

Supplemental Research Guide: Social Isolation

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I. DEFINING SOCIAL ISOLATION

A. Definitions

- 1. <u>Social Isolation</u> is "...the opposite of social integration or a lack of social interaction and therefore [defined] as having only few confidents or closely related persons or none at all."
- 2. <u>Loneliness</u> is "...the subjective emotion of feeling apart or distant from others."
 "Loneliness as distinguished from isolation does not mean *being* alone and isolated, but *feeling* alone, unsupported and isolated (or socially disconnected)."

 3
- 3. <u>Social Capital</u> (a term coined by Harvard Political Scientist Dr. Robert Putnam) refers to "...features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit."⁴

B. Is Loneliness Distinct from Social Isolation?

- 1. Theoretical Distinctions
 - a. Social isolation is a structural position characterized by fewer social connections or attachments.⁵ In this sense, social isolation is objective and measurable.
 - b. Loneliness is "...the subjective emotion of feeling apart or distant from others."
- 2. Empirical Evidence: loneliness is associated with but separate from the structural position of isolation.⁷
 - Social isolation and loneliness are least correlated at younger and older ages.
 - i. Young people often feel lonely despite having many peers.
 - ii. Elderly people often do not feel lonely despite smaller social networks.8

¹ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

² Pg. 154; Parigi, Paolo, and Warner Henson. "Social isolation in America." *Annual Review of Sociology* 40 (2014): 153-171.

³ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

⁴ Putnam, Robert D. *Bowling alone: The collapse and revival of American community*. Simon and Schuster, 2000.

⁵ Pg. 154; Parigi, Paolo, and Warner Henson. "Social isolation in America." *Annual Review of Sociology* 40 (2014): 153-171.

⁶ Pg. 154; Parigi, Paolo, and Warner Henson. "Social isolation in America." *Annual Review of Sociology* 40 (2014): 153-171.

⁷ Coyle, Caitlin E., and Elizabeth Dugan. "Social isolation, loneliness and health among older adults." Journal of aging and health 24.8 (2012): 1346-1363.

⁸ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

b. The loneliness experienced by alcoholics is not directly linked to their external social network, but rather to their negative social and selfperceptions.⁹

C. Measuring Social Isolation

- 1. It is difficult to measure social isolation: is isolation the lack of *social connection* or the lack of *meaningful relationships*?¹⁰
- 2. It is difficult to identify causal linkages between social isolation and correlated conditions. For example, how might social isolation affect health? "One possibility is that there is a causal link between living alone, being socially isolated, and feeling lonely. But these are three distinct conditions and experiencing one (living alone) does not necessarily mean experiencing one or both of the others (being isolated or feeling lonely)."

D. Causes of Social Isolation

1. Loneliness

- Social isolation and loneliness are associated with increased mortality.
 Perhaps loneliness is a 'pathway' through which social isolation increases mortality.
- After statistically controlling for demographic factors and baseline health, loneliness is not significantly associated with increased mortality. In contrast, social isolation is significantly correlated with increased mortality.¹²

2. Technology

- a. Unlike mass media (television, radio), use of social media (Facebook, Twitter, etc.) is driven by the desire for interpersonal connection. However, some research suggests social media enhances social connectivity at the price of *depth*.
- b. Individuals who frequently use social media are more likely to be lonely than those who use social media less.¹³
 - i. Interpersonal communication¹⁴ and a desire for social connection¹⁵ motivate social media use.

⁹ Åkerlind, Ingemar, and Jan Olof Hörnquist. "Loneliness and alcohol abuse: A review of evidences of an interplay." *Social science and medicine* 34.4 (1992): 405-414.

¹⁰ Pg. 162; Parigi, Paolo, and Warner Henson. "Social isolation in America." *Annual Review of Sociology* 40 (2014): 153-171.

¹¹ Klinenberg, Eric. "Social isolation, loneliness, and living alone: identifying the risks for public health." *American journal of public health* 106.5 (2016): 786.

¹² Steptoe, Andrew, et al. "Social isolation, loneliness, and all-cause mortality in older men and women." *Proceedings of the National Academy of Sciences* 110.15 (2013): 5797-5801.

¹³ Demarinis, Susie. "Loneliness at epidemic levels in America." *Explore (New York, NY)* (2020).

¹⁴ Hanson, Gary, and Paul Haridakis. "YouTube users watching and sharing the news: A uses and gratifications approach." *Journal of Electronic Publishing* 11.3 (2008).

¹⁵ Haridakis, Paul, and Gary Hanson. "Social interaction and co-viewing with YouTube: Blending mass communication reception and social connection." *Journal of Broadcasting and Electronic Media* 53.2 (2009): 317-335.

- ii. Friendships originating via the Internet are less intimate and supportive.¹⁶ Moreover, social media use takes time away from face-toface interactions.¹⁷
- c. "Alone together" (a term coined by Dr. Sherry Turkle) refers to how technology-enhanced social connectivity comes at the expense of any given social connection's depth. "Online, we easily find company but are exhausted by the pressures of performance. We enjoy continual connection but rarely have each other's full attention. We can have instant audiences but flatten out what we say to each other. The ties we form through the Internet are not, in the end, the ties that bind." 18
- 3. Poor Health Cognitive Discrepancy Theory suggests "...poor health will have a negative influence on social participation and social resources, and these factors will mediate between health and loneliness." ¹⁹
 - a. Perceived social isolation (PSI) leads to depression, cognitive decline, and problems with sleep; and the mechanisms through which PSI contributes to these effects are neural, hormonal, genetic, emotional, and behavioral.²⁰
 - b. Among aging adults in diverse urban neighborhoods, poor health was associated with social isolation.²¹

4. Modernity (Sociology)

- a. Social Isolation is a by-product of modernity. In earlier periods, community identity superseded individuals and therefore defined persons. The individual's ties and obligations to their community significantly constrained freedom.²² "Without the concept of the individual—which implies a certain degree of freedom in the private sphere—the malaise of social isolation could not take hold" [emphasis added].²³
- b. Putnam's Social Capital: Dr. Robert Putnam reinvigorated the modernity hypothesis by describing how contemporary people participate less in formal and informal forms of association, which undermines their

¹⁶ Mesch, Gustavo, and Ilan Talmud. "The quality of online and offline relationships: The role of multiplexity and duration of social relationships." *The information society* 22.3 (2006): 137-148.

