



The Main Issues and Challenges Older Adults Face in the SARS-CoV-2 Pandemic: A Scoping Review of Literature

**Khorshid MOBASSERI^{1,2}, Saber AZAMI-AGHDASH^{3,4}, Ahmad KHANIJAHANI⁵,
*Rahim KHODAYARI-ZARNAQ^{3,4}**

1. Department of Health Education and Promotion, School of Health, Tabriz University of Medical Sciences, Tabriz, Iran
2. Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran
3. Department of Health Policy and Management, School of Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran
4. Tabriz Health Services Management Research Center, Health Management and Safety Promotion Research Institute, Tabriz University of Medical Sciences, Tabriz, Iran
5. Department of Health Administration and Public Health, John G. Rangos School of Health Sciences, Duquesne University, Pittsburgh, P.A, USA

***Corresponding Author:** Email: Rahimzarnagh@gmail.com

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Abstract

Background: The Severe Acute Respiratory Syndrome Coronavirus Disease 2019 (SARS-CoV-2) severely affects those above the age of 60 yr and those with other conditions. This study aimed to review the available evidence on older adult's issues in facing the COVID-19 pandemic.

Methods: The framework is based on scoping review of literature published from Jan 10 to Jul 31, 2020. Medline, Scopus, Web of Science, and Google Scholar databases and other sources of information, to identify grey literature, were selected for data collection. Two researchers independently screened all studies and extracted data. All types of studies published about SARS-CoV-2 and related to older adults' issues were eligible.

Results: Overall, 210 documents were included in the final analysis. Letter to the editor was the most frequent article format (20.95%). Most of the papers were from the United States (38.09%) and published in Jun 2020 (29.52%). After content analysis, six following themes were extracted: Supporting and information sources, e-health services, access to essential supplies, Long Term Care Facilities (LTCFs), physical and mental consequences of self-isolation, neglect of older adults, ageism and age discrimination.

Conclusion: In the pandemic, there is an urgent need for interventional research and innovational implementations to address issues related to providing services for older adults. This can help older adults to maintain their physical and mental health, and reduce the spread of infection in nursing homes. Further studies focusing on the rights of the older adults are needed on all issues associated with COVID-19.

Keywords: Older adults; SARS-CoV-2; Nursing homes; Mental health; Review

Introduction

On Mar 11, 2020, the World Health Organization (WHO) declared the Coronavirus Disease 2019

(SARS-CoV-2) a pandemic, based on more than 118000 cases in over 110 countries and territories



with sustained risk of further global spread (1). The Center for Disease Control (CDC) estimates that eight out of ten reported deaths in the United States have been in older adults. Case-fatality risk estimation indicates the mortality rate to be as low as 0.6%; however, older persons are at a much higher risk of mortality (about 15%) than younger persons (2). At the time of writing this article (until 6 Sep, 2020) there have been 27,217,064 global COVID-19 cases, with 800,906 deaths. Older adults accounted for approximately 80% of these deaths.

Older adults with underlying co-morbidities and chronic conditions suffer the adverse COVID-19 outcomes (3). Although public health approaches, including wearing face masks, massive screening, physical distancing, and quarantine, were the critical control measures, these actions might negatively affect older adults in wellness dimensions (4). Despite the former SARS outbreak in 2003, there are many gaps in services and support for older adults in a pandemic. They confront multiple barriers in accessing health care services and other supplies such as food and medications (5). Additionally, residents of nursing homes are generally older people with several underlying diseases and cannot care for themselves. The WHO estimates that half of all COVID-19 deaths in Europe happened in older adults living facilities (6).

Due to the current spread of the virus and emergency need for their isolation, the older adults living in these facilities experience loneliness and reduced access to health services due to fear of getting infected (7). Virtual contact with their families and telehealth can be used to reduce social isolation address their ongoing healthcare needs (8). Some countries' effective measures in protecting this age group can help other countries prevent adverse outcomes and reduce the burden of care and costs imposed on families and governments. This paper has reviewed the available evidence on older adults' issues in the

COVID-19 pandemic, actions taken by different countries, and solutions offered in the literature .

Materials and Methods

This scoping review study was conducted according to the framework proposed by Arksey and O'Malley developed in 2005 including six steps (9).

Step one: Identification of the research question

The main aim of this study was to identify and review the available evidence on older adults' challenges in the COVID-19 pandemic, measures taken by different countries, and solutions offered in the literature. To address this aim, the following questions were asked when examining the relevant literature:

- What are the characteristic of the publications (journal, type of article/study, topic, country, and month published)?
- What are the challenges and actions taken by different countries in each domain?
- What solutions have been suggested in the literature?

All publications on the COVID-19 and older adults from 10 Jan to 31 July 2020 were included. This includes all research, reports, guidelines, news articles, and scientific material in the English language on this topic. The exclusion criterion was non-English publications.

Step two: Identification of the relevant evidence

PubMed, Scopus, Google Scholar, Web of Science were searched for relevant studies. Other documents came from manually searching through some relevant and high-ranked journals; cross-referencing; talking to experts; and looking through WHO reports, various countries' ministries of health, and broadcasting and other websites (Table 1).

