Article

Understanding Social Isolation Among Urban Aging Adults: Informing Occupation-Based Approaches

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Abstract

Socially isolated aging adults are at risk of poor health and well-being. Occupational therapy can help address this issue; however, information is needed to guide such work. National surveys characterize social isolation in populations of aging adults but fail to provide meaningful information at a community level. The objective of this study is to describe multiple dimensions of social isolation and related factors among aging adults in diverse urban neighborhoods. Community-based participatory research involving a door-to-door survey of adults 50 years and older was used. Participants (N = 161) reported social isolation in terms of small social networks (24%) and wanting more social engagement (43%). Participants aged 50 to 64 years reported the highest levels of isolation in most dimensions. Low income, poor health, lack of transportation, and infrequent information access appeared linked to social isolation. Occupational therapists can address social isolation in similar urban communities through policy and practice that facilitate social engagement and network building.

Keywords

aging, health promotion, social participation, survey

Introduction

Later life is often a time of change in roles, abilities, and physical and social environments. Social isolation can be part of this stage of life, an experience that negatively affects health and well-being. Risk factors for social isolation include functional disability (Mendes de Leon, Glass, & Berkman, 2003), depression (Iliffe et al., 2007), vision or hearing impairment, and poor general health, as well as death of a spouse, relatives, or friends (Wenger & Burholt, 2004). Occupational therapists can play a key role in preventing and reducing social isolation. Research has shown that participation in work, volunteer, physical, leisure, and social activities has health-promoting effects for older adults, including physical, psychological, and social impacts (Stav, Hallenen, Lane, & Arbesman, 2012). Occupational therapists can work with clients, considering impairments and barriers, to enable meaningful occupational engagement, promote health, and decrease isolation. To carry out this work with individuals and groups most effectively, more detailed information about experiences of social isolation among aging adults is needed. Information regarding social isolation in aging adults typically comes from nationally representative surveys. Such studies often fail to examine key aspects of the experience of social isolation that could guide strategies at the community level, including occupation-informed policy and occupational therapy practice. The purpose of this article is to describe social isolation and factors related to this experience in urban aging adults in a metropolitan area, to inform occupation-based services, policy, neighborhood change and future research.

Social isolation is estimated to affect 10% to 20% of adults over age 65 (Dickens, Richards, Greaves, & Campbell, 2011; Iliffe et al., 2007; Theeke, 2009). Older adults who are socially isolated are more likely to experience poor physical and mental health (Lee, Jang, Lee, Cho, & Park, 2008; Litwin & Shiovitz-Ezra, 2011; McLaughlin, Vagenas, Pachana, Begum, & Dobson, 2010), including conditions such as depression, dementia, and suicide risk (Shankar, McMunn, Banks, & Steptoe, 2011; Tomaka, Thompson, & Palacios, 2006). Social isolation is also associated with increased risk of hospitalization (Mistry, Rosansky, McGuire, McDermott, & Jarvik, 2001) and mortality (Holt-Lunstad, Smith, &

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Layton, 2010; Luo, Hawkley, Waite, & Cacioppo, 2012) and is a risk for poor health that is comparable in magnitude with other risk factors such as smoking and high blood pressure (Pantell et al., 2013).

Social isolation has been defined as diminished social connectedness in terms of the quality, type, frequency, and emotional satisfaction of social ties (Elder & Retrum, 2012). Definitions also include "a state in which the individual lacks a sense of belonging socially, lacks engagement with others, has a minimal number of social contacts and they are deficient in fulfilling and quality relationships" (Nicholson, 2009, p. 1346). Key aspects of social isolation/lack of social connectedness appear to be size and quality of social network, feelings of loneliness, and extent and quality of social participation (Elder & Retrum; Nicholson). This understanding of social isolation as involving multiple dimensions builds on traditional conceptualizations, which consider both objective social isolation (the experience of being alone) and the subjective experience (loneliness; Hawkley, 2015; Peplau & Perlman, 1982). In particular, considering occupational aspects of social isolation, specifically social participation and engagement, provides a more comprehensive perspective of social isolation and potentially enhanced ability to address it.