¹⁷ Stern, Michael J. "How locality, frequency of communication and internet usage affect modes of communication within core social networks." *Information, Communication and Society* 11.5 (2008): 591-616.

¹⁸ Pg. 280; Turkle, Sherry. *Alone together: Why we expect more from technology and less from each other.* Hachette UK, 2017.

¹⁹ Burholt, Vanessa, and Thomas Scharf. "Poor health and loneliness in later life: the role of depressive symptoms, social resources, and rural environments." *Journals of Gerontology* Series B: Psychological Sciences and Social Sciences 69.2 (2014): 311-324.

²⁰ Bhatti, Adnan Bashir, and Anwar ul Haq. "The pathophysiology of perceived social isolation: effects on health and mortality." *Cureus* 9.1 (2017).

²¹ Hand, Carri, et al. "Understanding social isolation among urban aging adults: informing occupation-based approaches." *OTJR: occupation, participation and health* 37.4 (2017): 188-198.

²² Luhmann, Niklas. Love as passion: The codification of intimacy. Harvard University Press, 1986.

²³ Pg. 156; Parigi, Paolo, and Warner Henson. "Social isolation in America." *Annual Review of Sociology* 40 (2014): 153-171.

attachments to neighbors and communities. This decrease in participation results in declining political capital and weakened trust among citizens as individuals become more isolated and inward looking. People have disengaged from both political involvement and apolitical organizations—which indicates declining social capital.

- i. **Political**: decreased voter turnout, attendance at public meetings, work with political parties, and trust in government.
- ii. *Apolitical*: loss of membership and number of volunteers across many civic organizations, including religious institutions, labor unions, veteran groups, volunteer groups, and fraternal organizations.²⁴
- c. McPherson et al. estimate that, from the mid-1980s to the mid-2000s, the average size of immediate conversational networks shrank by 1/3 and the number of people who reported having nobody to talk to tripled.²⁵ Please note that this finding is disputed.²⁶

II. PREVALENCE OF SOCIAL ISOLATION

- A. Almost 25% of Americans can be considered either partly integrated or largely isolated.²⁷
- B. "[M]ore than three in five Americans are lonely, with more and more people reporting feelings of being left out, being poorly understood and lacking companionship."
- C. Gen Z (18-22 years old) reported the highest measured levels of loneliness, while Baby Boomers (55-73 years old) reported the lowest levels of loneliness.²⁸

III. SOCIAL ISOLATION DURING THE COVID-19 PANDEMIC

A. Prevalence

1. According to the Census, in 2019 28.4% of American households were one person households. If these individuals followed COVID-19 social distancing protocols, they spent much of 2020 living alone and socially isolated.²⁹

2. According to preliminary survey data on coronavirus loneliness, 1/3 of US respondents are affected by coronavirus loneliness. ³⁰

²⁴ Putnam, Robert D. *Bowling alone: The collapse and revival of American community*. Simon and Schuster, 2000.

²⁵ Pg. 353; McPherson, Miller, Lynn Smith-Lovin, and Matthew E. Brashears. "Social isolation in America: Changes in core discussion networks over two decades." *American sociological review* 71.3 (2006): 353-375.

²⁶ Pg. 657; Fischer, Claude S. "The 2004 GSS finding of shrunken social network: An artifact?" *American Sociological Review* 74.4 (2009): 657-669.

²⁷ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

²⁸ Demarinis, Susie. "Loneliness at epidemic levels in America." *Explore (New York, NY)* (2020).

²⁹ US Census Bureau. "Current population survey, annual social and economic supplement." (2013). https://www.census.gov/library/visualizations/2019/comm/one-person-households.html

³⁰ https://socialpronow.com/loneliness-corona/#1

- a. Coronavirus Ioneliness is 70% more common among Millennials (ages 40-54) than Baby Boomers.³¹
- b. Coronavirus loneliness affects 1 in 3 men compared to 1 in 4 women. 32
- c. Nine in ten people feel more anxious because of the coronavirus. 33
 - i. People with social anxiety are relieved not having to socialize and are worried about returning to interactions. ³⁴
 - ii. Women are more anxious than men about the coronavirus crisis.³⁵

B. Effects of Pandemic-Related Isolation

- 1. Older adults with dementia, especially those in care homes, are at an elevated risk of worse psychiatric symptoms due to pandemic-related social isolation.³⁶ Among older adults (average age 75) during the COVID-19 shelter-in-place orders in San Francisco, 40% reported social isolation. "Socially isolated participants reported difficulty finding help with functional needs including bathing (20% vs 55%). More than half (54%) of the participants reported worsened loneliness due to COVID-19 that was associated with worsened depression (62% vs 9%) and anxiety (57% vs 9%). Rates of loneliness decreased over time (4–6 weeks: 46% vs 13–15 weeks: 27%)."³⁷
- 2. Drug testing between March 13-July 10 (2020) indicated an increased prevalence and use of illegal substances compared to the four months preceding COVID-19 lockdowns (November 14 2019-March 12 2020).
 - a. The most noteworthy increases in prevalence were for fentanyl (3.80% Pre-COVID to 7.32% post-COVID) and methamphetamine (5.89% to 8.16%); increases in cocaine and heroin also were noted.³⁸ However, the samples were not nationally representative.

³¹ US Census Bureau. "Current population survey, annual social and economic supplement." (2013). https://www.census.gov/library/visualizations/2019/comm/one-person-households.html

³² US Census Bureau. "Current population survey, annual social and economic supplement." (2013). https://www.census.gov/library/visualizations/2019/comm/one-person-households.html

³³ US Census Bureau. "Current population survey, annual social and economic supplement." (2013). https://www.census.gov/library/visualizations/2019/comm/one-person-households.html

³⁴ US Census Bureau. "Current population survey, annual social and economic supplement." (2013). https://www.census.gov/library/visualizations/2019/comm/one-person-households.html

³⁵ US Census Bureau. "Current population survey, annual social and economic supplement." (2013). https://www.census.gov/library/visualizations/2019/comm/one-person-households.html

³⁶ Numbers, Katya, and Henry Brodaty. "The effects of the COVID-19 pandemic on people with dementia." *Nature Reviews Neurology* (2021): 1-2.

