Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Reducing Social Isolation of Seniors during COVID-19 through Medical Student Telephone Contact

Emma E. Office BA,^1^ Marissa S. Rodenstein BS,^1^ Tazim S. Merchant BA,^1^ Tricia Rae Pendergrast BA,^1^ Lee A. Lindquist MD MPH MBA CMD^1^

Division of General Internal Medicine and Geriatrics, Feinberg School of Medicine, Northwestern University, Chicago, IL

Article type: Pragmatic Innovation
Abstract word count: 124 words
Manuscript word count: 1163 words

Corresponding author contact information:
Lee Lindquist, MD MPH MBA CMD
Division of General Internal Medicine and Geriatrics, Northwestern University, Feinberg School of Medicine, 750 N. Lake Shore Drive, 10th floor, Chicago, IL 60611.
Phone number: (312) 695-4525
Email: LAL425@northwestern.edu
Twitter: @LeeLindquistMD

Key Words: Social Isolation, COVID-19, Medical Education, Telehealth

Running Title: Social Isolation Calls during COVID-19

Summary: During COVID-19 quarantine, M1 students phoned seniors in LTCFs, to conduct social histories and reduce social isolation with results showing bi-directional benefit to both students/seniors and a feasible pragmatic intervention.

Declaration of Conflicting Interests / Ethics Review: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. The Northwestern University Institutional Review Board reviewed and deemed this study exempt.

Acknowledgements: The authors wish to thank their families and loved ones for support while in medical school and the health care profession. The authors also wish to thank the volunteers who assisted with the telephone contact of the older adults.
Abstract

Social isolation has been associated with many adverse health outcomes in older adults. We describe a phone call outreach program in which health care professional student volunteers phoned older adults, living in long-term care facilities and the community, at risk of social isolation during the COVID-19 pandemic. Conversation topics were related to coping, including fears/insecurities, isolation, and sources of support; health; and personal topics such as family and friends, hobbies, and life experiences. Student volunteers felt the calls were impactful both for the students and for the seniors, and call recipients expressed appreciation for receiving the calls and for the physicians who referred them for a call. This phone outreach strategy is easily generalizable, and can be adopted by medical schools to leverage students to connect to socially-isolated seniors in numerous settings.
Social isolation, a quantitative loss in a person’s social relationships, is common in older adults, with 27% of adults over 60 y/o living alone.\textsuperscript{1,2} During the COVID-19 pandemic, social distancing has been an essential public health strategy.\textsuperscript{3} While many older adults entered independent living communities for activities and socialization, they have been advised to remain in their own apartments or room. Meals are delivered to doors, activities have stopped, exercise rooms closed, and visitors are restricted. These necessary stay-at-home measures unfortunately increase social isolation.

Social isolation has been associated with adverse health outcomes including increased risk of falls, all-cause mortality, hospitalizations, and cognitive decline, as well as unhealthy behaviors like physical inactivity and poor diet.\textsuperscript{4,5} Additionally, in the previous SARS pandemic, isolating infection control practices were associated with increased depression and traumatic stress response symptoms.\textsuperscript{6} Social isolation has been associated with less infection resistance, more emergency admissions to hospital, and extended length of stay, factors which may lead to worse outcomes during the COVID-19 pandemic.\textsuperscript{7-10}

Given the effects on the mental and physical health of the elderly, interventions targeting social isolation are necessary to mitigate risk of increased morbidity and of infection from COVID-19.\textsuperscript{11,12} Information and communication technology strategies show promise in reducing social isolation in the elderly, with literature demonstrating a positive impact of a telephone befriending program on older adults’ perceived health and wellbeing.\textsuperscript{13,14}

\textbf{Innovation}
We created a phone call outreach program, Seniors Overcoming Social Isolation (SOS), in which medical and health professions student volunteers (e.g. MD, MD/PhD, Neuroscience, Genetic Counseling) called older adults, living in long-term-care facilities (LTCF) and the community, at risk of social isolation during COVID-19. The SOS program entailed providers identifying at-risk older adults and then referring the contact information to coordinators who would then pass the info to student volunteers. Student volunteers were provided with an introduction script and a series of conversation starters, general social history questions, and well-being questions (e.g. resource needs, groceries) to ask the older adult. Students then phoned the older adults when they had available free time. The goals were (1) to provide companionship and resources for unmet needs of older adults, while (2) fostering health professional students’ skills in communicating and understanding the needs of older adults in their community. We propose that social phone calls to older adults may reduce social isolation while providing meaningful engagement with the community and a learning experience for students.

