household: Household composition and economic well-being: 2007-2010 (Report No. P60-242). United States Department of Commerce, Economics and Statistics Administration of U.S. Census Bureau. Retrieved from https://www2.census.gov/library/publications/2012/demo/p60-242.pdf

Mykyta, L., & Macartney, S. (2016). Household composition and family wellbeing: Exploring the relationship between doubling up and hardship. (Working Paper No. SEHSD-WP2016–10). Social, Economic, & Housing Statistics Division (SEHSD) of U.S. Census Bureau. Retrieved from https://www.census.gov/library/working-papers/2016/demo/SEHSD-WP2016-10.html

Nande, A., Sheen, J., Walters, E. L., Klein, B., Chinazzi, M., Gheorghe, A. H., . . . Hill, A. L. (2021). The effect of eviction moratoria on the transmission of SARS-CoV-2. *Nature Communications*, *12*(1). doi:10.1038/s41467-021-22521-5

National Alliance to End Homelessness. (2020). *State of homelessness*. Retrieved from https://endhomelessness.org/homelessness-in-america/homelessness-statistics/state-of-homelessness-2020/

National Center for Homeless Education. (2017). *The Mckinney-Vento definition of homeless*. Retrieved from https://nche.ed.gov/mckinney-vento-definition/

National Center for Homeless Education. (2021). *Federal data summary: School years 2016-17 to 2018-19*. Retrieved from https://nche.ed.gov/wp-content/uploads/2021/04/Federal-Data-Summary-SY-16.17-to-18.19-Final.pdf

National Low Income Housing Coalition. (2020). *Out of reach: The high cost of housing*. Retrieved from https://reports.nlihc.org/oor

Pader, E. (2002). Housing occupancy standards: Inscribing ethnicity and family relations on the land. *Journal of Architectural and Planning Research*, *19*(4), 300–318.

Pilkauskas, N. V., Garfinkel, I., & McLanahan, S. S. (2014). The prevalence and economic value of doubling up. *Demography*, *51*(5), 1667–1676.

Pindus, N., Kingsley, G. T., Biess, J., Levy, D., Simington, J., & Hayes, C. (2017). *Housing needs of American Indians and Alaska Natives in tribal areas: A report from the assessment of American Indian, Alaska Native, and Native Hawaiian housing needs*. U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Retrieved from https://www.huduser.gov/portal/sites/default/files/pdf/HNAIHousingNeeds.pdf

Rao, J. N., & Scott, A. J. (1981). The analysis of categorical data from complex sample surveys: Chi-squared tests for goodness of fit and independence in two-way tables. *Journal of the American Statistical Association*, *76*(374), 221–230.

Renwick, T. (2011). *Geographic adjustments of supplemental poverty measure thresholds: Using the American Community Survey five-year data on housing costs* (Working Paper No. SEHSD-WP2011-21). Social, Economic, & Housing Statistics Division (SEHSD) of U.S. Census Bureau. Retrieved from https://www.census.gov/content/dam/Census/library/working-papers/2011/demo/SEHSD-WP2011-21.pdf

Robertson, M., Harris, N., Fritz, N., Noftsinger, R., & Fischer, P. (2007). Rural homelessness. In D. Dennis, G. Locke, & J. Khadduri Eds., *Toward understanding homelessness: National symposium on homelessness research*. U.S. Department of Housing and Urban Development. Retrieved from https://www.huduser.gov/publications/pdf/homeless_symp_07.pdf

Robertson, M., Harris, N., Fritz, N., Noftsinger, R., & Fischer, P. (2007). Rural homelessness. *In Toward Understanding Homelessness: The 2007 National Symposium on Homelessness Research* (pp. 8-1 - 8-32). Washington, DC: U.S. Department of Health and Human Services, U.S. Department of Housing and Urban Development.

Rog, D. J., Holupka, C. S., & Patton, L. C. (2007). *Characteristics and dynamics of homeless families with children*. U.S. Department of Health and Human Services. Retrieved from https://aspe.hhs.gov/pdf-report/characteristics-and-dynamics-homeless-families-children

Roncarati, J. S., Byrne, T. H., & McInnes, D. K. (2021). Invited commentary: Data sources for estimating numbers of people experiencing homelessness in the United States—Strengths and Limitations. *American Journal of Epidemiology*. Advance online publication. doi:10.1093/aje/kwab104

Rossi, P. H. (1989). *Down and out in America: The origins of homelessness*. Chicago, IL: University of Chicago Press.

Routhier, G. (2019). Beyond worst case needs: Measuring the breadth and severity of housing insecurity among urban renters. *Housing Policy Debate*, *29*(2), 235–249.

Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., & Sobek, M. (2019). *IPUMS USA: Version 8.0* [Data set]. IPUMS.

Rukmana, D. (2020). The causes of homelessness and the characteristics associated with high risk of homelessness: A review of intercity and intracity homelessness data. *Housing Policy Debate*, *30*(2), 291–308.