Efforts to understand and address social isolation through occupation-informed strategies align well with government priorities. Healthy People 2020, a U.S.-based federal framework of public health priorities (U.S. Department of Health and Human Services, 2017), articulates a need to address physical, mental, social, and environmental aspects of health and well-being. Priorities focus on social determinants of health, including creating health-promoting social and physical environments; improving the health, function, and quality of life of older adults; and addressing disability and health, all of which are implicated in addressing social isolation in older adults. Occupational therapists can play a key role within public health through health promotion strategies to decrease social isolation and improve overall health in aging adults. Occupational therapy intersects with health promotion in key ways, including sharing a holistic approach, a focus on the environment, and an ecological approach to enabling change (Tucker, Vanderloo, Irwin, Mandich, & Bossers, 2014). Bringing an occupational lens to public health and health promotion means focusing on promoting and enabling communities to have full and varied occupational lives (Scaffa, Van Slyke, & Brownson, 2008), adding an important dimension to the conception of healthy living within public health (Moll, Gewurtz, Krupa, & Law, 2013). Including an explicit focus on reducing social isolation within such community-level work can be an important complement to individual-focused efforts to reduce isolation.

Much of the data regarding social isolation in aging adults is from surveys of large, nationally representative samples that focus on ages 65 and more. While this information can characterize a population, experiences of social isolation can vary within population subgroups. Little research has been conducted on such subgroups, and more information is needed to fully understand social isolation and inform service and policy development (Courtin & Knapp, 2017; Klinenberg, 2016). Moreover, experiences of social isolation are intimately connected to an individual's context, including his or her social, built, and cultural environments. Population-based surveys do not provide information about specific subgroups in specific locations, further indicating a need for local studies. Some investigations have, in fact, focused on social isolation within smaller geographic areas such as Cook County Illinois (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Hawkley, Thisted, Masi, & Cacioppo, 2010), Iowa (Long & Martin, 2000), Chicago (Buchman et al., 2010), northern Georgia (Margrett et al., 2011), northeast England (Brittain et al., 2017), and Bergen, Norway (Bondevik & Skogstad, 2000). This previous research is limited in that studies have typically assessed a single aspect of social isolation, exploring only part of this multidimensional concept. Furthermore, most research in this area has been conducted with older adults who are ambulatory and able to attend community programs (Sabir et al., 2009) or attend multicomponent assessments (Buchman et al., 2010; Cacioppo et al., 2006; Hawkley et al., 2010), potentially missing older adults who are at higher risk of social isolation. Research exploring multiple aspects of social isolation at local levels has the potential to provide locally applicable information that can also be compared with other localities and with national statistics to form a fuller understanding of social isolation.

Alongside exploring social isolation as it varies regionally, exploring the factors within an individual's context that may influence social isolation can improve understanding and strategies to decrease it. Several factors are related to social isolation, including income, living situation, transportation, and health (e.g., Nicholson, 2012). These factors are also related to participation in occupations in older adults (e.g., Hand, Law, Hanna, McColl, & Elliott, 2012); knowledge of how they present in local populations can be useful within strategies to enhance occupational engagement and decrease social isolation. Age is also related to social isolation, as loneliness appears to increase with age (Bondevik & Skogstad, 2000). Most studies, however, examine adults 65 years and older, and do not examine the younger range of "older adults," such as those 50 years and older. Access to information about a range of topics, from social activity programs and transportation to services and local events, appears to be another part of isolation (Blaschke, Freddolino, & Mullen, 2009). Few studies, however, have explored how socially isolated aging adults access information. These studies suggest that isolated aging adults access certain types of media less frequently than non-isolated individuals; approximately 17% of home-bound older adults living with low income are Internet users (Choi & DiNitto, 2013), while 58% of older adults in the general population use the Internet (Pew Research Center, 2015). There is

a gap in knowledge regarding how socially isolated aging adults access information; having a clear understanding of this issue is critical to providing services and communicating information about services, activities, and events that can decrease social isolation.

The potentially large numbers of aging adults who experience social isolation, the negative health consequences associated with this experience, and an understanding of social isolation as encompassing occupational dimensions and interconnected with local, environmental features point to a need to better understand social isolation among aging adults. We are members of Taking Neighborhood Health to Heart (TNH2H, www.tnh2h.org), a community-based participatory research (CBPR) collective that sought to understand social isolation in socioeconomically, racially, and ethnically diverse neighborhoods in metropolitan Denver, Colorado. There are gaps in knowledge regarding social isolation in urban aging adults, including a multidimensional understanding of social isolation and presence of factors related to social isolation, in particular variations between different age ranges within "older adults" and how aging adults access information. Such information can inform occupational therapy practice and occupation-informed policy and neighborhood change focusing specifically on social isolation in aging adults. Thus, the current study aimed to:

1. describe multiple dimensions of social isolation among aging adults living in socioeconomically, racially, and ethnically diverse urban neighborhoods, and
2. examine the presence of factors that may be associated with social isolation in this group, including age, income, living situation, transportation, health, and access of information.

