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# COVID-19 and Vulnerable Population With Communication Disorders



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The coronavirus disease 2019 (COVID-19) pandemic caused by the novel coronavirus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has caused an unprecedented disruption in all aspects of social, economic, and political order all across the world. Health care systems across all nations have been stressed. Allocation of health resources based on the values of maximizing the benefits produced by scarce resources, treating people equally, and giving priority to the worst off is an urgent need of the hour. As we all struggle to weather this crisis and try to find a new norm it is imperative to safeguard the rights and welfare of a highly vulnerable population of people with communication disorders.

The Lancet Commission to address the global hearing loss (HL) noted that in 2015 there were 500 million people living with disabling HL, comprising about 6.8% of the world's population.<sup>1</sup> In the United States, the prevalence of HL is estimated to be 15% with up to 50% of people older than 70 years of age reporting disabling hearing loss. Hearing loss and communication disorders pose unique challenges to people at different age groups. In the following we review these challenges in the context of ongoing COVID-19 pandemic.

## CHILDREN LIVING WITH HEARING LOSS

According to the World Health Organization there are more than 34 million children living with HL globally. The vast majority of these children live in developing countries. The challenges with HL faced by children to a large extent are determined by the socioeconomic status of the country in which they live. With the pandemic unfolding across the globe, children with

HL are facing short term and long term challenges. Acutely, given the turmoil in daily life, such children are at increased risk of trauma, physical neglect, and malnourishment. In the long run the risks include delayed social development, poor self-esteem, academic underachievement with declining literacy, and mental health disorders such as feelings of anger, loneliness, and depression. It is the responsibility of the governments and local jurisdictions to ensure the rights and welfare of these children by ensuring safety, food, shelter, and meeting medical needs. This is imperative not only from the humane perspective but also from socioeconomic viewpoint as the cost of rehabilitation and reintegration post pandemic will be enormous if timely interventions are not taken.

In the developed world children with prelingual HL are at the greatest risk. Technological advances in video and telecommunication can ensure that such children have access to necessary speech and language pathology expertise to ensure that their development progresses uninterrupted. Distance learning technologies must have features to support children with HL. For children with postlingual HL it is important for parents to work with local education departments to ensure children have continued access to resources such as sign language and special education programs tailored to the children's needs. Mental health counseling should be readily available to help children and their families to cope with this difficult time.

## ADULTS WITH HEARING LOSS

The vast majority of adults with HL are older than 70 years of age. This is a particularly vulnerable population who also have



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significant coexisting comorbidities such as incident dementia, and cognitive and physical decline, all of which result in social isolation, poor community support and increased risk of falls.<sup>2,3</sup> Furthermore, adults with HL have higher burden of chronic illnesses such as obesity, heart disease, and diabetes compared with normal hearing people.<sup>4</sup> Communication of correct information is key for coordinated and effective response to the pandemic. People with HL have communication challenges unique to their circumstances. Some people with HL rely on lip reading and may not be able to understand and converse properly with the increasing use of facial masks. People who are deaf from birth or early childhood may struggle with limited vocabulary. Misinformation (or misunderstanding) and/or cognitive overload puts these vulnerable people at greater risk of physical and psychological harm than other members of the society. Medical practices are rapidly adapting to the challenge in ways to limit the spread of infection. Consequently, people with HL may not have access to in-person sign language interpreters and the caregivers and loved ones may not be able to accompany them on essential doctor visits. Several practices are turning to audiovisual technologies to continue to cater to the needs of patients. People with HL and other communication disorders face unique challenges in these situations. Cognitive and learning issues are considerable barriers to access these technologies. Even if able to access, the challenges of carrying on communication distantly can be frustrating and add to the pre-existing anxiety, loneliness, and vulnerability.

Social distancing, limiting physical contact, and hand hygiene is the most important defenses against SARS-CoV-2. With an already higher prevalence of loneliness, elderly patients with HL are at risk of worsening cognitive decline and depression. They are also at risk of limited access to essential supplies of daily living due to increased prevalence of mobility disorders and physical decline and expected decline in community support with social distancing.

As pharmacies are trying to tackle the growing drug and medical supply shortages, access to necessary medications and supplies such as hearing aid batteries can be very challenging for patients with HL. Grocery, general stores, and pharmacies can help out by reserving certain hours in the day for people with disabilities so that they can tend to their needs without heightened insecurity and anxiety.

In collaboration with hospital and practice information and audiovisual technology experts, audiologists and otolaryngologists can play a critical role in advocating for and helping address the challenges faced by people with HL and other communication disorders. Measures such as video remote interpreting, captioning, and speech-to-text applications can go a long way to help individuals with HL deal with this challenging time. Educating family members and loved ones on the enhanced need to stay in touch with their relatives with HL is critical to ensure emotional, social, and psychological well-being.

As the pandemic is protracted, these vulnerabilities are likely to get worse over time. Furthermore, in the postpandemic period when everybody is rushing to get back to “normal,” this vulnerable population will be at risk of neglect and slow and prolonged recovery. While these challenges are significant and daunting, we remain optimistic that, with proactive planning and advocacy and the spirit of call to duty and beneficence, we can protect and promote the rights and welfare of our vulnerable population.

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#### REFERENCES

1. Wilson BS, Tucci DL, O'Donoghue GM, Merson MH, Frankish H. A Lancet Commission to address the global burden of hearing loss. *Lancet*. 2019;393(10186):2106-2108.

2. Castiglione A, Benatti A, Velardita C, Favaro D, Padoan E, Severi D, et al. Aging, cognitive decline and hearing loss: effects of auditory rehabilitation and training with hearing aids and cochlear implants on cognitive function and depression among older adults. *Audiol Neurootol*. 2016; 21(Suppl 1):21-28.
3. Lin FR, Yaffe K, Xia J, Xue Q-L, Harris TB, Purchase-Helzner E, et al. Hearing loss and cognitive decline in older adults. *JAMA Intern Med*. 2013;173(4):293-299.
4. Hu H, Tomita K, Kuwahara K, Yamamoto M, Uehara A, Kochi T, et al. Obesity and risk of hearing loss: a prospective cohort study. *Clin Nutr*. 2020;39(3):870-875.