³⁷ Kotwal, Ashwin A., et al. "Social Isolation and Loneliness Among San Francisco Bay Area Older Adults During the COVID-19 Shelter-in-Place Orders." *Journal of the American Geriatrics Society* 69.1 (2021): 20-29.

³⁸ Wainwright, Jacob J., et al. "Analysis of drug test results before and after the US declaration of a national emergency concerning the COVID-19 outbreak." *Jama* 324.16 (2020): 1674-1677.

- b. The number of cases of nonfatal opioid-related overdose in one emergency department in Virginia increased from 102 cases in March-June 2019 to 227 cases in March-June 2020.³⁹
- "Parents' perceived social isolation and recent employment loss were associated with self-report of physical and emotional neglect and verbal aggression against the child, even after controlling for parental depressive symptoms, income, and sociodemographic factors."
 - "...[S]ocial isolation was associated with parental report of changes in discipline, specifically, using discipline and spanking more often in the past 2 weeks."⁴⁰
- 4. "...[N]egative psychological effects like post-traumatic stress symptoms, confusion, and anger are common. Common stressors include longer quarantine periods, infection fears, frustration, boredom, inadequate information, financial loss, and social stigma."⁴¹
 - a. "Anxiety symptoms link both the fear of COVID-19 and dispositional loneliness as well as depressive symptoms."⁴²
 - a. Some recovering from COVID-19 might experience delirium and a smaller number may experience depression, anxiety, fatigue, post-traumatic stress disorder, and rarer neuropsychiatric syndromes in the longer term.⁴³
 - b. Social isolation among pregnant women during the pandemic contributed to repetitive negative thinking and loneliness.⁴⁴
 - c. During the pandemic, "depressed and anxious mood mediated the relationship between perceived social isolation and change in perceived sleep quality."

³⁹ Ochalek, Taylor A., et al. "Nonfatal opioid overdoses at an urban emergency department during the COVID-19 pandemic." *Jama* 324.16 (2020): 1673-1674.

⁴⁰ Lee, Shawna J., et al. "Parental social isolation and child maltreatment risk during the CoViD-19 pandemic." *Journal of family violence* (2021): 1-12.

⁴¹ Brooks, Samantha K., et al. "The psychological impact of quarantine and how to reduce it: rapid review of the evidence." *The lancet* 395.10227 (2020): 912-920.

⁴² Rossi, Alessandro, et al. "The anxiety-buffer hypothesis in the time of COVID-19: when self-esteem protects from the impact of loneliness and fear on anxiety and depression." *Frontiers in Psychology* 11 (2020).

⁴³ Rogers, Jonathan P., et al. "Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19 pandemic." *The Lancet Psychiatry* 7.7 (2020): 611-627.

⁴⁴ Harrison, Virginia, Michelle L. Moulds, and Katie Jones. "Perceived social support and prenatal wellbeing; The mediating effects of loneliness and repetitive negative thinking on anxiety and depression during the COVID-19 pandemic." *Women and Birth* (2021).

⁴⁵ DeAngelis, B. N., and M. al'Absi. "Resilience and the Role of Depressed and Anxious Mood in the Relationship Between Perceived Social Isolation and Perceived Sleep Quality During the COVID-19 Pandemic." *International Journal of Behavioral Medicine* (2021).

IV. EFFECTS OF SOCIAL ISOLATION

A. Mental Health

- 1. Psychological Mediation (the effects of social isolation on physical health is mediated by psychological pathways).⁴⁶
- 2. Poorer overall mental health. 47 48
- 3. Reduced life satisfaction.49
- 4. Psychological Issues
 - a. Increased risk of suicide.50
 - b. Sleep problems. 51
 - c. Reduced psychological wellbeing. 52 53
 - d. Moderate-to-severe depression.⁵⁴ ⁵⁵ ⁵⁶ ⁵⁷ ⁵⁸ ⁵⁹

⁴⁶ Na, Ling, and Dale Hample. "Psychological pathways from social integration to health: An examination of different demographic groups in Canada." *Social Science and Medicine* 151 (2016): 196-205.

⁴⁷ Coyle, Caitlin E., and Elizabeth Dugan. "Social isolation, loneliness and health among older adults." *Journal of aging and health* 24.8 (2012): 1346-1363.

⁴⁸ Miyawaki, Christina E. "Association of social isolation and health across different racial and ethnic groups of older Americans." *Ageing and society* 35.10 (2015): 2201.

⁴⁹ Bergin, Adele, and Kenneth Pakenham. "Law student stress: Relationships between academic demands, social isolation, career pressure, study/life imbalance and adjustment outcomes in law students." *Psychiatry, Psychology and Law* 22.3 (2015): 388-406.

⁵⁰ Tsai, Alexander C., et al. "Social integration and suicide mortality among men: 24-year cohort study of US health professionals." *Annals of internal medicine* 161.2 (2014): 85-95.

⁵¹ Bhatti, Adnan Bashir, and Anwar ul Haq. "The pathophysiology of perceived social isolation: effects on health and mortality." *Cureus* 9.1 (2017).

⁵² Bergin, Adele, and Kenneth Pakenham. "Law student stress: Relationships between academic demands, social isolation, career pressure, study/life imbalance and adjustment outcomes in law students." *Psychiatry, Psychology and Law* 22.3 (2015): 388-406.

⁵³ Shevlin, Mark, Siobhan Murphy, and Jamie Murphy. "Adolescent loneliness and psychiatric morbidity in the general population: identifying "at risk" groups using latent class analysis." *Nordic Journal of Psychiatry* 68.8 (2014): 633-639.

⁵⁴ Bergin, Adele, and Kenneth Pakenham. "Law student stress: Relationships between academic demands, social isolation, career pressure, study/life imbalance and adjustment outcomes in law students." *Psychiatry, Psychology and Law* 22.3 (2015): 388-406.

⁵⁵ Bunker, Stephen J., et al. ""Stress" and coronary heart disease: psychosocial risk factors." Medical Journal of Australia 178.6 (2003): 272-276.

⁵⁶ Harrison, Virginia, Michelle L. Moulds, and Katie Jones. "Perceived social support and prenatal wellbeing; The mediating effects of loneliness and repetitive negative thinking on anxiety and depression during the COVID-19 pandemic." *Women and Birth* (2021).