**Implementation**

Older adults at risk for increased social isolation during COVID-19 were identified by their primary care provider or community center coordinator and enrolled in the SOS program. The SOS program coordinator (medical student) sent an email invitation to the first year medical school listserv (approximately 150 students) seeking student volunteers. Volunteers signed up via an online form and then were assigned older adults to contact through their secure university email. Volunteers were provided with educational reading on geriatric-specific issues and asked to follow a sample script that suggested topics of conversation including wellbeing, coping,
social supports, and daily activities. The Institutional Review Board deemed this research exempt.

Evaluation

Student volunteers completed a post-call online survey describing the content, self-reflection, and perceived impact of the call. Three authors (EEO, MSR, LAL) analyzed responses using constant comparative techniques. They independently assessed participant responses for focal themes and convened to compare and compile findings and create a preliminary list of categories and major themes. Identified themes were refined with coders triangulating their perspectives and resolving any identified discrepancies through discussion. In no cases were the coders unable to reach consensus. The coders organized the content into relevant themes. Descriptive statistics were used to analyze participant surveys.

Results

Fourteen volunteers made 25 phone calls, averaging a length of 8.3 min (SD 4.0). Nearly all volunteers (85.7%) were in medical school (MD or MD/PhD program), and most of those students were in their first year of medical school (75%). There was 2 graduate health program students (e.g. medical geneticist and neuroscientist programs) who heard about program through word-of-mouth. Volunteers were predominantly female (92.9%), and identified as Asian or White (50% and 43%, respectively).

Both conversational and COVID-19-related themes were discussed during calls (Table 1). Topics related to COVID-19 included health, fears, isolation, coping, and sources of support, while other prominent topics ranged from family and friends, to hobbies, to the older adult’s
past. In addition to providing social connection, several students assisted in addressing unmet needs by referring the older adults to sources of support.

Most students felt that the calls were well-received; recipients expressed appreciation both for the calls/callers and for those who referred them. (Table 2) Some students felt that the call was less impactful, while one felt that they had disrupted the older adult by calling. Student volunteers indicated they had plans to contact a little over a third of older adults (36%) again. We do not have data about follow-up phone-calls.

After the telephone contact, many students felt positive and empowered; one described feeling inspired by the older adult’s story, and several reflected on the senior’s appreciation. Other students acknowledged challenges, such as needing patience and talking about different topics than normally discussed with younger adults (Table 3).

Discussion/Comment

During the COVID-19 pandemic, requisite social isolation is a critical problem among older adults living in assisted and independent living communities. There is ample evidence that this is an important problem desperately needing intervention.

To reduce social isolation, we present a practical intervention leveraging health professions graduate students contacting older adults and residents of independent and assisted living by phone. Our results show that it is feasible and has bi-directional benefit to both student callers and older adult residents. Students felt empowered and that they were able to make a
difference in the lives of socially isolated seniors. Results also showed that they were learning how to be patient and slowdown in conversations with hearing-impaired seniors, specifically learning important tenets of geriatrics in the process. Older adults appreciated and enjoyed receiving calls, likely as they were interrupting their social isolation.

Limitations of this study include the small sample size, single location, and referral of older adults by a provider. While conducted in a single location (Chicago), COVID-19 was widespread and existed in most of the area’s long-term-care communities necessitating isolation. Several students struggled to contact their assigned older adults, potentially due to illness or hospitalizations. This intervention depends on student volunteerism; as classes resume, fewer students may have time to participate. Moreover, this requires coordination of providers in identifying appropriate older adults, student volunteering, and a coordinator assigning seniors to call. While online sign-ups limit some of the workload, a dedicated volunteer student coordinator is necessary.

Seniors Overcoming Social Isolation calls are easily generalizable and can be adopted by most medical schools to connect students to socially isolated seniors in multiple settings. For further generalization, student volunteer groups do not need to be in the same area as those being contacted. Medical schools can partner with rural communities or low income areas who do not have direct academic partnerships to reduce isolation in hard-to-reach areas. During COVID-19 pandemic, this simple innovation has been shown to be a feasible route of improving the lives of both older adults and students.
1. Ausubel, J. Older people are more likely to live alone in the U.S. than elsewhere in the world. 2020 [cited 2020 4/28/2020]; Available from: https://pewrsr.ch/2TV01ao.

2. National Academies of Sciences, E. and Medicine, Social Isolation and Loneliness in Older Adults: Opportunities for the Health Care System. 2020, Washington, DC: The National Academies Press. 320.

3. Social Distancing, Quarantine, and Isolation. 2020 April 4, 2020 [cited 2020 April 21, 2020]; Available from: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html.

4. Nicholson, N.R., A Review of Social Isolation: An Important but Underassessed Condition in Older Adults. The Journal of Primary Prevention, 2012. 33(2-3): p. 137-152.