Scally, C., Gilbert, B., Hedman, C., & Posey, A. G. L. (2018). Rental housing for a 21st century rural America: A platform for production. Washington, DC: Urban Institute. Retrieved from https://www.urban.org/sites/default/files/publication/99045/rental_housing_for_a_21st_century_rural_america.pdf

Skobba, K., & Goetz, E. G. (2015). Doubling up and the erosion of social capital among very low income households. *International Journal of Housing Policy*, *15*(2), 127–147.

Skobba, K., Bruin, M. J., & Yust, B. L. (2013). Beyond renting and owning: The housing accommodations of low-income families. *Journal of Poverty*, *17*(2), 234–252.

Smith, C., & Castañeda-Tinoco, E. (2019). Improving homeless point-in-time counts: Uncovering the marginally housed. *Social Currents*, *6*(2), 91–104.

Spielman, S. E., Folch, D., & Nagle, D. (2014). Patterns and causes of uncertainty in the American Community Survey. *Applied Geography 46*, 147–157.

Taylor, P., Passel, J., Fry, R., Morin, R., Wang, W., Velasco, G., & Dockterman, D. (2010). *The return of the multi-generational family household*. Pew Research Center, Social & Demographic Trends Project. Retrieved from https://www.pewresearch.org/wp-content/uploads/sites/3/2010/10/752-multi-generational-families.pdf

U.S. Census Bureau. (2019). *Public Use Microdata Sample (PUMS) accuracy of the data*. U.S. Government Printing Office. Retrieved from https://www2.census.gov/programs-surveys/acs/tech_docs/pums/accuracy/2019AccuracyPUMS.pdf

U.S. Census Bureau. (2020). *Understanding and using American Community Survey data: What all data users need to know*. U.S. Government Printing Office. Retrieved from https://www.census.gov/content/dam/Census/library/publications/2020/acs/acs_general_handbook_2020.pdf

U.S. Census Bureau. (2021). *American Community Survey 2019 5-year estimates*. Retrieved from *Census Reporter Profile page for Lakota Region PUMA, SD*.

U.S. Department of Commerce. (2018). *The American Community Survey*. Washington, DC: Author. Retrieved from https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2020/quest20.pdf

U.S. Department of Education. (2001). *Mckinney-Vento Homeless Education Assistance Improvements Act of 2001* (42 U.S.C. 11431 et seq.).

U.S. Department of Education. (2018). *Homeless student enrollment data by Local Education Agency-School Year 2016-27. EdFacts data documentation: Appendix B: Identified data anomalies*. Retrieved from https://www2.ed.gov/about/inits/ed/edfacts/data-files/school-status-data.html .

U.S. Department of Education. (2020). EDFacts data files. Retrieved from https://www2.ed.gov/about/inits/ed/edfacts/data-files/school-status-data.html

U.S. Department of Housing and Urban Development. (2009). *Homeless emergency assistance and rapid transition to Housing Act of 2009 (P.L. 111-22, Section 1003)*.

U.S. Department of Housing and Urban Development. (2018, October). *The 2017 annual homeless assessment report to Congress, part 2*. Retrieved from https://www.huduser.gov/portal/sites/default/files/pdf/2017-AHAR-Part-2.pdf

U.S. Department of Housing and Urban Development. (2020a, December). *The 2019 annual homeless assessment report to Congress, part 1*. Retrieved from https://www.huduser.gov/portal/sites/default/files/pdf/2019-AHAR-Part-1.pdf

U.S. Department of Housing and Urban Development. (2020b, September). *The 2018 annual homeless assessment report to Congress, part 2*. Retrieved from https://www.huduser.gov/portal/sites/default/files/pdf/2018-AHAR-Part-2.pdf

U.S. Department of Housing and Urban Devleopment. (2020c). PIT and HIC data since 2007. Retrieved from https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/

U.S. Government Accountability Office. (2020). *Better HUD oversight of data collection could improve estimates of homeless population* (GAO-20-433). Washington, DC: Author. Retrieved from https://www.gao.gov/products/gao-20-433

U.S. Census Bureau. (2021). *List of household surveys.* Washington, DC: U.S. Government Printing Office. https://www.census.gov/programs-surveys/surveyhelp/list-of-surveys/household-surveys.html

Vacha, E. F., & Marin, M. V. (1993). Doubling up: Low income households sheltering the hidden homeless. *Journal of Sociology and Social Welfare*, *20*(3), 25–42.

Watson, N. E., Steffen, B. L., Martin, M., & Vandenbroucke, D. A. (2020). *Worst case housing needs: 2019 Report to Congress*. Office of Policy Development and Research, U.S. Department of Housing and Urban Development. Retrieved from https://www.huduser.gov/portal/sites/default/files/pdf/worst-case-housing-needs-2020.pdf

Wiemers, E. E. (2014). The effect of unemployment on household composition and doubling up. *Demography*, *51*(6), 2155–2178.

Wright, B. R. E., Caspi, A., Moffitt, T. E., & Silva, P. A. (1998). Factors associated with doubled-up housing—A common precursor to homelessness. *Social Service Review*, *72*(1), 92–111.