Table 1: Keywords using for Identification of the relevant evidence about older adults and COVID 19

<i>Main keyword</i>	<i>Related keywords</i>
COVID-19	COVID 19 OR CO-19 OR Corona Virus OR 2019-nCoV OR SARS-CoV-2 OR 2019 novel coronavirus disease OR Coronavirus OR 2019-nCoV OR New coronavirus disease
AND	
Older adults	old* OR elderly OR senior OR Aged OR geriatrics OR vulnerable group

Step three: Study selection/screening

Two members of the research team independently screened all titles, abstracts, and full texts. Disagreements were resolved by discussion. After finalizing the list of documents, the required information was extracted. Endnote X8 software was used to screen and select articles as well as to identify and remove duplications.

Step four: data categorization

The extracted information from the documents was summarized and categorized. We described the journal, type of study, topic, country, and publication or posted date of the included literature. We conducted this scoping review according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist (10).

Step five: conclusion, summarization and reporting the results

After data extraction, content analysis was used for data analysis. Data coding was performed by two researchers. The steps of data analysis and coding included immersion in the results of articles, identification and extraction of primary domains, placement of articles in specified domains, review and completion of the results of each domain using the results of field articles, ensurance of the reliability of domains, and extraction of results in each case.

Step six: providing practical recommendations

After the review of the available evidence, based on the study's results and the viewpoint of the research team, practical recommendations were provided for future studies and policymakers.

Results

Out of the 3,292 retrieved documents, 195 were identified as duplications. By screening the titles and abstracts, 2,877 were excluded from the study due to their irrelevancy. An additional ten documents were excluded after further review. Thus, 210 documents were reviewed for this study (Fig. 1). Table 2 illustrates the characteristics of the included documents. After content analysis, six themes were extracted from the results (Fig. 2, Table 2).

- Support and information sources

During the pandemic, supporting older adults can be done in several fields. One of the actions is the Coronavirus Aid, Relief, and Economic Security (CARES) Act (2020), which included USD 955 million allocated to support older adults with disabilities, by providing meal services, cost coverage for tests and treatment, telehealth services, and home health services through reauthorizing Title VIII Nursing Education Programs (11). In the US, significant federal government measures included The Families First Coronavirus Response Act on March 18, 2020, which included USD 250 million for nutrition services, providing paid sick leave to patients with COVID-19, and telehealth services (12). At the public level, a massive screening policy, contact tracing, and physical distancing in the majority of countries (4); financial domain insurance coverage in France and China (13); and coverage of total hospitalization costs by Medicare and private insurance in the US have been implemented (14).

Table 2: Characteristics of the included studies in the scoping review, 10 Jan–31 July

<i>Journal</i>	<i>Country</i>	<i>Date(2020)</i>	<i>Types of studies</i>	<i>Topic</i>
<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>
Lancet 5(2.38)	China 11(5.23)	January 1(0.47)	Guidance/guideline news 38(18.08)	Supporting and infor- mation sources 69(32.85)
Journal of the American Geriatrics Society 26(12.38)	France 5(2.38)	Feb 2(0.95)	Review 10(4.76)	Virtual Communication 42(20)
Journal of Gerontological Nursing 3(1.42)	U.S 80(38.09)	March 28(13.33)	Basic research 2(0.95)	
Journal of Aging & Social Policy 20(9.52)	U.K 20(9.52)	April 39(18.57)	Letter 44(20.95)	Availability to essential supplies in the self- isolation
Canadian Journal on Aging 3(1.42)	Japan 5(2.38)	May 60(28.57)	Epidemiological study 15(7.14)	27(12.85)
The Journal of Frailty & Aging 4(1.90)	Italy 13(6.19)	June 62(29.52)	Editorial 24(11.42)	Physical and mental con- sequences of self-isolation 71(33.80)
Age and Ageing 5(2.38)	Canada 17(8.10)	July 18(8.57)	Commen- tary/viewpoint 65(30.95)	
The American Journal of Geriatric Psychiatry 13(6.19)	Germany 3(1.42)		Brief reports 9(4.28)	Long term care facilities and related solutions 67(32)
Journal of Gerontological Social work 9(4.28)	Spain 6(2.85)		Case report/series 2(0.95)	
Geriatrics & Gerontology International 3(1.42)	London 5(2.38)		In depth interview 1(0.47)	Neglect of Older adults, ageism and age discrimi- nation 32(15.23)
The new England journal of medicine 3(1.42)	Australia 4(1.90)			
International psychogeriatrics 3(1.42)	Ireland 7(3.33)			
Other 113(53.8)	Other 34(16.19)			

In Uruguay, giving older workers subsidies to ensure no urgency to leave home for work and providing food for those in need are among the key financial support efforts (15). Argentina's Ministry of Health has established a self-assessment application for primary screening for the virus (16). In Singapore, the Agency of Integrated Care, in collaboration with many charities, supports older adults at risk of social isolation and creates educational television programs targeting older adults (17). Another

program is the publication of guidelines. The International Association for Gerontology and Geriatrics, Asia/Oceania (IAGG-AO) has published COVID-IAGG-AO guidance to prevent COVID-19 in older adults (18). The UK government published guidance known as 'shielding', advised older adults to stay at home, and introduced a registration website for offering services such as the delivery of boxes with essential supplies (19).

