Evaluating Well-being at Community Level

Angela L. Murad, MPH, RDN; Meaghan Sheridan, MPH; Graham Briggs, MS; Derrick Fritz, BA, CHES; Zhen Wang, PhD; M. Hassan Murad, MD, MPH; and Robin G. Molella, MD, MPH

Abstract

Objective: To measure well-being at a community level using a valid instrument.

Patients and Methods: Written surveys were mailed to a random sample of residents in Olmsted County, Minnesota, in 2015 and 2019 including the 5-item World Health Organization Well-being Index (0-100; for which 100 is the best imaginable well-being or quality of life). Multivariable hierarchical regression was used to evaluate the association between well-being and demographic characteristics, comorbid conditions, and environmental factors.

Results: The survey was returned by 1232 of 4000 individuals (response rate, 30.80%). The average well-being score was 70.02. Impaired well-being was identified in 223/1187 individuals (18.79%). Adjusted regression models showed that impaired well-being was independently associated with household poverty, financial stress, reduced access to medical or mental health care, ever having depression diagnosed, living in an unsafe community, or being socially isolated.

Conclusion: One in 5 people in a county in the US Midwest have impaired well-being. Well-being was associated with several modifiable factors. Data provide a rationale for policies that align transportation and housing and create opportunities for community members to connect and interact in a safe environment.

The well-being of a person is a critical construct that correlates with how well the person functions, thrives, and prospers. This construct can extend beyond individuals to include interactions and relationships among individuals and their environment. Therefore community well-being as a concept reflects both the measure of how individual members are doing within the community and how well the social, governmental, and environmental structures of the community lead to well-being. The World Health Organization (WHO) Constitution states that health and well-being are viewed as a vital resource for societies to have economic and social stability and the Centers for Disease Control and Prevention suggest that well-being may be an important population outcome that can be tracked and used at a community level to prevent disease and develop health promotion strategies.

Although well-being was initially measured in industrialized nations using financial indicators such as the gross domestic product, further research found that income and happiness continue to increase with income until a certain point, suggesting that there is more to well-being than wealth. Examples of measuring well-being at a community level are in the city of Santa Monica, California, in the United States and in Canadian communities using the Canadian Index of Wellbeing. Another approach is to consider the self-reported individual experiences of members of the community in aggregate as a measure of well-being.

The 5-item WHO Well-being Index (WHO-5) is one tool that can measure the well-being of individuals and predict both risk for depression and positive well-being. The index is composed of 5 simple items reflected in a positive tone used to assess how the respondent has felt over the last 2-week period. The WHO-5 has high sensitivity (>80%) and specificity (>70%) for detecting stress, depression, and suicidal ideation, as demonstrated in 18 studies that enrolled close to 6000 individuals.
with various comorbid conditions. It also has high clinimetric validity when compared with 85 other questionnaires.

Understanding the average well-being of individuals in a community and how it differs among subpopulations and individuals with various characteristics and comorbid conditions is critical to develop and evaluate interventions targeting health improvement in the community. Therefore, we aimed to randomly sample residents of Olmsted County, Minnesota, to evaluate their well-being and determine how it varied based on demographic characteristics, comorbid conditions, and environment.

**PATIENTS AND METHODS**

**Survey Methods**
The Olmsted County Public Health Services in Southeast Minnesota conducts triennial community health needs assessment surveys as a part of a community health assessment and planning process. These surveys included questions that assess the subjective well-being of the county residents using the WHO-5. The data source used in this study is the 2015 and 2019 surveys. A random sample of the county residential addresses was purchased from a national sampling vendor. An address-based sampling was used so that all households would have an equal chance of being sampled for the survey. The “most recent birthday” method of within-household respondent selection was used to specify 1 adult from each selected household to complete the survey. An initial survey packet was mailed to 2000 sampled households in each of the 2 survey cycles, including a cover letter, the survey, and a postage-paid return envelope. A post card reminder was mailed after 10 days to those who had not yet returned a survey. Two weeks after the reminder, another full survey packet was sent to those who had not returned the survey. The remaining completed surveys were received over the next 4 weeks. The Institutional Review Board considered the study exempt. The actual survey questions are available from https://www.co.olmsted.mn.us/OCPHS/reports/Needs%20A

**Measuring Well-being**
Each item of the WHO-5 is scored using a Likert scale from 5 (all the time) to 0 (at no time). The final score is the total raw score multiplied by 4 to provide a percentage scale from 0 to 100, for which 0 is defined as the worst imaginable well-being or quality of life, to 100, which is defined as the best imaginable well-being or quality of life. A final score less than 50 or a raw score of 0 or 1 on any single item is considered an indicator of impaired well-being.