⁵⁷ Barger, Steven D., Nadine Messerli-Bürgy, and Jürgen Barth. "Social relationship correlates of major depressive disorder and depressive symptoms in Switzerland: nationally representative cross sectional study." *BMC public health* 14.1 (2014): 1-10.

⁵⁸ Bhatti, Adnan Bashir, and Anwar ul Haq. "The pathophysiology of perceived social isolation: effects on health and mortality." *Cureus* 9.1 (2017).

⁵⁹ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

- e. Moderate-to-severe anxiety.60 61
- f. Depressive cognition (particularly among older adults).⁶²
- g. Heightened sensitivity to social threats.63
- h. Repetitive negative thinking. 64 65
- 5. Cognitive issues
 - a. Poorer overall cognitive performance.⁶⁶
 - b. Faster cognitive decline. 67 68
 - c. Poorer executive functioning.⁶⁹
- 6. Misuse of psychotropic medications. 70

B. Physical Health

1. Increased risk of coronary heart disease^{71 72} and cardiovascular disease.⁷³

⁶⁰ Bergin, Adele, and Kenneth Pakenham. "Law student stress: Relationships between academic demands, social isolation, career pressure, study/life imbalance and adjustment outcomes in law students." *Psychiatry, Psychology and Law* 22.3 (2015): 388-406.

⁶¹ Harrison, Virginia, Michelle L. Moulds, and Katie Jones. "Perceived social support and prenatal wellbeing; The mediating effects of loneliness and repetitive negative thinking on anxiety and depression during the COVID-19 pandemic." *Women and Birth* (2021).

⁶² Cacioppo, John T., and Louise C. Hawkley. "Perceived social isolation and cognition." *Trends in cognitive sciences* 13.10 (2009): 447-454.

⁶³ Cacioppo, John T., and Louise C. Hawkley. "Perceived social isolation and cognition." *Trends in cognitive sciences* 13.10 (2009): 447-454.

⁶⁴ Harrison, Virginia, Michelle L. Moulds, and Katie Jones. "Perceived social support and prenatal wellbeing; The mediating effects of loneliness and repetitive negative thinking on anxiety and depression during the COVID-19 pandemic." *Women and Birth* (2021).

⁶⁵ Cacioppo, John T., and Louise C. Hawkley. "Perceived social isolation and cognition." *Trends in cognitive sciences* 13.10 (2009): 447-454.

⁶⁶ Cacioppo, John T., and Louise C. Hawkley. "Perceived social isolation and cognition." *Trends in cognitive sciences* 13.10 (2009): 447-454.

⁶⁷ Cacioppo, John T., and Louise C. Hawkley. "Perceived social isolation and cognition." *Trends in cognitive sciences* 13.10 (2009): 447-454.

⁶⁸ Bhatti, Adnan Bashir, and Anwar ul Haq. "The pathophysiology of perceived social isolation: effects on health and mortality." *Cureus* 9.1 (2017).

⁶⁹ Cacioppo, John T., and Louise C. Hawkley. "Perceived social isolation and cognition." *Trends in cognitive sciences* 13.10 (2009): 447-454.

⁷⁰ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

⁷¹ Bunker, Stephen J., et al. ""Stress" and coronary heart disease: psychosocial risk factors." Medical Journal of Australia 178.6 (2003): 272-276.

⁷² Valtorta, Nicole K., et al. "Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies." *Heart* 102.13 (2016): 1009-1016.

⁷³ Shankar, Aparna, et al. "Loneliness, social isolation, and behavioral and biological health indicators in older adults." *Health Psychology* 30.4 (2011): 377.

- 2. Poorer overall physical health. 74 75 76 77
- 3. Increased risk of mortality (overall). 78 79 80 81 82 83 84 85
- 4. Elevated risk of musculoskeletal disorders. 86
- 5. More unhealthy behavior (physical inactivity, poor diet, and misuse of psychotropic medications). 87
- 6. Higher levels of physical stress. 88
- 7. Increased risk of stroke. 89

⁷⁴ Miyawaki, Christina E. "Association of social isolation and health across different racial and ethnic groups of older Americans." *Ageing and society* 35.10 (2015): 2201.

⁷⁵ Coyle, Caitlin E., and Elizabeth Dugan. "Social isolation, loneliness and health among older adults." *Journal of aging and health* 24.8 (2012): 1346-1363.

⁷⁶ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

⁷⁷ Cornwell, Erin York, and Linda J. Waite. "Measuring social isolation among older adults using multiple indicators from the NSHAP study." *Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 64.suppl_1 (2009): i38-i46.

⁷⁸ House, James S., Karl R. Landis, and Debra Umberson. "Social relationships and health." *Science* 241.4865 (1988): 540-545.

⁷⁹ Holt-Lunstad, Julianne, Timothy B. Smith, and J. Bradley Layton. "Social relationships and mortality risk: a meta-analytic review." *PLoS medicine* 7.7 (2010): e1000316.

⁸⁰ Perissinotto, Carla M., Irena Stijacic Cenzer, and Kenneth E. Covinsky. "Loneliness in older persons: a predictor of functional decline and death." *Archives of internal medicine* 172.14 (2012): 1078-1084.

⁸¹ Berkman, L. F., Melchior, M., Chastang, J. F., Niedhammer, I., Leclerc, A., and Goldberg, M. (2004). Social integration and mortality: a prospective study of French employees of Electricity of France–Gas of France: the GAZEL Cohort. *American journal of epidemiology*, 159(2), 167-174.

⁸² Rico-Uribe, Laura Alejandra, et al. "Association of loneliness with all-cause mortality: A meta-analysis." *PloS one* 13.1 (2018): e0190033.

⁸³ Luo, Ye, et al. "Loneliness, health, and mortality in old age: A national longitudinal study." *Social science and medicine* 74.6 (2012): 907-914.

⁸⁴ Barger, Steven D. "Social integration, social support and mortality in the US National Health Interview Survey." *Psychosomatic Medicine* 75.5 (2013): 510-517.

⁸⁵ Kreibig, Sylvia D., Mary A. Whooley, and James J. Gross. "Social integration and mortality in patients with coronary heart disease: findings from the Heart and Soul Study." *Psychosomatic medicine* 76.8 (2014): 659.