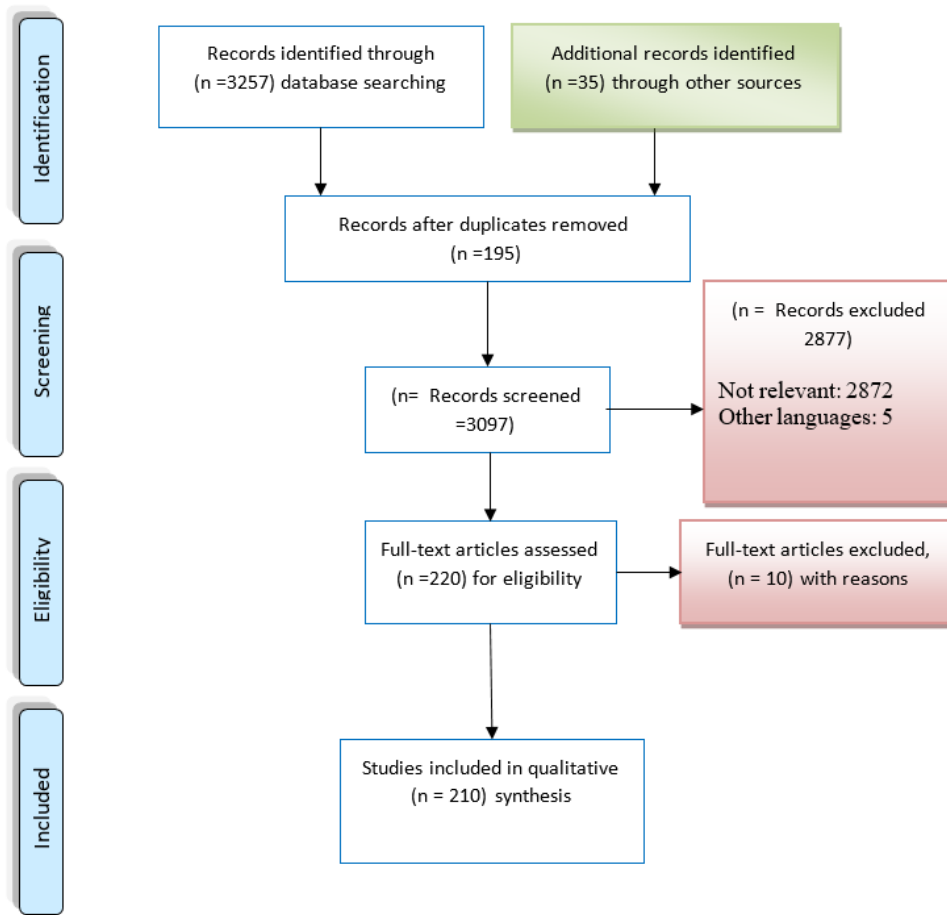


Fig. 1: The process of screening and selection of articles

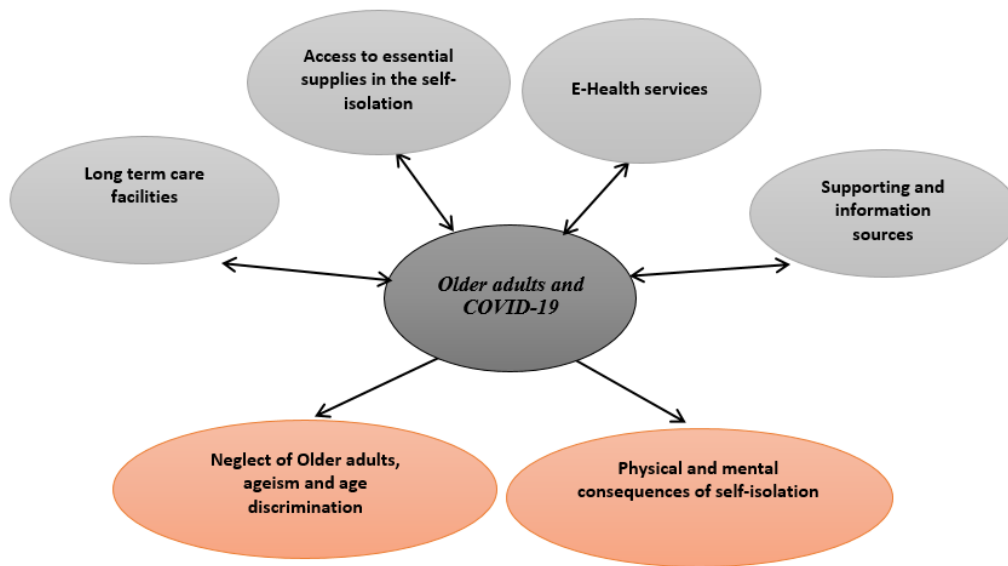


Fig. 2: Themes extracted from the studies

- E-Health services

In a pandemic, face-to-face contact between patients and clinics decreases. Here, telemedicine efficiently provides interaction among them (20). Also, social contact via telephone or video-calls may increase the feeling of wellbeing (21). In this case, the Digital Healthcare Act – DVG in Germany enables people to use healthcare apps for online video consulting and access to a secure healthcare data network (22). In the U.S more than USD 500 million in Medicare assigned for tele-consulting by health systems such as Jefferson Health, Cleveland Clinic, Kaiser Permanente, and Providence (23). The US Department of Health and Human Services has made it easier to use these services by suspending some of the Health Insurance Portability and Accountability Act (HIPAA) and expanding the use of telehealth (24). Coronavirus Preparedness and Response Supplemental Appropriations Act provides funding for research and public health activities on COVID-19 and allows for the use of Medicare services without restrictions (25). However, many older adults cannot use technology and do not have access to smartphones and internet connection (21). In the UK, less than 50% of adults aged ≥ 75 yr have access to the internet (26). The role of volunteer groups in helping older adults to use technology is essential (27).

