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Demographics and Disability Status of Adults Living Alone in Rural Areas

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Key Findings

- **The rate of living alone for adults age 18+ is higher in rural areas than in urban areas (14.9% vs. 13.6%).**
- **Those who live alone in rural areas are generally older (median age 62 vs. 58) and more likely to have a disability (32.8% vs. 24.6%) than those who live alone in urban areas.**
- **Likewise, older adults and adults with disabilities both live alone at higher rates in rural areas (35.5% vs. 33.0% of adults age 75 and older, 24.4% vs. 23.4% of adults with disabilities).**
- **Age, disability, and rural residence are compounding factors in the likelihood of living alone.**

Purpose

Living alone is increasingly common across the U.S. It is also associated with poorer health outcomes and greater risks of loneliness and social isolation. However, less is known about how the demographic and health characteristics of adults living alone varies by rural/urban location. We address this gap by examining how the types of people who live alone differ between urban (metro) and rural (non-metro) areas, focusing on differences in age and disability status.

Background

Across the U.S., there has been a steady increase in individuals living alone over the past several decades, with more people living alone today than ever before.[1,2] More than 32 million people now live alone in the U.S., making up more than 27% of all households.[3] Living alone is distinct from, but closely linked to, risks for social isolation and loneliness.[4] Both social isolation and loneliness are urgent public health issues that manifest in unique ways in rural contexts.[5–7] However, very little research has examined rural-urban differences in living alone, with the exception of small-scale qualitative studies and research from outside of the U.S.[8,9]

For many people, living alone is an intentional choice, and is associated with good health, but for others, it puts them at risk of greater isolation and of unmet need for necessary care and assistance.[1,10–12] On average, younger adults have relatively good self-rated physical health, regardless of living arrangement, and older adults living alone tend to have better health than those living with others.[12] Yet, among older adults, individuals living alone with limited economic resources face increased risks of worsening health and disability.[11]

Because non-metropolitan areas tend to be poorer, rural residents living alone may have more difficulty than urban residents in affording the resources they need to navigate

life on their own. Urban areas are also often better-situated to accommodate individuals living alone, with greater availability of small apartments and resources catering to single people, such as public transportation and a wider array of community amenities (e.g., public parks, libraries, variety of grocery stores, etc.). Living alone may be more difficult in rural areas, where there are fewer resources and housing units to appropriately and affordably accommodate such households.[1,13] This may lead to poorer health outcomes, such as increased risk of loneliness, disability, and mortality for rural residents living alone, although more research is needed to demonstrate whether or not that is the case.

The COVID-19 pandemic, and associated social isolation and health consequences, has placed new importance on understanding the demographic and health characteristics of people living alone across the lifespan in both urban and rural areas, in order to address the current and future needs of this rapidly growing population. Toward that end, we describe here the demographic characteristics and disability status of individuals living alone and how those vary by rural/urban location.

Approach

Data

We use data from the 2014-2018 American Community Survey (ACS) Public Use Microdata Sample (PUMS), accessed through IPUMS USA at the University of Minnesota.[14] We limit the data to adults living in households (N=11,840,382), excluding the 3.2% of adults who live in group quarters. To distinguish urban and rural populations, we classify Public Use Microdata Areas (PUMAs, the only sub-state areas identified in the PUMS) as "urban" or "rural" based on whether the majority of each PUMA's 2010 population resides in a 2013 metropolitan area. We assign the PUMA's urban or rural status to all individuals in the PUMA. Because PUMAs do not consistently align with metro areas, our classification is not exact, but it identifies metro status accurately for a very high proportion of cases. (Using ACS summary data, we find that among all adults, only 1.5% live in a metro county but also a "rural" PUMA, and 1.8% live in a non-metro county and an "urban" PUMA.)

We measure living alone by assessing the size of the household; individuals in one-person households are identified as living alone. Following ACS practices,[15] we identify as "having a disability" any individuals who had a positive response for one or more of these questions:

- Hearing difficulty: "Is this person deaf or does he/she have serious difficulty hearing?"
- Vision difficulty: "Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?"
- Cognitive difficulty: "Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?"
- Ambulatory difficulty: "Does this person have serious difficulty walking or climbing stairs?"
- Self-care difficulty: "Does this person have difficulty dressing or bathing?"
- Independent living difficulty: "Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?"