⁸⁶ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

⁸⁷ Hämmig, Oliver. "Health risks associated with social isolation in general and in young, middle and old age." *PLoS One* 14.7 (2019): e0219663.

⁸⁸ Steptoe, Andrew, et al. "Loneliness and neuroendocrine, cardiovascular, and inflammatory stress responses in middle-aged men and women." *Psychoneuroendocrinology* 29.5 (2004): 593-611.

⁸⁹ Valtorta, Nicole K., et al. "Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies." *Heart* 102.13 (2016): 1009-1016.

V. THERAPEUTIC AND PHARMACEUTICAL SOLUTIONS

A. Reminiscence Therapy

- 1. "Reminiscence therapy is a nonpharmacological intervention that improves selfesteem and provides older patients with a sense of fulfillment and comfort as they look back at their lives."
 - "Although reminiscing involves recalling past events, it encourages older patients to communicate and interact with a listener in the present. Reminiscence sessions may be formal, informal, one-on-one, or in a group setting." 90
- 2. Reduces social isolation and depression among older adults, especially in urban settings. In a study of several therapies, only group-based reminiscence therapy reduced both social isolation and depression in older people in an urban care setting."⁹¹

B. Care Farming

- 1. Care farming involves using farms and/or agricultural locations/landscapes to promote improvements in mental and physical health. ⁹² "Clients participate in various horticultural activities, including crop and vegetable production, animal husbandry, and woodland management. As a result, they learn useful skills within a safe community and a green environment, a setting shown to improve mental and social well-being."
- 2. Quite popular in Europe and evidence suggests it reduces levels of loneliness.
 - a. In 2005, 10,000 mental health clients visited almost 800 care farms in the Netherlands alone. Similar programs remain popular across Europe.⁹⁴
 - A study of how care farming impacts perceived loneliness, life satisfaction, and optimism of veterans found that some participants had decreased/decreasing levels of loneliness after participating.⁹⁵

C. Supportive-Expressive Group Psychotherapy

1. "The supportive-expressive therapy model involves the creation of a supportive environment in which participants are encouraged to confront their problems, strengthen their relationships, and find enhanced meaning in their lives. A

⁹⁰ Klever, Sandy. "Reminiscence therapy: Finding meaning in memories." *Nursing2020* 43.4 (2013): 36-37.

⁹¹ Franck, Linél, Natalie Molyneux, and Lynne Parkinson. "Systematic review of interventions addressing social isolation and depression in aged care clients." *Quality of Life Research* 25.6 (2016): 1395-1407.

⁹² Hassink, Jan, and Majken Van Dijk, eds. *Farming for Health: Green-care farming across Europe and the United States of America*. Vol. 13. Springer Science and Business Media, 2006.

⁹³ Hine, Rachel, Jo Peacock, and Jules Pretty. "Care farming in the UK: contexts, benefits and links with therapeutic communities." *Therapeutic communities* 29.3 (2008): 245-260.

⁹⁴ Hassink, Jan, et al. "Current status and potential of care farms in the Netherlands." *NJAS-Wageningen Journal of Life Sciences* 55.1 (2007): 21-36.

⁹⁵ Greenleaf, Arie T., and Kevin M. Roessger. "Effectiveness of care farming on veterans' life satisfaction, optimism, and perceived loneliness." *The Journal of Humanistic Counseling* 56.2 (2017): 86-110.

- major purpose of the therapy sessions is to create a close-knit group that can serve to counter feelings of isolation and enhance social support."⁹⁶
- 2. Increases social support and enhances relationships with family and physicians among cancer patients, thus increasing their survival time. For example, the National Cancer Institute used supportive-expressive group psychotherapy to help patients with breast cancer address their potentially end-of-life concerns and manage their emotions. It found this therapy improved cancer survival rates among participants.⁹⁷

D. Social Skills Group Interventions

- 1. For children with high-functioning autism, this therapy "...is designed to improve social behaviors in children with high functioning autism spectrum disorders (HFASDs) by building basic behavioral and cognitive social skills, reinforcing prosocial attitudes and behaviors, and building adaptive coping strategies for social problems, such as teasing or isolation." 98 99

 For children who have immature social skills relative to peers, are being rejected and teased by peers, or are socially anxious and awkward with peers, this therapy "...is intended to improve children's peer relations by building basic behavioral and cognitive social skills, reinforcing prosocial attitudes and behaviors, and building adaptive coping strategies for social problems, such as teasing and isolation." 100
- 2. Children with high-spectrum autism experienced social skill improvement, which helped them be socially integrated (and thus not socially isolated). Parents also experienced improvements in their ability to help their children resolve social issues.¹⁰¹

https://web.archive.org/web/20180625175435/https:/nrepp.samhsa.gov/Legacy/ViewIntervention.aspx?id =217

⁹⁶ https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=297250

⁹⁷ https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=297250

⁹⁸ https://web.archive.org/https://nrepp.samhsa.gov/Legacy/ViewIntervention.aspx?id=268

⁹⁹ DeRosier, Melissa E., et al. "The efficacy of a social skills group intervention for improving social behaviors in children with high functioning autism spectrum disorders." *Journal of autism and developmental disorders* 41.8 (2011): 1033-1043.

¹⁰¹ DeRosier, Melissa E., et al. "The efficacy of a social skills group intervention for improving social behaviors in children with high functioning autism spectrum disorders." *Journal of autism and developmental disorders* 41.8 (2011): 1033-1043.