**Statistical Analyses**
We performed descriptive statistics reporting mean ± SD for continuous variables and proportions for binary variables. In univariate analysis, 2-sample t tests for and \( \chi^2 \) tests were used to evaluate the association of various factors with the outcome of interest, well-being. Each analysis was done twice, with well-being considered as a continuous outcome (WHO-5 final score) or a binary outcome (whether individuals had impaired well-being).

Further, we constructed a 2-level, random-intercept, hierarchical linear regression model for total WHO-5 scores and 2-level, random-intercept, hierarchical logistic regression model for impaired well-being, accounting for unobserved difference between the 2 surveys. The adjusted factors included in the model were age, sex, race (white vs all others), binge alcohol drinking (≥4 drinks for females or ≥5 drinks for males during the past 30 days), smoking status (current and past smoker vs nonsmoker), adequate physical exercise (≥5 times a week for at least 30 minutes of moderate exercise or ≥3 times a week for at least 20 minutes of vigorous exercise), vegetable and fruit consumption (≥1 serving of fruit, fruit juice, or vegetable in the past day), education level (some college education and above vs high school or lower), employment status (full-time employed vs others), marriage status (married vs others), household income (annual income ≤$35,000 vs >$35,000), multicomorbidity (≥2
| TABLE 1. Unadjusted Analysis of Well-being* |
|-------------------------------------------|
| Mean WHO-5 Score | 95% CI Lower Limit | 95% CI Upper Limit | P | Impaired Wellness, no. (%) | P |
|------------------|---------------------|---------------------|---|--------------------------|---|
| **Triennial survey comparison** | | | | | | |
| 2015-2017 | 634 | 69.87 | 68.47 | 71.27 | .77 | 122/638 (19.12) |
| 2018-2020 | 545 | 70.19 | 68.65 | 71.73 | .75 | 101/549 (18.39) |
| **Sex** | | | | | | |
| Male | 496 | 71.64 | 70.15 | 73.12 | .01<sup>a</sup> | 74/500 (14.80) |
| Female | 676 | 68.89 | 67.47 | 70.32 | .004<sup>b</sup> | 146/680 (21.47) |
| **Marital status**<sup>c</sup> | | | | | | |
| Married | 765 | 71.98 | 70.84 | 73.13 | <.001<sup>c</sup> | 107/768 (13.93) |
| Unmarried | 399 | 66.24 | 64.17 | 68.30 | <.001<sup>c</sup> | 112/403 (27.79) |
| **Race** | | | | | | |
| Nonwhite | 58 | 71.93 | 66.98 | 76.88 | .41<sup>d</sup> | 21/1127 (1.82) |
| White | 1121 | 69.92 | 68.86 | 70.98 | .81<sup>d</sup> | 12/60 (20) |
| **Household income**<sup>e</sup> | | | | | | |
| ≤$35,000 | 198 | 62.48 | 59.31 | 65.66 | <.001<sup>e</sup> | 74/201 (36.81) |
| >$35,000 | 882 | 71.38 | 70.28 | 72.48 | <.001<sup>e</sup> | 132/885 (14.91) |
| **Financial stress**<sup>f</sup> | | | | | | |
| No | 913 | 72.66 | 71.57 | 73.74 | <.001<sup>f</sup> | 203/957 (21.21) |
| Yes | 300 | 70.05 | 59.81 | 64.60 | 91/218 (41.74) |
| **Comorbid conditions**<sup>g</sup> | | | | | | |
| ≥2 | 567 | 66.93 | 19.20 | 66.93 | <.001<sup>g</sup> | 140/573 (24.43) |
| <2 | 478 | 74.75 | 15.18 | 74.75 | <.001<sup>g</sup> | 53/479 (11.06) |
| **Ever had depression diagnosed**<sup>h</sup> | | | | | | |
| No | 893 | 73.53 | 72.52 | 74.54 | <.001<sup>h</sup> | 118/900 (13.11) |
| Yes | 214 | 56.26 | 53.30 | 59.23 | 90/214 (42.05) |
| **Employment** | | | | | | |
| Full time | 659 | 70.29 | 68.85 | 71.74 | .56<sup>i</sup> | 134/666 (20.12) |
| Part time/unemployed | 520 | 69.67 | 68.19 | 71.15 | .18 | 89/521 (17.08) |
| **Education** | | | | | | |
| Some college | 902 | 70.36 | 69.19 | 71.53 | .25<sup>i</sup> | 58/265 (21.89) |
| ≤High school | 263 | 68.90 | 66.58 | 71.21 | .14<sup>i</sup> | 162/908 (17.84) |
| **Access to health care** | | | | | | |
| No delay in care | 990 | 71.56 | 70.50 | 72.62 | <.001<sup>i</sup> | 154/994 (15.49) |
| Delayed care | 175 | 61.97 | 58.76 | 65.17 | 62/178 (34.83) |
| **Access to mental health**<sup>l</sup> | | | | | | |
| No delay in mental health care | 1064 | 71.68 | 70.68 | 72.68 | <.001<sup>l</sup> | 174/1072 (16.23) |
| Delayed care | 100 | 52.84 | 48.07 | 57.61 | 44/100 (44) |
| **Social connectedness**<sup>m</sup> | | | | | | |
| Not connected | 326 | 65.18 | 62.80 | 67.55 | <.001<sup>m</sup> | 96/328 (29.27) |
| Socially connected | 823 | 71.84 | 70.73 | 72.95 | <.001<sup>m</sup> | 121/827 (14.63) |
| **Binge drinking**<sup>n</sup> | | | | | | |
| No | 892 | 70.52 | 69.34 | 71.69 | .03<sup>n</sup> | 12/899 (1.39) |
| Yes | 238 | 67.56 | 65.08 | 70.05 | 44/1137 (3.87) |
| **Regular physical activity**<sup>b</sup> | | | | | | |
| No | 633 | 67.37 | 65.93 | 68.81 | <.001<sup>b</sup> | 140/636 (22.01) |
| Yes | 544 | 73.07 | 71.62 | 74.53 | .002<sup>b</sup> | 83/466 (17.81) |
| **Vegetable/fruit intake, per additional serving**<sup>q</sup> | | | | | | |
| 0.14 | | | | | | |
| **Smoking**<sup>q</sup> | | | | | | |
| Never smoked | 782 | 71.59 | 70.34 | 72.83 | <.001<sup>q</sup> | 141/788 (17.89) |
| Ever having smoked | 376 | 66.84 | 64.98 | 68.70 | .35<sup>q</sup> | 76/377 (20.16) |