Method

Overall Approach

As part of an ongoing CBPR collective, we used CBPR principles to inform our research to ensure relevance and benefit to the community, including a participatory process, equal contribution of community members and researchers, learning, and local community capacity development (Israel, Eng, Schulz, & Parker, 2005). Our work took place in two phases, starting with local community meetings to discuss social isolation and connectedness followed by collaboratively conducting a research study.

Phase 1: Community Meetings to Explore Isolation and Connectedness

Within regular meetings of TNH2H, a need to understand and address social isolation in seniors was raised by an older adult community resident and identified by the group as a priority. We subsequently established a Social Connectedness subcommittee of approximately 15 TNH2H members who were interested in the topic to begin to understand the questions and concerns related to social isolation in five contiguous neighborhoods in Northeast Denver and Northwest Aurora. The subcommittee was composed of academic researchers, representatives of community organizations and community residents. Its members included persons with expertise in occupational therapy, social work, and public health. Over the course of approximately 6 months, the subcommittee met several times to discuss research literature and personal understandings of how isolation is defined, how it is measured, who it affects, and its causes and consequences. For its first project, the subcommittee decided to examine the extent of social isolation in their communities. The subcommittee valued a multidimensional understanding of social isolation and sought to explore instances of social connection among aging adults. In turn, we identified a range of validated measures that resonated with those understandings that addressed social network, loneliness, and social engagement (Hughes, Waite, Hawkley, & Cacioppo, 2004; Lubben et al., 2006; National Center for Health Statistics, 2002; Nicholson, 2009).

Phase 2: Conducting the Study

The Social Connectedness subcommittee met several times over the course of 1 year to direct the study. The study funding was administered by community and academic partners, with the community holding the majority of the funds. Community members were involved in all decision making within the project, including developing the study purpose, designing the survey, collecting data, and interpreting data.

Study design. We conducted a cross-sectional survey of aging adults living in Northeast Denver and Northwest Aurora. To characterize the frequency of social isolation in the community, the group chose to implement a door-to-door survey method. This method had been used successfully by TNH2H to reach adults living in the same communities (Main et al., 2012). Ethical approval for the study was granted by the Colorado Multiple Institutional Review Board at the University of Colorado Denver (#06-0264). All participants provided informed consent to participate in the study.

Sample and sampling methods. We recruited community-dwelling adults age 50 years or more, reflecting our desire to survey both "typical" older adults, for example, adults aged 65 or more years, as well as those who would soon be this age and potentially at risk of social isolation, labeling this group "aging adults." We focused on five contiguous neighborhoods in Northeast Denver and Northwest Aurora that are the focus of TNH2H.Based on prior survey work (Main et al., 2012) and 2010 U.S. Census data, we identified blocks within the five neighborhoods that included higher proportions of adults

Table 1. Participant Characteristics.

Gender[a]	
Men	60 (37.5%)
Women	100 (62.5%)
Age[b]	
50-64	97 (61.4%)
65-74	34 (21.5%)
75+	27 (17.1%)
Hispanic	32 (19.9%)
Race/ethnicity (all that apply)	
White/Caucasian	87 (54.0%)
Black/African American	63 (39.1%)
American Indian/Alaska Native	12 (7.5%)
Asian	3 (1.8%)
Median annual income (US$)[c]	20,000-24,999
Income meets needs[a]	
Poorly	38 (23.8%)
Fairly well	78 (48.8%)
Very well	44 (27.5%)
Education	
Less than high school	36 (26.7%)
Highschool graduate/some college or technical school	72 (44.7%)
College degree or higher	53 (32.9%)
Married/partner[d]	63 (39.9%)
Lives alone[a]	54 (33.8%)
Able to get transportation to places you want to go	
Always or almost always	136 (84.5%)
Sometimes	16 (9.9%)
Not often	9 (5.6%)
Health	
Poor/fair	52 (32.3%)
Good	52 (32.3%)
Very good/excellent	57 (35.4%)

[a] $n = 160$.
[b] $n = 158$.
[c] $n = 135$.
[d] $n = 158$.