Children with immature social skills or who are rejected/teased/experiencing social anxiety experience improved social integration with their peers. 102 103 104

E. Existing Program--The Youth-Nominated Support Team (YST)

- 1. "A psychoeducational, social support intervention for adolescents hospitalized in a psychiatric unit who have recently reported a suicide attempt or serious thoughts about killing him- or herself. In this program, adolescents nominate several 'caring adults'...serve as support persons for them after hospitalization. These adults attend a psychoeducational session to learn about the youth's problem list and treatment plan, suicide warning signs, communicating with adolescents, and how to be helpful in supporting treatment adherence and positive behavioral choices. The adults have regular contact with the youth, with YST staff support, over the three-month duration of the program. The adults also receive weekly supportive telephone calls from YST staff during this three-month period." 105
- 2. Reduced the all-cause mortality rate from 6% in the control group to 1% in the program group, as measured 11 to 14 years after study entry. 106 107

VI. PROFESSIONAL CARE SOLUTIONS

- A. At-Home Care and Specialized Services
 - 1. Specialized services may include meal delivery, social services, and medical screenings/assessments.
 - 2. The American Academy of Pediatrics recommends continued medical and mental health services for children with special needs as well as at-home assessments of LGBTQ* youth in a confidential manner. Further, at-home care and specialized services will benefit the elderly.
 - a. <u>Uninterrupted access to medical/mental health services for children with special needs</u>: "Children and youth with special health care needs depend on uninterrupted access to specialized medical and/or mental health services...It is important for the pediatrician to inquire about continued

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¹⁰³ DeRosier, Melissa E., et al. "The efficacy of a social skills group intervention for improving social behaviors in children with high functioning autism spectrum disorders." *Journal of autism and developmental disorders* 41.8 (2011): 1033-1043.

https://evidencebasedprograms.org/programs/youth-nominated-support-team-version-ii-program-to-prevent-adolescent-suicide/

 $[\]frac{106}{\text{https://evidencebasedprograms.org/programs/youth-nominated-support-team-version-ii-program-to-prevent-adolescent-suicide/}$

¹⁰⁷ https://evidencebasedprograms.org/programs/youth-nominated-support-team-version-ii-program-to-prevent-adolescent-suicide/

- access to these services, to support families experiencing an interruption of services, and to advocate for continued services." ¹⁰⁸
- b. <u>Assessing at-home LGBTQ* youth in a confidential manner</u>: "LGBTQ* youth may experience greater stress during the pandemic if they are living in homes where they are not supported by their families...These youth may be subjected to increased physical or emotional maltreatment from a family member and not have a means to escape it. Therefore, assessing the home situation of LGBTQ youth in a confidential manner is of particular importance at this time."
- c. <u>Specialized services for the elderly</u>: "Old, frail, and reclusive people who live alone may require home care and specialized services such as meal delivery or social visits. In these cases, care workers should understand that they likely serve as a vital source of interaction...[Care workers] should be trained to recognize when an isolated person is in danger and no longer able to live alone, and how to connect that person to appropriate sources of support."¹¹⁰

B. Education for Health Care Providers

- 1. Require that health care providers for LGBTQ* persons and the elderly be educated on existing legal provisions to prevent discrimination in end-of-life care. 111
- 2. In a study of the end-of-life issues facing LGBTQ* persons, participants reported "barriers to health care service access due to discrimination, inappropriate care and lack of knowledge among both consumers and health care workers of legal rights at the end of life." 112

VII. PERSONAL AND INTER-SOCIAL SOLUTIONS

A. Health Care Provider Warnings and Advice

1. Health care providers can prevent social isolation and its effects by warning patients of isolation's dangers and providing advice and referrals to programs that can address social isolation among children and adults.

¹⁰⁸ American Academy of Pediatrics. *Interim Guidance on Supporting the Emotional and Behavioral Health Needs of Children, Adolescents, and Families During the COVID-19 Pandemic.* (n.d.). Retrieved April 8, 2021, from <a href="http://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/interim-guidance-on-supporting-the-emotional-and-behavioral-health-needs-of-children-adolescents-and-families-during-the-covid-19-pandemic/

American Academy of Pediatrics. *Interim Guidance on Supporting the Emotional and Behavioral Health Needs of Children, Adolescents, and Families During the COVID-19 Pandemic.* (n.d.). Retrieved April 8, 2021, from http://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/interim-guidance-on-supporting-the-emotional-and-behavioral-health-needs-of-children-adolescents-and-families-during-the-covid-19-pandemic/

¹¹⁰ Klinenberg, Eric. "Social isolation, loneliness, and living alone: identifying the risks for public health." *American journal of public health* 106.5 (2016): 786.

¹¹¹ Cartwright, Colleen, Mark Hughes, and Tania Lienert. "End-of-life care for gay, lesbian, bisexual and transgender people." *Culture, health and sexuality* 14.5 (2012): 537-548.

¹¹² Cartwright, Colleen, Mark Hughes, and Tania Lienert. "End-of-life care for gay, lesbian, bisexual and transgender people." *Culture, health and sexuality* 14.5 (2012): 537-548.

- 2. Warnings, advice, and referrals from health care providers can prevent social isolation among older adults and preempt the familial issues that follow from social isolation, especially during the pandemic.
 - a. "For relatively healthy people at risk for isolation, such as widows and widowers, older single men, and older single lesbian, gay, bisexual, and transgender people who live alone, a warning about the danger of isolation and simple encouragement to be socially active may help promote social interaction." 113
 - b. "There are many households in which caregivers may not have the ability to stay home to support their child's remote learning needs, adding stress around finding child care or other support. Where possible, referrals to early childhood educational settings such as Early Head Start and Head Start should be recommended."¹¹⁴
 - c. "Checking in with parents/caregivers regarding their own emotional reactions to the pandemic, the effects of unemployment and economic stressors, availability of their own social support networks, and their awareness of the implications of parental well-being on the family are critical. Parents may be struggling to balance taking care of their own, possibly elderly, parents along with working and caring for their own children."
 - i. Providing resources on adult mental health may be helpful. 116
 - ii. Providing resources on adult substance abuse can be beneficial. 117
 - d. Pediatricians can best support parents during the pandemic by offering empathy and recommending that parents/caregivers take time to practice self-care and mindfulness.¹¹⁸

¹¹³ Klinenberg, Eric. "Social isolation, loneliness, and living alone: identifying the risks for public health." *American journal of public health* 106.5 (2016): 786.