Analysis

Our analyses examine associations in two directions:

1. Among those living alone: Do those in rural areas have characteristics that indicate distinct health risks or service needs (e.g., old age, disability)?
2. Among those with greater health risks or service needs (older, with disability): Are those in rural areas more likely to live alone?

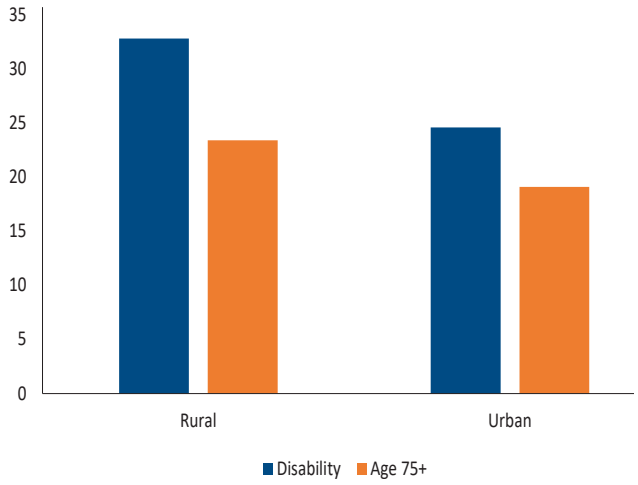
We first conducted cross-tabulations of rates of living alone and demographic characteristics with rural/urban location. We then used logistic regression models to predict living alone among adults, adjusting for sex, age, disability status, and rural/urban location. Given the large sample, all reported coefficients are statistically significant at $p < 0.001$.

Results

Table 1 shows the rate of living alone by rural/urban location and demographic characteristics. In rural areas 14.9% of adults live alone; in urban areas 13.6% of adults live alone. Across most demographic groups, rural adults are more likely than urban adults to live alone, with the exception of married adults, American Indian/Alaska Native adults, and adults age 25-44, for whom rates of living alone are higher among urban adults. Also, for adults who have never married and for non-Hispanic white adults, the rates of living alone are nearly identical by rurality (17.6% and 15.2%, respectively). Among all identified groups, widowed adults have the highest overall rates of living alone as well as the largest difference in rates between rural and urban areas (about 9 percentage points), with 62.8% of widowed adults living alone in rural areas compared to 53.7% in urban areas. Rural adults with a disability are also more likely to live alone than urban adults with a disability (24.4% vs. 23.4%).

Among adults living alone, there were differences by rural/urban location in the prevalence of disability and in age distribution (Figure 1). Adults living alone in rural areas are distinctly more likely to have a disability (32.8% vs. 24.6%—roughly 1/3 vs. 1/4) and to be 75 or older (23.4% vs. 19.1%, $p<0.001$ for both comparisons).

Figure 1. Prevalence of Disability and Old Age among Adults Living Alone (2014-2018)



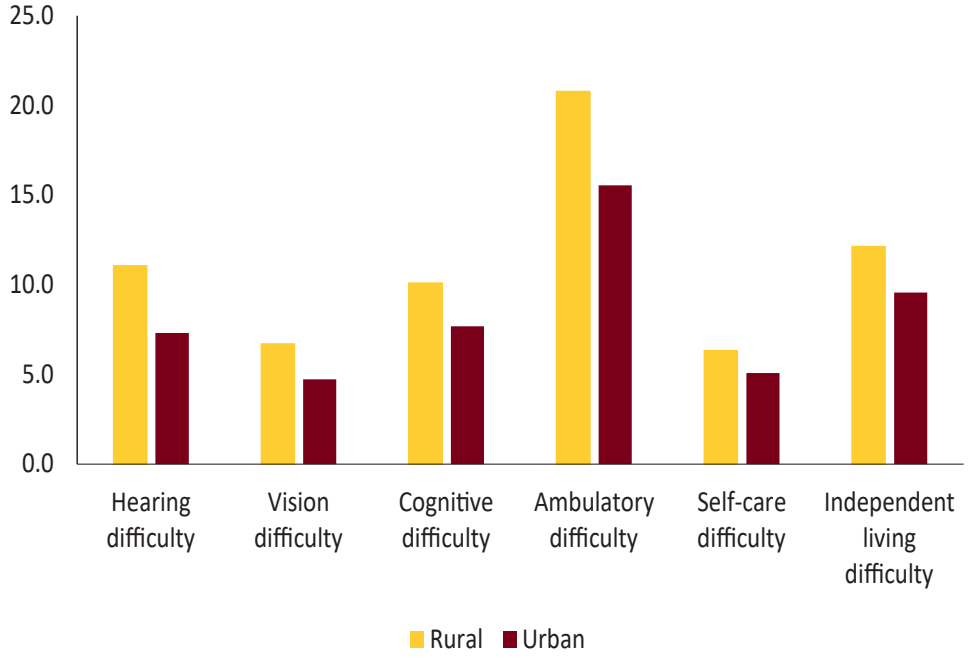
In addition to higher rates of disability overall for rural adults living alone, rates of each individual disability type were higher for rural adults living alone (Figure 2, next page).