50 years and older, randomly selected 21 blocks, and created a list of all households in the blocks. The neighborhoods were demographically diverse. Across the five neighborhoods, the proportion of people over age 55 ranged from 9% to 28%, the proportion of African Americans ranged from 8% to 50%, people with a Latino background ranged from 9% to 62%, and people living in poverty ranged from 4% to 40% (Piton Foundation, n.d.; Supplementary Table 1).

Our sampling frame included 2,695 households within randomly sampled blocks. Of the 2,695 households, 198 were not visited by data collectors for the following reasons: no soliciting signs (124), vacant (50), unsafe dog (22), and generally unsafe (2). As a result, data collectors visited 2,497 households, made contact with someone at approximately 885 households, and identified approximately 360 aging adults who were eligible to participate in the study. Of those, 164 participants agreed to participate and completed surveys, resulting in a response rate of 45.6% (164/360). Of the 164 surveys, 161 could be analyzed.

Using U.S. Census data, we determined that the study sample was similar to the neighborhoods from which the sample was drawn in race/ethnicity, except more people who identified as American Indian/Alaska native were included in our sample than expected. Income levels of the sample also appeared similar to the neighborhood populations. See Table 1 and Supplementary Table 1 for details.

Data collection. Pairs of trained data collectors, at least one of whom was a bilingual Spanish speaker, approached the sampled households, determined study eligibility of household members, recruited participants to the study as appropriate, and conducted face-to-face household surveys in English or Spanish. Most of the data collectors were residents of the five target neighborhoods and varied in age. All participants were offered a US$10 grocery store gift card for participating. Prior to data collection, the survey was tested for clarity with four individuals aged 50 years or more from the target neighborhoods and no significant changes were made as a result. The surveys took 20 to 30 minutes to complete and covered the following areas:

- Social isolation/connectedness, defined as the size and quality of social network, loneliness, and social engagement/participation. *Size and quality of social network* was measured using the six-item Lubben Social Network Scale–Abbreviated (LSNS-6; Lubben et al., 2006), that asks about the number of family members and friends that the person has contact with, can talk to about private matters, and can call on for help. Item scores are summed and total scores range from 0 to 30. A score of less than 12 out of 30 suggests that a person is socially isolated. Scale data from older adults show good internal consistency ($\alpha = .84$) and discriminant validity (Lubben et al., 2006). Scores for family and for friends subdomains range from 0 to 15, and scores less than 6 suggest social isolation (Lubben et al., 2006). *Loneliness* was measured with a three-item scale that was adapted from the Revised University of California, Los Angeles (UCLA) Loneliness Scale addressing how often a person feels left out, feels isolated, and lacks companionship (Hughes et al., 2004). Response options include "hardly ever or never." "sometimes," or "often." The total score is the sum of the three items and ranges from 3 to 9 with higher values indicating greater loneliness. Scale data from older adults show good internal consistency ($\alpha = .72$) and convergent validity (Hughes et al., 2004). Individuals with a score of 7 or more were considered to have high loneliness. *Satisfaction with frequency of social activities* was measured with the question, "Regarding your present social activities,

do you feel that you are doing . . . too much, about enough, or would like to be doing more?" from the second Longitudinal Study of Aging (National Center for Health Statistics, 2002).

- Factors that relate to social isolation include age, extent that income meets needs, living alone or with others, access to transportation, self-reported health status, and information access. Access to transportation was assessed with the question, "Are you able to get transportation to places you want to go?" Response options included always or almost always, sometimes or not often. Frequency of accessing information was assessed by asking participants, "How often do you . . . read a newspaper, listen to the radio, watch television, go on the Internet, and communicate via email." Response options for newspaper, radio, and television were 1 = *every day*, 2 = *a couple of times a week*, 3 = *weekly*, 4 = *less often than once a week*, 5 = *never*. Questions regarding Internet and email included the same response options, with the addition of 6 = *don't use a computer*.
- Demographic information collected included gender, race/ethnicity, income, education, and marital status.

Data analysis. TNH2H granted access to the data to support this publication. Data were analyzed using descriptive statistics.