- Access to essential supplies in the self-isolation

Older adults who do not have access to essential supplies such as food and medication are provided support to address these challenges in different countries. For example, Korea has provided emergency care services for older peoples who have experienced interruptions in care services (28). Online food ordering and food delivery services have been provided in China, the UK, and Uruguay (29). Delivering frozen meals for low-income older adults is a proposed intervention by the National Council on Aging in the US (30).

A measure taken by all Whole Foods Market stores in the U.S, Germany, the UK, and Canada is allocating private hours for the older adults before opening to others and limiting the amount of each product that an individual can buy (27). Some of the Government of Canada COVID-19 Fiscal Response includes an elderly support plan (of which, USD 9 million in 2019-20), and supporting food banks (of which, USD 25 million in 2019-20) (31). US programs are allocating USD 250 million for the Senior Nutrition Program which provides meals on wheels to older peoples who are caregivers, low-income, or frail (32). Another key measure that is prominent in many countries such as Italy, South Korea, Argentina, and the US is the formation of volunteer groups for helping with out-of-home work for older adults, such as grocery shopping (27).

- Long term care facilities (LTCFs)

About 60% of the world population would become infected (33), with one of the main factors being the increasing population of older adults living in LTCFs. Many of the facilities face many challenges, including insufficient equipment and staff, absence of standards for infection diagnosis, complex needs of residents (34), staff members who work at more than one facility, untrained workers, and enforcement of quarantine (35). Several professional institutions including the WHO (36) and CDC (37) have drafted guidelines for the provision of infection in these facilities. The Ministry of Health, Labour, and Welfare of Japan recommended suspension or restriction on use of daycares, restriction of visits to LTCFs, and other related guidelines (38). Some efforts of the Centers for Medicare & Medicaid Services (CMS) in American LTCFs include funding teams of infection control experts during the first outbreak, direct reporting of new cases and deaths to the CDC, supplying Personal Protective Equipment (PPE), restricting visits, eliminating all group activities, implementing a new detection tool, recommending to state and local officials to

collaborate with facilities to allocate certain sites for positive cases, and advocating hospitals on mass testing for all older people (14).

Other measures discussed in Macron's statement in France were putting restrictions on nursing home visitations and prioritizing the care of older adults (39). The use of technologies such as Beam Robot 9 to minimize human-to-human contact in Singapore effectively prevented the spread of the virus in LTCFs (40). Weekly telephone calls with residents by volunteer students in the Telephone Outreach in the COVID-19 Outbreak (TOCO) program have brought social contact to older adults and students (41). Some additional offered solutions are frailty assessment using Clinical Frailty Scale (CFS), accurate morbidity and mortality reports, coordinated surveillance, and research around LTCFs and frail residents (42).

- Physical and mental consequences of self-isolation

The adverse effects of isolation may be felt by older people, especially those who already had a mental illness (43). Social isolation increases the prevalence of loneliness, dementia, delirium (44), and suicide (21), along with the changes in physical activity, drinking, and sleeping patterns (43).

Fear of death is related to a weakened immune system defensive response and increased susceptibility to disease (45). Some reports indicate that at first, COVID-19 may present atypical symptoms such as altered mental health in the absence of typical symptoms; thus, mental health findings related to COVID-19 should be considered (46). Models such as SAVE (socialization, adequate nutrition and protein supplementation, vitamin D, and exercise) have been shown to prevent frailty progression (47), as have recommendations of professional organizations such as the Chinese Society of Geriatric Psychiatry and Alzheimer's Disease(48), Australian Psychological Society (49), and Alzheimer's Disease International (50). Some of the potential consequences of isolation for older adults are lack of access to regular medication,

elder abuse, and the likelihood of increased hospitalization (51). Maintaining mental health to cope with stress is an important aspect in preventing suicide. The National Health Commission of China (NHC) and the American Association of Retired Persons (AARP) have designed steps to prevent suicide (52, 53). The UK and US governments have published guidelines to detect domestic abuse, track how and where it was reported, and provide a list of all available services (54,55).