Table 1. Percent of Adults Living Alone by Rurality and Demographic Characteristics

	Rural	Urban
All adults in households	14.9	13.6
Marital status		
Married	1.0	1.1
Separated	30.3	26.9
Divorced	39.9	37.1
Widowed	62.8	53.7
Never married	17.6*	17.6*
Gender		
Male	14.2	12.5
Female	15.5	14.6
Race and ethnicity		
Hispanic/Latino	8.5	7.2
Not Hispanic/Latino:	–	–
White alone	15.2*	15.2*
Black alone	18.2	17.5
American Indian and Alaska Native alone	11.8	13.9
Asian alone	10.5	7.8
Native Hawaiian and other Pacific Islander alone	8.8	6.0
Some other race alone	13.5*	11.6*
Two or more races	15.6	13.1
Age group		
18-24	5.1	4.3
25-34	7.8	9.5
35-44	7.4	8.5
45-54	12.2	11.5
55-64	18.0	17.1
65-74	22.3	21.8
75 and older	35.5	33.0
Disability status		
No disability	12.5	11.9
Has a disability	24.4	23.4

ACS 2014-2018 5-Year Sample, IPUMS USA. N = 11,840,382.
**Difference not significant at $p < 0.05$. All other differences significant at $p < 0.001$.*

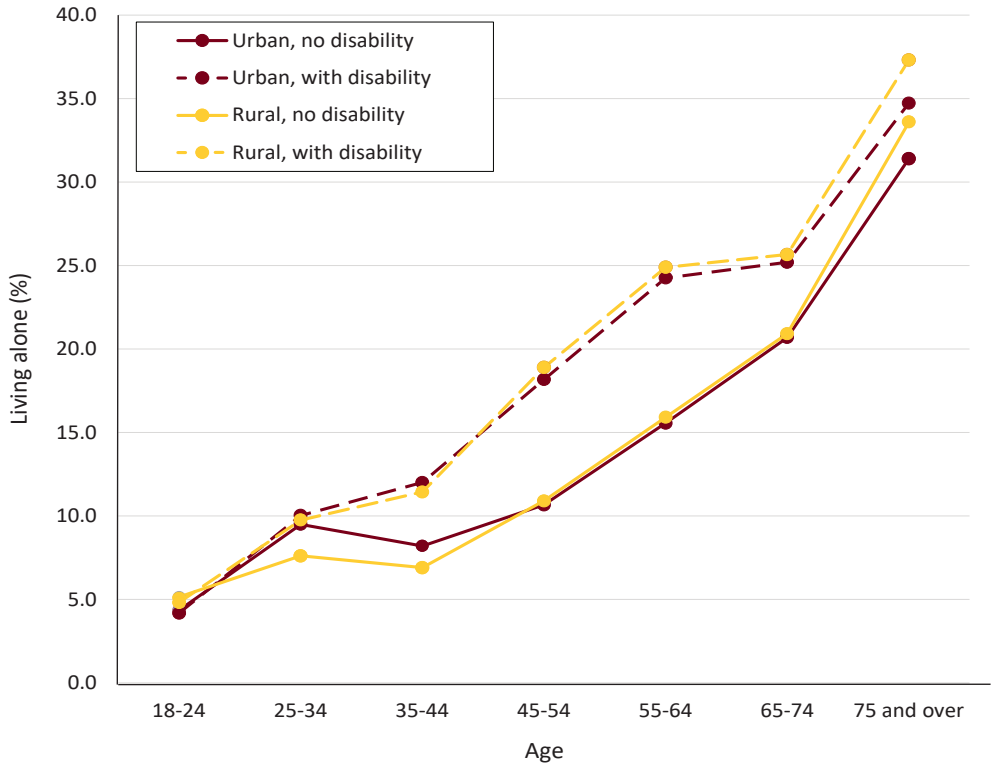
Figure 2. Prevalence of Individual Disability Types for Adults Living Alone (2014-2018)



The most common type of disability among adults living alone is ambulatory difficulty, reported by 20.8% of rural adults living alone and 15.5% of urban adults living alone.