*Continued on next page*
comorbid conditions vs 2 comorbid conditions), and a history of a diagnosis of depression. In addition, we adjusted for access to medical care, access to mental health care, living in a safe community, social connectedness, and financial stress. The definition of variables and related survey questions are in Supplemental Table 1 (available online at https://mcpiqojournal.org).

Statistical analyses were conducted using Stata SE, version 16.1 (StataCorp LLC).

RESULTS

Survey Respondents and Demographic Characteristics
The survey was returned by 1232 individuals (658 in 2015 and 574 in 2019). The overall response rate was 30.80%. The respondents had an average age of 58 years and were mostly white (95%; n=1232). Most were women (58%; n=1225), were married (65%; n=1214), and reported an annual income of $35,000 or more (81%; n=1224). The average well-being score of the community was 70.02 (of 100) but 18.79% (n=223/1187) had impaired well-being. The characteristics of respondents are summarized in Supplemental Table 2 (available online at https://mcpiqojournal.org).

Table 1. Continued

| Safe communitya | No. | Mean WHO-5 Score | 95% CI Lower Limit | 95% CI Upper Limit | P | Impaired Wellness, no. (%) | P |
|-----------------|-----|------------------|--------------------|--------------------|---|--------------------------|---|
| Don’t feel safe | 71  | 58.76            | 53.19              | 64.33              | <.001c | 32/72 (44.44)   | <.001c |
| Feel safe      | 1108| 70.74            | 69.71              | 71.77              | 191/1115 (17.13) |

*NA, nonapplicable; WHO-5, 5-item World Health Organization Well-being Index.

*The variable is statistically significantly associated with either WHO-5 score or having impaired well-being status.

*Statistical significance (P<.05).