- Neglect of Older adults, ageism and age discrimination

In the COVID-19 crisis, there are a number of ways older adults who would like to assist the humanitarian efforts to fight the pandemic can participate in doing so. These include participating in voluntary back-to-work programs for retired medical staff and in programs that assist in preparing PPE (56). Normally, older adults also take care of their grandchildren and support their employed children economically; however, older adults have been unable to partake in these responsibilities due to the pandemic (57). It appears that the negative assumptions and age-related stigma about older people (such as being vulnerable and frail against COVID-19) have resulted in the collapse of their prominent roles in a pandemic (58). Evidence of openly ageist discourses, the abandonment of older adults in LTCFs (59), media coverage about expensive care for older adults that portrays their mortality as less important than the mortality of other age groups, and age discrimination in providing health services in hospitals will very likely contribute to feelings of worthless and anxiety symptoms in older adults (60, 61). Undocumented mortality of older adults in France and ventilator allocation to younger adults according to US guidelines also indicates the perception of the deaths of older adults to be insignificant (62, 63). On March 29, Public Health England published guidelines to maintain a sense of belonging and good mental health in light of the ageist discourses around COVID-19 (64). Nevertheless, there is an urgent need to

fight age discrimination in delivering health services in every country (65). Following ethical guidelines such as the American Geriatrics Society recommendations could support older adults' rights (66).

Discussion

In our scoping review to identify the available evidence on challenges faced by older adults amidst the COVID-19 pandemic, 210 documents were included for analysis. The highest percentage of the articles were published in the Journal of the American Geriatrics Society (12.38%), were letters (20.95%), were from the US (38.09%), and were published in June 2020 (29.52%). The six themes presented above were extracted from the results of the documents. Despite efficient measures on supporting older adults, the increase in infection rates and mortality is undeniable.

In the absence of exclusive treatment or vaccine, each country should follow the available guidelines and monitor the adequate distribution of kits, medications, and ventilators. It is essential to include all age groups in care programs, respect the older adults and fight stigmatization and abuse, allocate equipment to LTCFs, screen all caregivers and visitors, cancel all in-person group activities, and monitor vital signs (14). Decision making on resource prioritization should be taken based on frailty stratification (66). Policy changes in the US including acts and guidelines focuses on supporting older adults and caregivers (67). Mass media's role is essential in public education and reinforcing collective intergenerational solidarity to avoid age discrimination (60).

Multidisciplinary teams should start free services for older adults living alone and who have chronic conditions (68). While telemedicine can be utilized to avoid human-to-human contact, older adults cannot use it, and many doctors are not accustomed to its application (8). Hence, there is a need for guidance, along with encouragement from government and rapid mobilization of teleconsultation platforms, in providing instructions

on the use of telehealth, e-health, and other virtual applications (69).

In pandemics, the shortage of resources and risk of infection among the workforce in LTCFs needs further policymaking. Fair salaries can encourage experts and staff to work in LTCFs and hospices (70). Compensational strategies to address PPE shortages, such as importing, reclaiming, reusing, and extending supply, should be considered to make effective use of PPE resources (71).

Visit restrictions are a more significant challenge for LTCFs residents. In this regard, a video call can be a suitable measure to maintain wellbeing by minimizing unnecessary exposure to the virus (72). Specific protocols and training can protect residents and staff in each country (73). Religious beliefs and practices are helpful in coping with stressful conditions and, in many studies, are associated with less anxiety (74).

Younger people can support older adults during isolation by delivering groceries, helping in daily activities, and working to keep them socially connected with educational technology (75). Online social and entertainment services can keep them physically and mentally active (65). Because the number of articles on COVID-19 has constantly been increasing, many studies conducted after June 2020 may be missed in our study. Other articles or guidelines may have been published in other languages or by different organizations and are not included in this article.

Conclusion

The studies discussed in this article highlighted the importance of older adults' issues and challenges during the COVID-19 pandemic and have suggested solutions for supporting them. Despite the adverse outcomes among older adults, very few interventional studies have been done in terms of extracted themes such as training older adults to work with smartphones and investigating the effects of video calls on mental health. Therefore, future research should also focus on implementing and evaluating

interventions to improve older adults' physical and mental health amidst the COVID-19 pandemic.

Further studies should also focus on the rights of older adults in issues related to COVID-19 to support decisions in allocating resources to different age groups. Implementing standard and evidence-based practice guidelines in nursing homes to protect residents and staff is crucial. Due to the increasing number of articles published on COVID-19, further reviews are needed to extend the knowledge on older adults' issues during the crisis.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interest

The authors declare that there is no conflict of interest.