¹¹⁴ American Academy of Pediatrics. *Interim Guidance on Supporting the Emotional and Behavioral Health Needs of Children, Adolescents, and Families During the COVID-19 Pandemic.* (n.d.). Retrieved April 8, 2021, from http://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/interim-guidance-on-supporting-the-emotional-and-behavioral-health-needs-of-children-adolescents-and-families-during-the-covid-19-pandemic/

¹¹⁵ American Academy of Pediatrics. *Interim Guidance on Supporting the Emotional and Behavioral Health Needs of Children, Adolescents, and Families During the COVID-19 Pandemic.* (n.d.). Retrieved April 8, 2021, from http://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/interim-guidance-on-supporting-the-emotional-and-behavioral-health-needs-of-children-adolescents-and-families-during-the-covid-19-pandemic/

¹¹⁶ NIMH » *Help for Mental Illnesses*. (n.d.). Retrieved April 7, 2021, from https://www.nimh.nih.gov/health/find-help/index.shtml

¹¹⁷ American Academy of Pediatrics. *Interim Guidance on Supporting the Emotional and Behavioral Health Needs of Children, Adolescents, and Families During the COVID-19 Pandemic.* (n.d.). Retrieved April 8, 2021, from http://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/interim-guidance-on-supporting-the-emotional-and-behavioral-health-needs-of-children-adolescents-and-families-during-the-covid-19-pandemic/

¹¹⁸ American Academy of Pediatrics. "Addressing Family Mental Health Needs During the COVID-19 Pandemic." https://www.youtube.com/watch?v=AveruiV4vbg

B. Informal Social Support from Family and Friends

- "Contacts with adult children, siblings, friends, and neighbors showed a stronger negative relationship with loneliness in unmarried than in married adults. However, divorced and widowed adults were more likely to profit from contact with adult children, whereas never-married and childless unmarried respondents profited most from contacts with siblings, friends, and neighbors."¹¹⁹
- 2. "Informal social support is often sought by veterans to support reminiscence or cope with traumatic memories." "Peer support was considered suitable, particularly in addressing loneliness and social isolation." 120
- 3. Among first-generation Latino/a college students, "family social support is negatively associated with stress and depression, social support from friends is negatively associated with social isolation, and family social support is a moderator of stress and depression." 121
- 4. Among graduate and professional health science students, "The ability to discuss feelings with friends in their professional program and experiencing "non-lonely" items were negatively associated with social isolation." 122
- 5. Among older parents, family support improved subjective well-being and mental health.¹²³

C. Formal Group Activities

1. Group activities organized by a larger institution for members of a group to meet and interact through participation in said activities.

- 2. "Those who suffer from isolation and loneliness are vulnerable to a vicious cycle that leads to social withdrawal, and they would likely benefit from psychological care as well as social activity." 124
 - a. "Formal group activities and outings for enjoyment were positively associated with better self-rated health for veterans, non-veterans and all veteran cohorts." 125

¹¹⁹ Pinquart, Martin. "Loneliness in married, widowed, divorced, and never-married older adults." *Journal of Social and personal relationships* 20.1 (2003): 31-53.

¹²⁰ Burnell, Karen, Adrian Needs, and Kim Gordon. "Exploring the suitability and acceptability of peer support for older veterans." *Quality in Ageing and Older Adults* (2017).

¹²¹ Suwinyattichaiporn, Tara, and Zac D. Johnson. "The Impact of Family and Friends Social Support on Latino/a First-Generation College Students' Perceived Stress, Depression, and Social Isolation." *Journal of Hispanic Higher Education* (2020): 1538192720964922.

¹²² Ray, Mary Elizabeth, et al. "Quantitative and qualitative factors associated with social isolation among graduate and professional health science students." *American journal of pharmaceutical education* 83.7 (2019).

¹²³ Chen, Yu, Allan Hicks, and Alison E. While. "Loneliness and social support of older people in China: a systematic literature review." *Health and social care in the community* 22.2 (2014): 113-123.

¹²⁴ Klinenberg, Eric. "Social isolation, loneliness, and living alone: identifying the risks for public health." *American journal of public health* 106.5 (2016): 786.

¹²⁵ Choi, Namkee G., Diana M. DiNitto, and C. Nathan Marti. "Social participation and self-rated health among older male veterans and non-veterans." *Geriatrics and gerontology international* 16.8 (2016): 920-927.

b. "Occupational therapists can address social isolation in...urban communities through policy and practice that facilitate social engagement and network building." 126

D. Existing Program—Activity Programs for Older Adults

- "...[O]ffer educational, social, creative, musical, or physical activities in group settings that encourage personal interactions, regular attendance, and community involvement. Activity programs are a potential means to reduce social isolation; isolation among older adults is associated with poorer health outcomes."¹²⁷
- 2. Strong evidence that such programs for older adults result in better physical/mental outcomes and reduced social isolation. 128
- E. Existing Program—Recreation, Education, and Socialization for Older Learning Veterans (RESOLV).
 - A telephone-based program that connects U.S. veterans via telephone to avoid social isolation. "The program was developed through a collaboration between [Veterans Administration] and a community-based organization, Episcopal Senior Communities Senior Center Without Walls." 129
 - 2. "[T]he programme is freely available to all older veterans with a telephone line. The programme allows veterans to connect to age-matched contemporaries, or connect with intergenerational veterans. The programme was feasible and suitable for rural and non-rural veterans."

F. Existing Program—Beyond Differences

- "[C]reated to reduce social isolation and support connectedness in schools, particularly middle schools...The organization trains middle and high school students to lead social change through a collection of youth-led efforts, including assemblies, curriculum, and leadership training for middle school students, as well as larger national campaigns to raise awareness and catalyze social change."131
- 2. The organization has three national programs:
 - a. <u>Know Your Classmates</u> is "...designed to explore middle school youth's identity and belonging, understand traditions, and recognize stereotypes.

¹²⁶ Hand, Carri, et al. "Understanding social isolation among urban aging adults: informing occupation-based approaches." *OTJR: occupation, participation and health* 37.4 (2017): 188-198.

¹²⁷ https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/activity-programs-for-older-adults

https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/activity-programs-for-older-adults

¹²⁹ Gould, Christine E., et al. "RESOLV: development of a telephone-based program designed to increase socialization in older veterans." *Educational Gerontology* 43.8 (2017): 379-392.

¹³⁰ Gould, Christine E., et al. "RESOLV: development of a telephone-based program designed to increase socialization in older veterans." *Educational Gerontology* 43.8 (2017): 379-392.

¹³¹ London, Rebecca, and Dabney Ingram. "Social isolation in middle school." *School Community Journal* 28.1 (2018): 107-127.