Univariable Analysis
There was no statistically significant difference in mean WHO scores between the 2 survey cycles. Those with impaired well-being had a similar age as those who did not (P=.64). Mean well-being index scores were higher in individuals who identified as men, married, had higher income, had less than 2 comorbid conditions, had never had depression diagnosed, had better access to health care, had better access to mental health care, were socially connected, or felt safe at home. Mean well-being index scores were also higher in individuals who had regular physical activity, did not report binge drinking, never smoked, or had more servings of fruit and vegetables. There was no statistically significant association between well-being and employment status, education level, and race. The analysis was consistent when well-being was assessed as a continuous or binary variable for almost all variables examined. The results are summarized in Table 1.

Multivariable Analysis
In multivariable regression, the following variables were significantly associated with WHO-5 final score: regular physical activity, smoking, fruit and vegetable intake, poverty, having 2 or more comorbid conditions, a prior diagnosis of depression, access to health care, access to mental health care, living in a safe community, and financial stress (Table 2). Impaired well-being was significantly associated with poverty, having 2 or more comorbid conditions, a prior diagnosis of depression, access to health care, access to mental health care, living in a safe community, and social connectedness (Table 3).

DISCUSSION

Main Findings
We conducted random surveys in 2015 and 2019 that evaluated the well-being of individuals in Olmsted County, Minnesota. The community overall had a well-being score that averaged 70 of a maximum of a 100; although 1 in 5 individuals had a score that
suggested impaired well-being. This prevalence is consistent with the prevalence of depressive disorders in Olmsted County identified through a large population-based study, which further validates the findings of this survey. Well-being scores or the status of having impaired well-being were independently associated with several potentially modifiable factors, such as household poverty, financial stress, reduced access to medical or mental health care, ever having depression diagnosed, living in an unsafe environment, or being socially isolated. Some other observed associations of well-being with lifestyle habits such as physical activity, smoking, and fruit and vegetable intake may be confounded with other factors such as household poverty. We did not identify a clear sex or age difference in well-being, although some studies suggest a shift in well-being indicators for happiness in industrialized nations, for which in men it has improved and in women it has declined.

This survey suggests an important impact of social isolation on well-being. Research suggests that persistent loneliness and social isolation in adults may be an indicator of many physiologic changes and poor health outcomes that may be worse than smoking, being obese, and being physically inactive. The National Academies of Sciences, Engineering, and Medicine points out that more than one-third of adults 45 years and older feel lonely, and nearly one-fourth of adults 65 years and older are considered to be socially isolated. Factors contributing to social isolation in older adults include living alone, the loss of family or friends, having a chronic illness, and hearing loss. Immigrants and lesbian, gay, bisexual, and transgender populations are at increased risk for social isolation.

**Strengths**

The random sampling approach reduced the risk of bias and improved the generalizability of conclusions derived from the sample. The survey had an acceptable response rate with a very small number of missing or incomplete responses. The WHO-5 is particularly favored...
over other instruments because it does not address disease-specific or treatment-related symptoms and thus provides a measure of general well-being with high construct validity in various settings and populations. Although the index is often used as an outcome in randomized trials of individuals with various comorbid conditions or diagnoses, we used it at a population level to provide a measure of community well-being.

Limitations
The WHO-5 only measures positive emotions and may not capture the full spectrum of affective states or their severity or long-term symptoms. The current study does not provide reliable data about the well-being in black, indigenous, and people of color or lesbian, gay, bisexual, and transgender populations due to low representation in the survey data. Reaching out to such individuals is needed through targeted and purposeful sampling and different formats than written surveys, such as user-centered community listening sessions.

Policy Recommendations
Communities should consider measuring well-being using the brief WHO-5 as part of health needs assessments. Including WHO-5 on a community health needs assessment allows for tracking of community well-being without the need for lengthy instruments. Directly measuring well-being along with other critical health parameters over time can identify when progress is made or critical threats are affecting the population and may help in identifying specific needs in the community that are more pressing. This will be critical as we address recovery needs from coronavirus disease 2019, for which the domains we identified in our work, such as living in a safe community and social connectedness, are vital concerns.