Results

Almost one quarter (23.6%) of the sample was socially isolated in terms of size of their close social network (LSNS-6). A greater proportion of participants scored as isolated on the Friends subscale (32.5%) than on the Family subscale (18%). Participants indicated low levels of loneliness, with a mean score of 4.3 out of a possible 3-9 points; 12.5% of participants had scores of 7 or more. Approximately 17.4% of the sample reported *often* lacking companionship, 6.2% reported *often* feeling left out, and 9.3% reported *often* feeling isolated. Close to one half (42.9%) of participants would like to do more social activities. See Table 2 for details.

To examine presence of factors that may be associated with social isolation, we compared socially isolated and nonisolated participants on the basis of the two LSNS-6 subscales (isolation from family and isolation from friends). A subscale score of less than 6 indicated social isolation (see Table 3). On both subscales, greater proportions of socially isolated participants reported that their income met their needs poorly, reported poor health, and reported less frequent access of newspapers, Internet, and email compared with nonisolated participants. When combining newspaper, radio, and Internet use together, fewer socially isolated participants on the family or friends subscales reported using one or more of these information sources at least a couple of times a week.

Greater proportions of participants isolated from family live alone compared with nonisolated participants. Participants who were isolated from family reported similar availability of transportation compared with nonisolated participants. Conversely, participants who were isolated from friends reported less availability of transportation compared with nonisolated participants. Participants who were isolated and not isolated from family reported similar levels of satisfaction with social activity, whereas a greater proportion of participants who were isolated from friends would like to do more social activities.

Looking across age groups (see Table 4), participants age 50 to 64 years reported the highest levels of social isolation according to size of total close social network (LSNS-6), size of close friend network, loneliness, and desire for more social activities. Across these dimensions, adults age 65 to 74 and 75 and more years reported similar, lower levels of isolation, with the exception of the Loneliness scale item "lack companionship." On this item, the older and younger age groups had similarly high proportions who often lacked companionship, while the group aged 65 to 74 years did not often lack companionship. Adults age 75 years and older reported greatest isolation according to size of family network.

Finally, of the 68 participants who would like to do more social activities, 36.8% (25) reported their income meets their needs "poorly," whereas 15.1% (13) of the 86 participants who were satisfied with their level of social activities reported their income meets their needs "poorly."

Discussion

The current study demonstrated that social isolation is an important aspect of aging in a socioeconomically, racially, and ethnically diverse community. While most participants did not experience social isolation, significant proportions of participants reported isolation on a range of indicators. Participants reported similar size of close social network (LSNS-6) as in previous population-based studies of Canadian and European older adults (Kobayashi, Cloutier-Fisher, & Roth, 2009; Lubben et al., 2006) and slightly higher levels of loneliness compared with population-based studies of American older adults (Cacioppo et al., 2006). Current study participants reported greater dissatisfaction with the amount of their social activities, compared with population-based studies of older adults in the United States (Hong, Hasche, & Bowland, 2009). Comparison of the current study with previous studies of local populations is more difficult, primarily because social isolation was measured in different ways. Some studies used various versions of the UCLA Loneliness Scale (Bondevik & Skogstad, 2000; Long & Martin, 2000; Margrett et al., 2011) or the de Jong-Gierveld Loneliness Scale (Buchman et al., 2010) and reported mean loneliness scores, which can be difficult to interpret and compare.

Table 2. Levels of Social Connectedness of Participants in Current and Previous Studies.

Indicator	*M*/frequency	95% CI[a]	Previous studies
Social network (LSNS)			
M (*SD*)	15.8 (*SD* = 6.1)	[14.9, 16.7]	16.1-17.9 (*SD* = 5.3-5.5)[b]
Score <12 (*n*, %)	38 (23.6%)	[17.0, 30.2%]	20.5%[c]
Family score <6 (*n*, %)	29 (18.0%)		
Friends score <6 (*n*, %)	52 (32.5%)		
Satisfaction with level of social activities[d] (*n*, %)			
Would like to do more	69 (42.9%)	[35.3, 50.6%]	20.80%
Too much	4 (2.5%)	[0.1, 4.9%]	2.30%
About enough	86 (53.4%)	[45.7, 61.1%]	68.8%[e]
Don't know/not sure	2 (1.2%)		
Loneliness[d]			
Score ≥7 (*n*, %)	20 (12.5%)		
Mean score (*SD*)	4.3 (*SD* = 1.6)	[4.1, 4.5]	3.89 (1.3)[f]
Loneliness scale items (*n*, %)			
Lacks companionship[d]			
Hardly ever or never	92 (57.1%)		
Some of the time	40 (24.8%)		
Often	28 (17.4%)		
Feels left out			
Hardly ever or never	123 (76.4%)		
Some of the time	28 (17.4%)		
Often	10 (6.2%)		
Feels isolated			
Hardly ever or never	114 (70.8%)		
Some of the time	32 (19.9%)		
Often	15 (9.3%)		