- Multi-cultural and multi-faith backgrounds are common in today's schools and Know Your Classmates is speaking honestly with children about their feelings and experiences with one another."
- b. No One Eats Alone "...teaches everyone how to make friends at lunch, often the most difficult part of the school day. Created and organized by students, this is our most popular program where schools in all 50 United States participate!"
- c. <u>Be Kind Online</u> is "...a powerful engagement program for middle school youth, their teachers and families. Focused on creating inclusive communities online, particularly learning to respond to digital gossip to reduce social isolation" ¹³²

VIII. COMMUNITY, GOVERNMENTAL, AND STRUCTURAL SOLUTIONS

- A. Neighborhood Revitalization and Investment "People who are aging alone in impoverished areas with degraded social infrastructure would benefit from neighborhood revitalization, but that would require considerable investment from the public and private sectors, and there is little reason to think either will come through soon." 133
- B. Age-Prepared Communities utilize community planning and advocacy to foster aging in place. 'Elder friendly communities' are places that actively involve, value, and support older adults, both active and frail, with infrastructure and services that effectively accommodate their changing needs." The most important characteristics of elder-friendly communities: accessible and affordable transportation, housing, health care, safety, and community involvement opportunities. 134
- C. Expanded Civic Engagement Programs A study intended to explore whether volunteering improves outcomes among returning military veterans found that, "[s]elf-reported social isolation was significantly reduced following volunteer program completion." 135 136

¹³³ Klinenberg, Eric. "Social isolation, loneliness, and living alone: identifying the risks for public health." *American journal of public health* 106.5 (2016): 786.

¹³² https://www.beyonddifferences.org/about/

¹³⁴ Alley, Dawn, et al. "Creating elder-friendly communities: Preparations for an aging society." *Journal of Gerontological Social Work* 49.1-2 (2007): 1-18.

¹³⁵ Matthieu, Monica M., Karen A. Lawrence, and Emma Robertson-Blackmore. "The impact of a civic service program on biopsychosocial outcomes of post 9/11 US military veterans." *Psychiatry research* 248 (2017): 111-116.

¹³⁶ Matthieu, Monica M., Karen A. Lawrence, and Emma Robertson-Blackmore. "The impact of a civic service program on biopsychosocial outcomes of post 9/11 US military veterans." *Psychiatry research* 248 (2017): 111-116.

D. Existing Program—Senior Reach is "...a service-based intervention targeting older adults experiencing problematic mental and emotional states, personality and physical changes, poor health, social isolation, substance abuse, physical abuse or neglect, and risk factors for suicide." ¹³⁷

F. Existing Program—Community Connectors.

- 1. "Community Connectors enables middle-aged and older adults to engage with social activities in their community, and thus helps participants to feel less lonely and more socially connected." ¹³⁸
- 2. Programs:
 - a. <u>One-to-One, Person Centered Support</u> works with older persons/caregivers to create a tailored lifestyle management plan.
 - b. <u>Buddy Support</u> arranges for a volunteer 'buddy' to go with older adult to groups/activities until they are settled in/comfortable.
 - c. <u>Signposting and Information</u> provides information on local activities, services, and groups to suit an older adult's individual needs.
 - d. <u>Volunteer Opportunities</u> provides information on volunteering opportunities in the local area for older adults.¹³⁹

G. Existing Program—Little Brothers Friends of the Elderly

- 1. "At all of our locations, we strive to meet the emotional and physical needs of our elderly friends...This isolation is compounded by poverty. In these difficult situations we extend a helping hand."
- 2. "We treat our elderly friends as individuals, offering them the gifts of respect and love by visiting, socializing, and providing programs that combat loneliness and promote independent living, helping them remain in their own homes."
- 3. "As a volunteer-based organization, we rely on people of good will to join us in our efforts. All of our services are free to the elderly and are designed to relieve the isolation and loneliness that can produce emotional pain and mental and physical deterioration." ¹⁴⁰

¹³⁷ https://web.archive.org/web/2/https://nrepp.samhsa.gov/Legacy/ViewIntervention.aspx?id=330solation %2F%E2%80%AF%20https:%2Fweb.archive.org%2Fhttps:%2Fnrepp.samhsa.gov%2FLegacy%2FViewIntervention.aspx%3Fid=330

¹³⁸ Giebel, Clarissa, et al. "Enabling middle-aged and older adults accessing community services to reduce social isolation: Community Connectors." *Health and Social Care in the Community* (2020). ¹³⁹ http://www.communityconnectors.org/

¹⁴⁰ Little Brothers Friends of the Elderly National Portal | Little Brothers Friends of the Elderly." https://littlebrothers.org/ (February 22, 2021).

- H. Expanded Rural and Urban Access "Policymakers can fight social isolation by reducing poverty, improving public transportation, and installing rural broadband to address information access issues." ¹⁴¹
 - Rural: Individuals in poor health in rural areas have fewer health and social resources.¹⁴² "Internet connectivity has become necessary for socialization, remote learning, employment, and access to health care and must also be included in the evaluation of social determinants of health."¹⁴³
 - 2. Urban: Among aging adults in diverse urban neighborhoods, "[p]articipants (N = 161) reported social isolation in terms of small social networks (24%) and wanting more social engagement (43%)...Low income, poor health, lack of transportation, and infrequent information access appeared linked to social isolation."

¹⁴¹ Hand, Carri, et al. "Understanding social isolation among urban aging adults: informing occupation-based approaches." *OTJR: occupation, participation and health* 37.4 (2017): 188-198.

¹⁴² Burholt, Vanessa, and Thomas Scharf. "Poor health and loneliness in later life: the role of depressive symptoms, social resources, and rural environments." *Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 69.2 (2014): 311-324.

¹⁴³ American Academy of Pediatrics. *Interim Guidance on Supporting the Emotional and Behavioral Health Needs of Children, Adolescents, and Families During the COVID-19 Pandemic*. (n.d.). Retrieved April 8, 2021, from http://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/interim-guidance-on-supporting-the-emotional-and-behavioral-health-needs-of-children-adolescents-and-families-during-the-covid-19-pandemic/

¹⁴⁴ Hand, Carri, et al. "Understanding social isolation among urban aging adults: informing occupation-based approaches." *OTJR: occupation, participation and health* 37.4 (2017): 188-198.