Our findings are supported by established public health research suggesting that to improve well-being; communities need to be safe, be connected, and have access to medical and mental health care. According to the US Department of Housing and Urban Development, 3 characteristics are required to build

| TABLE 3. Multivariable Adjustment for the Binary Outcome of Impaired Well-being |
|---------------------------------------------------------------|
| Coefficient | P   | 95% CI Lower Limit | 95% CI Upper Limit |
| Age          | 0.00 | .59 | -0.02 | 0.01 |
| Sex, female  | 0.22 | .32 | -0.22 | 0.66 |
| Race, white  | 0.15 | .80 | -1.01 | 1.30 |
| Lifestyle:    |      |    |      |      |
| Binge drinking | -0.07 | .80 | -0.57 | 0.44 |
| Smoking       | -0.06 | .79 | -0.51 | 0.38 |
| Regular physical activity | -0.13 | .54 | -0.54 | 0.28 |
| Vegetable/fruit servings | -0.08 | .05 | -0.15 | 0.00 |
| Education, attended some college | -0.04 | .89 | -0.57 | 0.50 |
| Employment, full time | -0.38 | .13 | -0.87 | 0.12 |
| Married       | -0.34 | .14 | -0.79 | 0.11 |
| Income ≤$35,000/y | 0.67 | .02 | 0.11 | 1.24 |
| Financial stress | 0.26 | .27 | -0.20 | 0.73 |
| ≥2 Comorbid conditions | 0.60 | .01 | 0.12 | 1.08 |
| Ever had depression diagnosed | 1.04 | <.001 | 0.57 | 1.52 |
| Delayed access to medical care | 0.74 | .004 | 0.24 | 1.23 |
| Delayed access to mental health care | 0.68 | .02 | 0.09 | 1.27 |
| Safe community | -0.91 | .01 | -1.60 | -0.21 |
| Socially connected | -0.47 | .03 | -0.91 | 0.04 |

*A positive coefficient suggests impaired well-being
bStatistical significance (P<.05).
connected communities, which are walkable street design, places for people to safely meet, and connections to destinations that allow residents the ability to walk, bicycle, or take public transportation to schools, grocery stores, health care facilities, libraries, and major employment centers. With a commitment from local, state, regional, and federal decision makers and the community members, transportation options and housing could be aligned.

Access to medical or mental health care was associated with impaired well-being. This is particularly important in rural and low-income areas where professional shortage is common and transportation options are limited. Legislation to increase funding and provide community-based behavioral health services for mental health and substance abuse treatment will be a critical policy initiative. The use of telehealth, telemedicine, and telepsychiatry may allow more patients to receive quality care from their homes, particularly those with limited mobility, limited transportation options, or disabilities.

Housing and homelessness are ongoing threats to well-being and to social connectedness and safety. Creative models for addressing these issues have been explored in various communities. One approach is shared housing, which matches people who have unused space with people who need housing; typically, at least 1 party is 60 years or older. Sometimes the arrangement involves simply rent and companionship but sharers can also agree on lower rent in exchange for grocery shopping, dog walking, driving, or other services. One program in New York City, funded through the city and state Department of Aging, state legislation, and private contributions, has professional social work staff comprehensively screen and check the references of all host and guest applicants. Another creative housing option is co-housing, in which a group of people buy land to build a housing complex. Families have their own homes but share common spaces for meals and other functions.

Long and harsh winter months can exacerbate social isolation. The 8-80 Cities, a not-for-profit organization that aims to transform urban communities for all ages, has developed a program called Wintermission to combat social isolation and increase physical activity in the winter no matter the age, socioeconomic status, or ethnocultural background.

CONCLUSION

One in 5 people in a US Midwestern county have impaired well-being. Well-being was associated with several modifiable factors, particularly social connectedness, safe neighborhoods, and access to mental and medical health care. Interventions and policy changes to address well-being can either use existing infrastructure or require specific considerations when designing a new community. These policy considerations should focus on improving access to health care, aligning housing and transportation, and creating opportunities for community members to safely connect and interact.

SUPPLEMENTAL ONLINE MATERIAL

Supplemental material can be found online at https://mcpiqojournal.org. Supplemental material attached to journal articles has not been edited, and the authors take responsibility for the accuracy of all data.

Abbreviations and Acronyms. WHO-5, 5-item World Health Organization Well-being Index

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Correspondence. Address to M. Hassan Murad, MD, MPH, Mayo Clinic, 200 1st St SW, Rochester, MN 55905 (murad.mohammad@mayo.edu).