Note. LSNS = Lubben Social Network Scale.
[a]CIs (confidence intervals) reported only when a comparison is available from a previous study.
[b]Lubben et al. (2006), report of three different means and *SD*s.
[c]Kobayashi, Cloutier-Fisher, and Roth (2009).
[d]n = 160.
[e]Hong, Hasche, and Bowland (2009).
[f]Cacioppo, Hughes, Waite, Hawkley, and Thisted (2006).

The current study found that the most frequently reported indicator of social isolation was dissatisfaction with level of social activities, corresponding to a Canadian study of older primary care patients (Hand et al., 2014). These findings highlight the importance of measuring occupational aspects of social isolation and the potential to address this issue through occupational therapy approaches. The study findings suggest that a significant proportion of older adults desire more social activities, regardless of the size of their close family and friend social networks, and that having a small friend network may be related to desire for more social activities. Living with low income may be a primary barrier to engaging in social activities in this sample, considering the relatively low median income (US$20,000-US$24,999 per year) reported by study participants and the relatively high proportion of participants who want to do more social activities, who also reported an income that meets their needs "poorly." The study findings suggest that collaborations between public health and occupational therapy to address social isolation can target participation in affordable social activities at a community level and social network building, in contrast to common interventions that address mental health or social cognitive deficiencies (Masi, Chen, Hawkley, & Cacioppo, 2011).

Of factors related to social isolation, the current study found that older participants were less isolated than younger participants on a number of dimensions of social isolation, contrasting with previous research (Elder & Retrum, 2012; Nicholson, 2009) and highlighting the value of local studies. In the current study, the sole aspect of social isolation that deteriorated with age was size of close family network. These findings may indicate loss of meaningful close relationships due to health decline or death, while at the same time highlighting the resilience of the oldest aged adults in this context, who continued to be satisfied with their activity level and were unlikely to report loneliness. Participants may also have long histories in these well-established neighborhoods, which could be explored in relation to friend networks. Most studies

Table 3. Key Participant Characteristics by Presence of Isolation From Family and Friends.

	Isolated from family	Not isolated from family	Isolated from friends	Not isolated from friends
Income meets needs				
Poorly	14/29 (48.3%)	24/131 (18.3%)	23/51 (45.1%)	15/108 (13.9%)
Very well/fairly well	15/29 (51.7%)	107/131 (81.7%)	28/51 (54.9%)	93/108 (86.1%)
Lives alone	14/29 (48.3%)	40/131 (30.5%)	15/51 (29.4%)	38/159 (35.2%)
Lives with others	15/29 (51.7%)	91/131 (69.5%)	36/51 (70.6%)	70/108 (64.8%)
Transportation available				
Sometimes/not often	4/29 (17.2%)	20/132 (15.2%)	15/52 (28.8%)	10/108 (9.3%)
Always/almost always	24/29 (82.8%)	112/132 (82.8%)	37/52 (71.2%)	98/108 (90.7%)
Poor/fair health	13/29 (44.8%)	39/132 (29.5%)	26/52 (50.0%)	25/108 (23.1%)
Good/very good/excellent health	16/29 (55.2%)	93/132 (70.5%)	26/52 (50.0%)	83/108 (76.9%)
Social activity level				
Would like to do more	14/28 (50.0%)	55/131 (42.0%)	30/51 (58.8%)	38/107 (35.5%)
Does too much	0 (0%)	4/131 (3.1%)	1/51 (2.0%)	3/107 (2.8%)
Does about enough	14/28 (50.0%)	72/131 (55.0%)	20/51 (39.2%)	66/107 (61.7%)
Reads newspaper				
Weekly or more	13/29 (44.8%)	82/132 (62.1%)	26/52 (50.0%)	68/108 (63.0%)
Less than weekly	16/29 (55.2%)	50/132 (37.9%)	26/52 (50.0%)	40/108 (37.0%)
Listens to the radio				
Weekly or more	23/29 (79.3%)	106/132 (80.3%)	37/52 (71.2%)	91/108 (84.3%)
Less than weekly	6/29 (20.7%)	26/132 (19.7%)	15/52 (28.8%)	17/108 (15.7%)
Watches television				
Weekly or more	26/29 (89.7%)	125/132 (82.8%)	48/52 (92.3%)	102/108 (94.4%)
Less than weekly	3/29 (10.3%)	7/132 (5.3%)	4/52 (7.7%)	6/108 (5.6%)
Uses internet				
Weekly or more	9/29 (31.0%)	72/132 (54.5%)	17/52 (32.7%)	64/108 (59.3%)
Less than weekly	20/29 (69.0%)	60/132 (45.5%)	35/52 (67.3%)	44/108 (40.7%)
Uses email				
Weekly or more	10/29 (34.5%)	65/132 (49.2%)	15/52 (28.8%)	60/108 (55.6%)
Less than weekly	19/29 (65.5%)	67/132 (50.8%)	37/52 (71.2%)	48/160 (44.4%)
Access newspaper, radio, and/or Internet ≥ twice a week	24/29 (82.8%)	119/132 (90.2%)	42/52 (80.8%)	100/108 (92.6%)