References

1. WHO. Director-General's opening remarks at the media briefing on COVID 19 - 11 march 2020 (2020). Available from: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
2. Wilson N, Kvalsvig A, Barnard LT, Baker MG (2020). Case-fatality risk estimates for COVID-19 calculated by using a lag time for fatality. *Emerg Infect Dis*, 26(6):1339-1441.
3. Ioannidis JP, Axfors C, Contopoulos-Ioannidis DG (2020). Population-level COVID-19 mortality risk for non-elderly individuals overall and for non-elderly individuals without underlying diseases in pandemic epicenters. *Environ Res*, 188: 109890.
4. Doshmangir L, Mahbub Ahari A, Qolipour K, et al (2020). East Asia's Strategies for Effective Response to COVID-19: Lessons Learned for Iran. *Manag Strategy Health Syst*, 4(4):370-373 .
5. Naja F, Hamadeh R(2020). Nutrition amid the COVID-19 pandemic: a multi-level framework for action. *Eur J Clin Nutr*, 74(8):1117-1121 .
6. Holt NR, Neumann JT, McNeil JJ, Cheng AC, Unit HE, Prahan V(2020). Implications of COVID-19 in an ageing population. *Medical J Aust*, 1.
7. Taube E, Kristensson J, Sandberg M, Midlöv P, Jakobsson U (2015). Loneliness and health care consumption among older people. *Scand J Caring Sci*, 29(3):435-443 .
8. Rockwell KL, Gilroy AS (2020). Incorporating telemedicine as part of COVID-19 outbreak response systems. *Am J Manag Care*, 26(4):147-148 .
9. Arksey H, O'Malley L(2005). Scoping studies: towards a methodological framework. *Int J Soc Res Methodol*, 8(1):19-32 .
10. Tricco AC, Lillie E, Zarin W ,et al (2018). PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med*, 169(7):467-473 .
11. Wexler A, Dawson L, Long M, Freed M, Ramaswamy A, Ranji U (2020). The coronavirus aid, relief, and economic security act: Summary of key health provisions. Kaiser Family Foundation, April 9. Available from: <https://www.kff.org/coronavirus-covid-19/issue-brief/the-coronavirus-aid-relief-and-economic-security-act-summary-of-key-health-provisions/> (Accessed 7 July 2020)
12. Wilson TL, Scala-Foley M, Kunkel SR, Brewster AL(2020). Fast-track Innovation: Area Agencies on Aging Respond to the COVID-19 Pandemic. *J Aging Soc Policy*, 32(4-5):432-438.

13. Shuyi P (2020). Why France Failed to Contain the COVID-19 Pandemic . Available from: https://china-ccc.eu/working_papers/why-france-failed-to-contain-the-COVID-19-pandemic/. (Accessed 5 July 2020)
14. D'Adamo H, Yoshikawa T, Ouslander JG (2020). Coronavirus disease 2019 in geriatrics and longterm care: the ABCDs of COVID-19. *J Am Geriatr Soc*, 68(5):912-917 .
15. INTERNATIONAL MONETARY FUND (2020). POLICY RESPONSES TO COVID-19 . Available from: <https://www.imf.org/en/Topics/imf-and-COVID19/Policy-Responses-to-COVID-19>. (Accessed 5 July 2020)
16. Argentina.gob.ar (2020). COVID-19 Ministry of Health. Available from: <https://www.argentina.gob.ar/aplicaciones/coronavirus>. (Accessed 8 July 2020).
17. Merchant RA, Chen M, Ng S, Sandrasageran S, Wong B (2020). The Role of a Geriatrician has Become Even More Important in an Academic Institution during COVID-19. *J Nutr Health Aging*, 13:1-2.
18. Chhetri JK, Chan P, Arai H, et al (2020). Prevention of COVID-19 in older adults: A brief guidance from the International Association for Gerontology and Geriatrics (IAGG) Asia/Oceania Region. *J Nutr Health Aging*, 14: 1-2 .
19. GOV. UK (2020). Guidance on shielding and protecting people who are clinically extremely vulnerable from COVID-19. Available from: <https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-COVID-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-COVID-19>. (Accessed 8 July 2020).
20. Zubatsky M, Berg-Weger M, Morley J (2020). Using Telehealth Groups to Combat Loneliness in Older Adults Through COVID-19. *J Am Geriatr Soc*, 68(8): 1678-1679.
21. de Leo D, Trabucchi M (2020). COVID-19 and the Fears of Italian Senior Citizens . *International Int J Environ Res Public Health*, 17(10):3572 .
22. Gerke, S., Stern, A. D., & Minssen, T. (2020). Germany's digital health reforms in the COVID-19 era: lessons and opportunities for other countries. *NPJ Digit Med*, 3(1), 1-6.
23. Hollander JE, Carr BG (2020). Virtually perfect? Telemedicine for COVID-19. *N Engl J Med*, 382(18):1679-1681 .
24. Loeb AE, Rao SS, Ficke JR, Morris CD, Riley III LH, Levin AS (2020). Departmental experience and lessons learned with accelerated introduction of telemedicine during the COVID-19 crisis. *J Am Acad Orthop Surg*, 1;28(11):e469-e476.
25. Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020. Public Law. No. 116–123, 134 Stat .146: Available from: <https://www.congress.gov/116/plaws/publ123/PLAW-116publ123.pdf>. (Accessed 15 July 2020).
26. Hargittai E, Piper A. M, Morris M. R (2019). From internet access to internet skills: digital inequality among older adults. *Univers Access Inf Soc*, 18(4), 881-890.
27. Towle M (2020). Our Elderly and COVID-19: What to Know, What to Do and How to Help At-Risk Seniors During the Coronavirus Outbreak: marin magazine; Available from: <https://marinmagazine.com/community/how-to-protect-older-adults-in-our-community/>. (Accessed 15 July 2020).
28. Chiara (2020). PHM Korea: statement on COVID-19 outbreak and responses in South Korea. Available from: <https://phmovement.org/phm-korea-statement-on-COVID-19-outbreak-and-responses-in-south-korea/>. (Accessed 15 July 2020).
29. Business Insider (2020). China took at least 12 strict measures to control the coronavirus. They could work for the US, but would likely be impossible to implement . Available from: <https://www.businessinsider.com/chinas-coronavirus-quarantines-other-countries-arent-ready-2020-3>. (Accessed 5 July 2020).
30. Hoffman, G. J. Webster, N. J. Bynum, J. P. W (2020). A Framework for Aging-Friendly Services and Supports in the Age of COVID-19. *J Aging Soc Policy*. 32(4-5):450-459.
31. Government of Canada (2020). Canada's COVID-19 Economic Response Plan –