ORCID

Angela L. Murad: https://orcid.org/0000-0001-9051-0546; Zhen Wang: https://orcid.org/0000-0002-9368-6149; M. Hassan Murad: https://orcid.org/0000-0001-5502-5975

REFERENCES

1. VanderWeele TJ. Measures of community well-being: a template. Int J Community Well-Being. 2019;2:253-275.
2. Hilger-Kolb J, Ganter C, Albrecht M, et al. Identification of starting points to promote health and wellbeing at the community level - a qualitative study. BMC Public Health. 2019;19:57.
3. World Health Organization. Health 2020. A European Policy Framework and Strategy for the 21st Century. Copenhagen:
World Health Organization Regional Office for Europe; 2013.
4. Centers for Disease Control and Prevention. Health-related quality of life. Well-being concepts. 2018: https://www.cdc.gov/nphp/wellbeing.htm. Accessed November 17, 2020.
5. Vik-MH, Carlquist E. Measuring subjective well-being for policy purposes: the example of well-being indicators in the WHO “Health 2020” framework. Scand J Public Health. 2018;46(2):279-286.
6. Santa Monica Well-being Project. https://santamonicawellbeing.org. Accessed September 27, 2021.
7. Canadian Index of Wellbeing. How Are Canadians Really Doing? The CW National Report. Waterloo, ON: Canadian Index of Wellbeing and University of Waterloo. https://uwaterloo.ca/canadian-index-wellbeing/resources/reports. Accessed November 17, 2020.
8. Topp CW, Østergaard SD, Søndergaard S, Bech P. The WHO-5 Well-Being Index: an evidence review of the literature. Psychother Psychosom. 2015;84(3):167-176.
9. Hall T, Krahm GL, Horner-Johnson W, Lamb G. Rehabilitation Research and Training Center Expert Panel on Health Measurement. Examining functional content in widely used Health-Related Quality of Life scales. Rehabil Psychol. 2011;56(2):94-99.
10. The World Health Organisation- Five Well-Being Index (WHO-5). https://www.corc.uk.net/outcome-experience-measures/the-world-health-organisation-five-well-being-index-who-5. Accessed December 1, 2020.
11. Rochester Epidemiology Project. https://www.rochesterproject.org/portal. Accessed December 1, 2020.
12. Stevenson B, Wolfers J. The paradox of declining female happiness. Am Econ J. 2009;1(2):190-225.
13. Centers for Disease Control and Prevention. Loneliness and social isolation linked to serious health conditions. https://www.cdc.gov/aging/publications/features/lonely-older-adults.html. Accessed November 17, 2020.
14. Gerst-Emerson K, Jayawardhana J. Loneliness as a public health issue: the impact of loneliness on health care utilization among older adults. Am J Public Health. 2015; 105(5):1013-1019.
15. National Academies of Sciences, Engineering, and Medicine. Social Isolation and Loneliness in Older Adults: Opportunities for the Health Care System. Washington, DC: The National Academies Press; 2020.
16. Kusier AO, Falker AP. The Well-Being Index WHO-5: hedonic foundation and practical limitations. Med Humanit. 2020; 46(3):333-339.
17. Swedeen B, Cooney M, Moss C, Carter EW. Launching inclusive efforts through community conversations: A practical guide for families, services providers, and communities. Waisman Center, University of Wisconsin-Madison. https://www2.waisman.wisc.edu/cidd/pdfs/products/community/launchinginclusiveEfforts.pdf. Accessed November 17, 2020.
18. United States Department of Housing and Urban Development. Office of Policy Development and Research. Creating connected communities: a guidebook for improving transportation connections for low and moderate-income households in small and mid-sized cities. https://www.huduser.gov/publications/pdf/Creating_Cnnted_Comm.pdf. Accessed November 17, 2020.
19. Span P. ‘We need each other’: seniors are drawn to new housing arrangements. Older Americans are exploring housing alternatives, including villages and home-sharing. The New York Times. https://www.nytimes.com/2019/09/27/health/seniors-housing-sharing-villages.html. Published September 27, 2019. Accessed December 1, 2020.
20. Next City. To combat social isolation in seniors, craft a holistic system of care. https://nextcity.org/features/view/to-combat-social-isolation-in-seniors-craft-a-holistic-system-of-care. Accessed November 17, 2020.
21. 8-80 Cities. We believe. Whether you’re 8 or 80 years old, cities should work for everyone. https://www.880cities.org/about-8-80-cities. Accessed December 1, 2020.