Note. Isolated defined by LSNS-6 for family or friends subscale. LSNS = Lubben Social Network Scale.

of social isolation in older age examine adults age 65 years and older, missing an important younger demographic; the current study therefore contributes to this emerging knowledge base.

Similar to previous studies (e.g., Nicholson, 2012), income, health, and availability of transportation were identified as potential contributors to social isolation. A novel finding in the current study, however, is that transportation does not appear to be associated with size of a persons' close family network, and that participants with a small friend network appear more likely to lack consistent availability of transportation. It could be that aging adults in urban neighborhoods can maintain a close family network via in-person as well as phone or internet contact, whereas transportation is a necessity to developing and maintaining a close network of friends. Given the cross-sectional nature of this study, the converse could hold as well; having a network of close friends may facilitate access to transportation. In addition, while previous research has identified living alone as a risk for social isolation generally (Elder & Retrum, 2012; Nicholson, 2009), the current study adds nuance to this relationship by suggesting that living alone may be related to isolation from family, but not isolation from friends.

Socially isolated participants accessed most types of information sources less frequently than nonisolated participants, suggesting that lack of information about a range of topics could relate to social isolation. While previous research has found that a majority of home-bound low-income older adults never use the Internet (Choi & DiNitto, 2013), the current study identified that isolated aging adults also access radio and newspapers less often than nonisolated aging adults. The pattern of information source use found in the current study suggests that to reach and provide information to socially isolated aging adults, alternatives to typical media may be needed, such as face-to-face contact by key community members such as health care professionals,

Table 4. Social Isolation by Age.

	Age 50-64 years *n* = 97	Age 65-74 years *n* = 34	Age 75+ years *n* = 27
Social network (LSNS)			
Mean score (*SD*)[a]	15.1 (*SD* = 5.9)	17.5 (*SD* = 6.2)	16.7 (*SD* = 6.3)
Score <12 (*n*, %,)[a]	26 (26.8%)	6 (17.6%)	5 (19.2%)
Family score <6 (*n*, %)	16 (16.5%)	5 (14.7%)	7 (25.9%)
Friends score <6 (*n*, %)[a]	36 (37.1%)	9 (26.5%)	6 (23.1%)
Satisfaction with level of social activities (*n*,%)[b]			
Would like to do more	49 (51.0%)	12 (35.3%)	8 (29.6%)
Too much	3 (3.1%)	1 (2.9%)	0 (0%)
About enough	44 (45.8%)	21 (61.8%)	19 (70.4%)
Loneliness[a] mean score (*SD*)	4.5 (*SD* = 1.8)	3.9 (*SD* = 1.3)	4.0 (*SD* = 1.5)
Score ≥7 (*n*, %)	17 (17.5%)	2 (5.8%)	1 (3.8%)
Loneliness scale items (*n*, %)			
Lacks companionship[a]			
Hardly ever or never	52 (53.6%)	22 (64.7%)	17 (65.4%)
Some of the time	26 (26.8%)	9 (26.5%)	4 (15.4%)
Often	19 (19.6%)	3 (8.8%)	5 (19.2%)
Feels left out			
Hardly ever or never	70 (72.2%)	26 (76.5%)	24 (88.9%)
Some of the time	18 (18.6%)	8 (23.5%)	2 (7.4%)
Often	9 (9.3%)	0 (0%)	1 (3.7%)
Feels isolated			
Hardly ever or never	62 (63.9%)	29 (85.3%)	21 (77.8%)
Some of the time	23 (23.7%)	3 (8.8%)	5 (18.5%)
Often	12 (12.4%)	2 (5.9%)	1 (3.7%)