Figure 3 shows differences in the rate of living alone by rurality, disability status, and age. Living alone is relatively rare (≤ 5%) for adults ages 18-24 regardless of rurality or disability status. For adults ages 25-44, rates of living alone are lower for rural adults with no disability, compared with urban adults with no disability. In both rural and urban locations, adults ages 35 and older with disabilities are considerably more likely to live alone than their same-aged counterparts without disabilities. As age increases, each of the three characteristics (rural location, older age, and disability) generally corresponds to higher rates of living alone, so the group with the highest rate of living alone overall is rural adults age 75 and older with a disability (37.3%).

Figure 3. Rates of Living Alone by Rurality, Age, and Disability Status (2014-2018)



Using multivariable models confirms that older age and disability are both associated with higher rates of living alone in rural areas, independent of other characteristics. Among adults age 75 or older, controlling for sex and disability status, those in rural areas are 13.9% more likely (odds ratio: 1.139) to live alone than those in urban areas. Similarly, among adults with a disabil-

ity, controlling for sex and age, those in rural areas are 7.0% more likely (odds ratio: 1.070) to live alone than those in urban areas. Finally, among adults who are 75 or older *and* have a disability, controlling for sex, those in rural areas are 16.4% more likely (odds ratio: 1.164) to live alone.

Discussion and Implications

Our analysis shows that among older adults with disabilities, those who reside in rural areas (i.e., outside of metro areas) are distinctly more likely to live alone than those in urban (metro) areas. Likewise, those living alone in rural areas include distinctly larger shares of older adults and adults with disabilities than those living alone in urban areas. These three characteristics—older age, disability, and rural residence—are compounding factors, such that adults with all three characteristics are the single group we find most likely to live alone.

There are many possible explanations for these findings, related to differences in availability of alternative housing, options for living arrangements, and individual preferences by rural and urban location. Our analysis does not shed light on why there are rural/urban differences in rates of living alone. Yet, it is clear that the demographics of those living alone are different between rural and urban areas in ways that suggest potentially greater support needs for those living alone in rural areas.

Because rural communities have unique health care, housing, and socio-demographic landscapes, specific efforts may be required to meet the needs of adults living alone. Policy efforts to support rural adults living alone might include addressing the need for affordable, well-maintained housing stock in rural areas, especially housing that is accessible for individuals with mobility limitations.[16–18] This is particularly important given our finding that more than one-fifth of adults living alone in rural areas have an ambulatory disability that makes walking and climbing stairs difficult. Older adults in rural areas are more likely than their urban counterparts to own their homes and to have paid off their mortgages; they are also more likely to live in older homes and to have lived in those homes longer.[19] For some rural residents, this may mean aging in place in homes for which they are solely responsible for maintenance, modification, and upkeep costs even as their own disability status changes.

Additionally, rural residents living alone with disabilities or underlying health conditions may require specialized transportation or additional medical attention, or, in some cases, assistance meeting their basic needs. In cases where they cannot drive themselves, they must rely on others outside of their household or on service provision in their local area; this is particularly challenging for rural residents where public transportation is limited and transportation barriers are myriad.[20,21] Finally, ensuring that individuals living alone are socially connected requires access to others outside of one's household, either virtually or in-person. Rural areas have unique constraints for meeting social needs, including more limited broadband Internet, transportation barriers, and greater distances between individuals.[6,22]

Conclusion

Demographic trends suggest that the prevalence of adults living alone will only continue to grow. For some people, living alone can be a positive and healthy choice, but this is not always the case. Because, overall, living alone is associated with poorer health and an increased risk of loneliness and social isolation, it is of critical public health importance to understand as much as possible about the characteristics of this population.

Programs and policies to better support this population are urgently needed, particularly in rural communities, where those living alone are more likely to be older and to have disabilities than those in urban areas. This may include an increased focus on affordable housing options, increased availability of public transportation, and reducing barriers to accessing mental and behavioral health care. Additionally, given that one-third of rural adults living alone have a disability, and one-fifth have a disability that makes walking or climbing stairs difficult, programs to modify existing housing stock and provide new housing options that are accessible are especially important.

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