- Overview. 2020. Available from: <https://www.canada.ca/en/department-finance/economic-response-plan/fiscal-summary.html> (Accessed 6 July 2020).
32. Gostin LO, Hodge JG (2020). US emergency legal responses to novel coronavirus: balancing public health and civil liberties. *JAMA*, 323(12):1131-1132 .
 33. Anderson RM, Heesterbeek H, Klinkenberg D, Hollingsworth TD (2020). How will country-based mitigation measures influence the course of the COVID-19 epidemic? *Lancet*, 395(10228):931-934 .
 34. Rajan S, Mckee M (2020). Learning from the impacts of COVID-19 on care homes: a pilot survey. LTCcovid, International Long-Term Care Policy Network, CPEC-LSE. 9 June 2020. Available from: https://ltccovid.org/wp-content/uploads/2020/06/Learning-from-the-Impact-of-COVID-on-care-homes-in-England_a-pilot-study_Srajan_.pdf. (Accessed 5 June 2020)
 35. Fahed M, Barron GC, Steffens DC (2020). Ethical and Logistical Considerations of Caring for Older Adults on Inpatient Psychiatry During the COVID-19 Pandemic. *Am J Geriatr Psychiatry*, 28(8): 829-834.
 36. WHO (2020). Infection Prevention and Control guidance for Long-Term Care Facilities in the context of COVID-19. Available from: https://apps.who.int/iris/bitstream/handle/10665/331508/WHO-2019-nCoV-IPC_long_term_care-2020.1-eng.pdf (Accessed 21 March 2020)
 37. CDC(2020). Preparing for COVID-19 in Nursing Homes. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/long-term-care.html> (Accessed 5 June 2020).
 38. Prime Minister of Japan and His Cabinet(2020). Government Responses on the Coronavirus Disease 2019. Available from: <http://japan.kantei.go.jp/index.html> (Accessed 2 June 2020).
 39. Jiménez-Pavón D, Carbonell-Baeza A, Lavie CJ (2020). Physical exercise as therapy to fight against the mental and physical consequences of COVID-19 quarantine: Special focus in older people. *Prog Cardiovasc Dis*, 63(3): 386–388
 40. Tan LF, Seetharaman S (2020). Preventing the Spread of COVID-19 to Nursing Homes: Experience from a Singapore Geriatric Centre. *J Am Geriatr Soc*, 68(5):942 .
 41. van Dyck LI, Wilkins KM, Ouellet J, Ouellet GM, Conroy ML(2020). Combating Heightened Social Isolation of Nursing Home Elders: The Telephone Outreach in the COVID-19 Outbreak Program. *Am J Geriatr Psychiatry*, 28(9):989-992.
 42. Andrew M, Searle SD, McElhaney JE, et al (2020). COVID-19, frailty and long-term care :Implications for policy and practice. *J Infect Dev Ctries*, 14(5):428-432.
 43. Wand APF, Zhong BL, Chiu HFK, Draper B, De Leo D (2020). COVID-19: the implications for suicide in older adults. *Int Psychogeriatr*, 32(10):1225-1230
 44. O'Hanlon S, Inouye SK (2020). Delirium: a missing piece in the COVID-19 pandemic puzzle. *Age Ageing*, 49(4): 497-498.
 45. Coughlin SS (2012). Anxiety and depression: linkages with viral diseases. *Public Health Rev*, 34:7 .
 46. Isaia G, Marinello R, Tibaldi V, Tamone C, Bo M (2020). Atypical presentation of Covid-19 in an older adult with severe alzheimer disease. *Am J Geriatr Psychiatry*, 28(7):790-791 .
 47. Boreskie KF ,Hay JL, Duhamel TA (2020). Preventing Frailty Progression during the COVID-19 Pandemic. *J Frailty Aging*, 6: 1-3.
 48. Wang H, Li T, Barbarino P, et al (2020). Dementia care during COVID-19. *Lancet*, 395(10231):1190-1191.
 49. Australian Pshychological Scociety (2020). Coronavirus (COVID-19) Anxiety and Staying Mentally Healthy for Older Adults. Available from: https://www.psychology.org.au/getmedia/5f9cc6d4-ad5c-4b02-8b7f-d4153cb2ba2b/20APS-IS-COVID-19-Public-Older-adults_1.pdf. (Accessed 9 July 2020).
 50. Alzheimer's Disease international (2020). ADI offers advice and support during COVID-19. Available from: <https://www.alz.co.uk/news/adi-offers-advice-and-support-during-COVID-19>. (Accessed 8 July 2020).