5. Hämmig, O., Health risks associated with social isolation in general and in young, middle and old age. PLOS ONE, 2019. 14(7): p. e0219663.

6. Hawryluck, L.G., Wayne L.; Robinson, Susan; Pogorski, Stephen; Galea, Sandro; Styra, Rima, SARS Control and Psychological Effects of Quarantine, Toronto, Canada. Emerg Infect Dis, 2004. 10(7): p. 1206-1212.

7. Cohen, S., et al., Social Ties and Susceptibility to the Common Cold. JAMA, 1997. 277(24): p. 1940-1944.

8. Cornwell, E.Y. and L.J. Waite, Social Disconnectedness, Perceived Isolation, and Health among Older Adults. Journal of Health and Social Behavior, 2009. 50(1): p. 31-48.

9. Hastings, S.N., et al., Does lack of social support lead to more ED visits for older adults? The American Journal of Emergency Medicine, 2008. 26(4): p. 454-461.

10. Landeiro, F., et al., Reducing social isolation and loneliness in older people: a systematic review protocol. BMJ Open, 2017. 7(5): p. e013778.

11. Armitage, R. and L.B. Nellums, COVID-19 and the consequences of isolating the elderly. The Lancet Public Health, 2020.

12. Venkatesh, A. and S. Edirappuli, Social distancing in covid-19: what are the mental health implications? BMJ, 2020: p. m1379.

13. Chen, Y.-R.R. and P.J. Schulz, The Effect of Information Communication Technology Interventions on Reducing Social Isolation in the Elderly: A Systematic Review. J Med Internet Res, 2016. 18(1): p. e18.

14. Cattan, M., N. Kime, and A.-M. Bagnall, The use of telephone befriending in low level support for socially isolated older people - an evaluation. Health & Social Care in the Community, 2010: p. no-no.
| Themes                      | Representative Quotations                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------|
| COVID-19                    | Some of their current health issues and their fears about coronavirus,                      |
| Social Isolation /Coping   | How shelter in place has affected her social interactions                                   |
| Family and Friends         | Who is helping them with their needs right now, their grandchildren                        |
| Living Situation           | Her current situation in her assisted living facility, how she is being supported by her daughter and her doctor |
| Technology                 | How the patient’s new google device is helping her.                                        |
| Past                       | Discussed patient’s career/family when he was a child.                                     |
| Health Issues/ MD appts    | How her day is, she feels some shoulder pain.                                              |
| Insecurities (e.g. food, finances) | If she was experiencing food/housing insecurity,                                             |
| Polite (e.g. weather, hobbies) | travel cancellation, books she’s reading                                                       |
| Appreciation               | how he appreciates the call and is very appreciative of doctor.                             |
### Table 2: Perceived Impact of the SOS Call on Older Adults

| Themes                        | Representative Quotations                                                                                                                                                                                                                     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Patient Enjoyment and Appreciated | - I think the patient was really happy to have someone to talk to for a bit.  
                              - I think the patient was happy that someone called.  
                              - I think it was nice for the patient. They seemed eager to share their current situation and were overall quite upbeat, though they said they’re not really a ‘phone person’.  
                              - He seemed appreciative of the call and looking forward to future calls from me.                                                                                                                                                        |
| Perceived too Short           | - We actually would have talked for longer, but the patient said her throat was getting tired.                                                                                                                                                     |
| Unclear if replaced physician visit | - She wasn’t sure why we called since she talked to her doctor last week                                                                                                                                                                        |
| Provided Resources            | - I passed on information to someone who could maybe help,                                                                                                                                                                                   |
| Unsure/Minimal                | - Minimal, but not zero. I think the patient was still happy to know that her Doctor is looking out for her.                                                                                                                                   |
| Themes             | Representative Quotations                                                                                                                                 |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Positive           | - I felt great.                                                                                                                                             |
|                    | - Overall I felt more positive after the conversation.                                                                                                      |
|                    | - Inspired to learn about the patient's story!                                                                                                             |
| Empowered Making a Difference | - Empowered that these calls make a difference,                                                                                                            |
|                    | - I’m happy to finally be doing something to make a difference in the COVID-19 outbreak                                                                 |
|                    | - I felt like I was able to do something small with just 10 minutes of my day, and I could hear the appreciation in his voice. I felt very fulfilled by this small act. |
| Contacting Again   | - Plan to call again next week                                                                                                                             |
| Comfort Level      | - It felt strange to ask about the social factors.                                                                                                        |
| Learning Geriatric Issues | - I’m learning that I need to have more patience in future conversations with geriatrics patients. Talking to older patients on the phone means that I need to allow them more time to answer, especially if they have any sort of cognitive impairments. |
| Neutral            | - Not uncomfortable, but not like I had made a huge difference.                                                                                           |