Note. LSNS = Lubben Social Network Scale.
[a]Age 75+ n = 26.
[b]Age 50-64 n = 96.

social services providers, community leaders, or neighbors. Efforts to reach potentially isolated aging adults may also require multiple strategies, such as a combination of print media, electronic communications, and personal contact.

This study informed further action by TNH2H; the Social Connectedness subcommittee subsequently received funding to explore the experiences of and solutions to social isolation in the five study communities through a series of home-based focus groups and community meetings. Information gained from the current study and the focus groups and meetings also informed development of working groups to address specific issues in the community. One working group focused on connecting seniors to information that can help to reduce social isolation, including information about community resources, events, and activities.

Limitations

This study could be biased by the sample we recruited, given that many households did not respond to door knocking and many eligible individuals declined to participate. The strength of the recruitment methods, however, lies in our community-based approach, seeking out a cross-section of the community population, and avoiding venue-based or convenience sampling that could introduce additional biases. In addition, the small sample and participants nested in neighborhoods limited our ability to perform complex analyses.

Implications and Next Steps

The study findings suggest an opportunity for occupational therapists to contribute to aging adults' wellness at the community level. Given the desire of study participants to do more social activities, occupational therapists can collaborate with public health professionals and policy makers to develop local strategies and public policy to promote social engagement and connectedness in aging adults. Efforts could include increased opportunities for local social activities, improved communications about community and social events, building senior-friendly community networks, or advocating for community and recreational facilities to be more accessible to seniors, including creating low cost options. Occupational therapists can also apply their skills in adapting occupations to develop activities, events, and programming that meet the needs of people with varying physical, cognitive, and sensory abilities. Individual occupational

therapy services can work in concert with more population-based approaches to collaborate with clients to identify transportation options, address health-related barriers to occupational engagement, and build strong social networks. Adults age 50 to 64 seem particularly at risk of social isolation, and occupational therapists can include a specific focus on this age group in efforts to address social isolation in populations. Occupational therapists offering other programs and services for this age group, such as after injury or illness, can also be alert to possibility of social isolation and work to prevent and address it.

Future research could build on the findings of this study, such as exploring the factors that shape social isolation and social engagement in neighborhoods, including the ways in which occupational engagement intersects with and affects social isolation. More information is needed, for example, about the role that access to media sources plays in awareness of opportunities for social engagement. Understanding how aging adults connect with others in their neighborhoods, such as through casual interactions or community-based organizations, could help inform strategies to promote connections. Exploring neighborhood-based supports and barriers to social participation and examining effects of supports such as free public transit (Coronini-Cronberg, Millett, Laverty, & Webb, 2012) can also generate much-needed knowledge.

Conclusion

Understanding experiences of social isolation in local populations is critical to providing services to and promoting social connectedness, belonging, and engagement in aging adults. The present study suggests that aging adults living in socioeconomically diverse urban neighborhoods experience social isolation in terms of small social networks, particularly friends, and desire more social engagement. Factors that may relate to isolation in this context are age, income, health, and accessing newspapers and the Internet. Access to transportation may relate to isolation from friends, but not family, and living alone may relate to isolation from family, but not friends. These findings indicate a need to enhance occupational engagement among similar groups and communities as a means to prevent and decrease social isolation. Occupational therapists can advocate for policy and implement practices that promote occupational participation and social engagement (Braveman, 2016) in ways that attend to the local context. They can work with community members and public health professionals to develop occupation-focused policy and strategies to improve social connectedness in aging adults. Further exploration of facilitators and barriers to social connectedness and engagement at the neighborhood level is needed.

Authors' Note

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Supplementary Material

Supplementary material is available for this article online.

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