51. Okolie C, Dennis M, Thomas E. S, &John A (2017). A systematic review of interventions to prevent suicidal behaviors and reduce suicidal ideation in older people. *Int psychogeriatr*, 29(11): 1801-1824 .
52. Li W, Yang Y, Liu Z-H, et al (2020). Progression of Mental Health Services during the COVID-19 Outbreak in China. *Int J Biol Sci*, 16(10):1732-1738.
53. Roy J, Jain R, Golamari R, Vunnam R, Sahu N(2020). COVID-19 in the geriatric population. *Int J Geriatr Psychiatry*, 10.1002/gps.5389.
54. age UK (2020). Age UK Advice Line. Available from: <https://www.ageuk.org.uk/services/age-uk-advice-line/>. (Accessed 10 July 2020).
55. Piquero AR, Riddell JR, Bishopp SA, Narvey C, Reid JA, Piquero NL (2020). Staying Home, Staying Safe? A Short-Term Analysis of COVID-19 on Dallas Domestic Violence. *Am J Crim Justice*, 14:1-35.
56. McNamara TK, Gonzales E (2011). Volunteer transitions among older adults: The role of human, social, and cultural capital in later life. *J Gerontol B Psychol Sci Soc Sci*, 66(4):490-501.
57. Petretto DR, Pili R (2020). Ageing and COVID-19: What is the Role for Elderly People? *Geriatrics (Basel)*, 5(2): 25.
58. Monahan, C, Macdonald J, Lytle A, Apriceno M, Levy S. R (2020). COVID-19 and ageism: How positive and negative responses impact older adults and society. *Am Psychol*, 75(7): 887-896.
59. Goodman-Casanova JM, Dura-Perez E, Guzman-Parra J, Cuesta-Vargas A, Mayoral-Cleries F (2020). Telehealth Home Support During COVID-19 Confinement for Community-Dwelling Older Adults With Mild Cognitive Impairment or Mild Dementia: Survey Study. *J Med Internet Res*, 22(5): e19434.
60. Lloyd-Sherlock PG, Kalache A, McKee M, Derbyshire J, Geffen L, Casas FG (2020). WHO must prioritise the needs of older people in its response to the covid-19 pandemic. *BMJ*, 368:m1164.
61. Bergman YS, Cohen-Fridel S, Shrira A, Bodner E, Palgi Y (2020). COVID-19 health worries and anxiety symptoms among older adults: the moderating role of ageism. *Int Psychogeriatr*, 1-5.
62. Fraser S, Lagacé M, Bongué B, et al (2020). Ageism and COVID-19: What does our society's response say about us? *Age Ageing*, 49(5): 692-695
63. Grover S, McClelland A, Furnham, A (2020). Preferences for scarce medical resource allocation: Differences between experts and the general public and implications for the COVID-19 pandemic. *Br J Health Psychol*, 20: e12439.
64. Public Health England (2020). Guidance for the public on the mental health and wellbeing aspects of coronavirus (COVID-19) England. Available from: <https://www.gov.uk/government/publications/covid-19-guidance-for-the-public-on-mental-health-and-wellbeing/guidance-for-the-public-on-the-mental-health-and-wellbeing-aspects-of-coronavirus-covid-19> (Accessed 10 July 2020).
65. Brooke J, Jackson D (2020). Older people and COVID-19: Isolation, risk and ageism. *J Clin Nurs*, 29(13-14): 2044-2046.
66. Farrell TW, Ferrante LE, Brown T, et al (2020). AGS Position Statement: Resource Allocation Strategies and Age-Related Considerations in the COVID-19 Era and Beyond. *J Am Geriatr Soc* 68(6):1136-1142.
67. Young HM, Quinn W, Brassard A, Gualtieri C, Reinhard S (2020). COVID-19 Pandemic Spurs Policy Changes Benefiting Older Adults. *J Gerontol Nurs*, 46(6):19-23.
68. Ilgaz A, Gözüm S (2019). Health promotion interventions for older people living alone: a systematic review. *Perspect Public Health*, 139(5):255-263 .
69. Jnr BA (2020). Use of Telemedicine and Virtual Care for Remote Treatment in Response to COVID-19 Pandemic. *J Med Syst*, 44(7): 132.
70. Society AG (2020). American Geriatrics Society Policy Brief: COVID-19 and Nursing Homes. *J Am Geriatr Soc*, 68(5):908-911 .
71. Nathavitharana RR, Patel PK, Tierney DB, et al (2020). Innovation and Knowledge Sharing Can Transform COVID-19 Infection Prevention Response. *J Hosp Med*, 15(5):299-301 .
72. Dobbs D, Peterson L, Hyer K (2020). The Unique Challenges Faced by Assisted Living

- Communities to Meet Federal Guidelines for COVID-19. *J Aging Soc Policy*, 32(4-5): 334-342.
73. Gardner W, States D, Bagley N (2020). The coronavirus and the risks to the elderly in long-term care. *J Aging Soc Policy*, 32(4-5):310-315.
74. Koenig HG (2020). Ways of protecting religious older adults from the consequences of COVID-19. *Am J Geriatr Psychiatry*, 28(7):776-779.
75. Joosten-Hagye D, Katz A, Sivers-Teixeira T, Yonshiro-Cho J (2020). Age-friendly student senior connection: students' experience in an interprofessional pilot program to combat loneliness and isolation among older adults during the COVID-19 pandemic. *J Interprof Care*, 34(5):668-671.