Listening to Sounds of Gratitude

With its unrelenting demands on our time, talent, and treasure, the arduous academic journey and personal sacrifices necessary to become a medical doctor are well known within the medical profession. Both the odyssey and the crucible of medical training refine our thoughts and character and forge such strong bonds and respect among our colleagues; it is the tie that binds. From myriad paths and backgrounds, we arrive at our status as physicians to form a team tenaciously dedicated to the health care needs of our patients. For some, the personal journey was predictable and smooth; for others, it was, and remains, a daily challenge.

In this issue of Mayo Clinic Proceedings, Sher1 relates his life story of experiencing, enduring, and overcoming many challenges in becoming a practicing physician in the United States (ie, bilateral hearing loss, educational and economic struggles, immigrating to America, learning English as a second language, and repeating medical education). The daily struggle continues, and his perspective should resonate with many readers who may share his immigrant background, educational struggles, and/or hearing loss. And, it should enlighten and broaden the awareness of those who do not.

Particularly poignant are the portrayals of punishment (ie, hearing aids removed and damaged by a classroom teacher) and psychological stress (ie, both academic and social bullying) borne during prepubescence. Yet, with early assessment, surgery, hearing aids, a better educational setting, and the support and resources (and sacrifices) of his parents, extended family, and supportive educators, these challenges were identified and addressed.

These hearing loss–related challenges continue today (eg, on-call pager while sleeping, stethoscope use, communication in various suboptimal settings, and universal masking and social distancing during the coronavirus disease 2019 [COVID-19] pandemic). In sharing his story, Sher reports that with early and effective interventions and persistent efforts, the functional, social, emotional, and economic impacts of hearing loss were prevented and/or ameliorated.

The World Health Organization fact sheet on deafness and hearing loss2 describes the various negative impacts of hearing loss: functional impact (ie, delayed communication skill development and negative academic performance), social impact (ie, difficulty with and exclusion from social communication, especially in disadvantageous settings), emotional impact (ie, loneliness, isolation, and frustration, particularly in older individuals), and economic impact (viz, estimated global costs of US$7.5 trillion associated with health, educational, and societal sectors and loss of productivity due to under- or uneducated children and under- or unemployed adults).

The World Health Organization’s launch of the World Report on Hearing on World Hearing Day 2021 (March 3, 2021)3 represents a global call to action to both policymakers and the general public to identify and address hearing loss and ear diseases across the life course.

More than 5% of the world’s population—or 466 million people—have disabling hearing loss (432 million adults and 34 million children). It is estimated that by 2050 more than 900 million people—or 1 in every 10 people—will have disabling hearing loss—defined as hearing loss greater than 40 dB in the better hearing ear in adults and a hearing loss greater than 30 dB in the better hearing ear in children.2 Approximately 14.1% of American adults (27.7 million) 18 years and older report some difficulty hearing.4 For 60- to 69-year-old individuals, the prevalence of hearing loss affecting speech intelligibility was 39.3%.4 In children younger than 15 years, 60% of hearing loss is attributable to preventable causes, though the figure is
higher in low- and middle-income countries (75%) than in high-income countries (49%).\(^2\) Prevention of hearing loss heavily depends on public health measures, particularly in low- and middle-income countries, to address infections (mumps/measles/rubella, cytomegalovirus, and chronic otitis media; 31%), birth-related complications (asphyxia, low birth weight, prematurity, and jaundice; 17%), ototoxic medications in mothers and babies (4%), and others (8%).\(^2\)

Because of mumps at an early age, I have experienced similar educational struggles and professional challenges. With the help of supportive parents, specialists, hearing aids, and the creation of a better educational setting, these early interventions were effective in changing the life course of young students with hearing loss—like me and my classmates—who, rather than being sent off to state schools for the deaf, were able to remain home with their families and attend their local schools. This required my father joining the local municipal school board during the early 1970s and advocating a policy change offering specialized education and mainstreamed classes for young students with hearing loss. In my high school graduation class, there were 7 classmates with hearing loss who had attended local schools from prekindergarten through high school. We were the inaugural wave of mainstreamed students with hearing loss—each with his or her own individualized education plan and supportive resources. Now, all are leading successful and independent lives; and 6 have advanced degrees (masters, doctorates, or higher) in their chosen profession.

Similarly, credit for the success of my professional career must be shared with my mentors who recognized the challenges and supported my efforts to overcome them. One of my anatomy professors prodded me to take the initiative and solve the problems I faced in finding a stethoscope that would work for me. “God helps those who help themselves,” he said. In the 1990s, amplified stethoscopes were rare and rather underpowered for my needs. Indeed, necessity is the mother of invention, and the need to hear faint and/or high-frequency tones led to my partnership with a skilled audiologist and the creation of one of the first high-powered amplified stethoscopes,\(^3\) which allowed me to capably hear heart tones and pulmonary sounds. I was not the only beneficiary, either. During my training and internship, my patients with hearing loss also appreciated borrowing my amplified stethoscope to hear me or my attending better (as they had forgotten their hearing aids at home). During residency in the late 1990s, it became apparent that face masking was impairing speech comprehension in the surgical environment. During some of my darkest days of training, my residency program director reminded me that “It’s okay to ask for help—we are not supposed to endure challenges alone.” He and I unsuccessfully attempted to fashion a medical grade see-through mask with clear thermally molded plastics. The effort, nonetheless, lifted my spirits. Later, a frequency modulation-based system was used to reduce sound attenuation due to distancing and minimize the impact of environmental noises in both the classroom and the operating room environment.\(^2\) However, with the universal masking and social distancing policies during the current COVID-19 pandemic, transparent surgical face masks or hybrid face masks with clear windows are now available to aid lip-reading and communication. Another residency mentor and I were able to bring leading equipment manufacturers to our institution to assess the computer-generated tones emitted by various phacoemulsification machine consoles used during cataract surgery. The phacoemulsification machine we were using at the time did not generate a tone during ultrasound delivery. As a result, the industry became better aware of the need for any cataract surgeon with hearing loss to select and adjust the appropriate supplemental, low-frequency, console-generated tones produced, so the various signals indicating foot pedal position, fluidic performance, and ultrasonic delivery during surgery were audible.\(^5\) These console-generated tones improved both surgeon comfort and patient safety and are now standard on phacoemulsification platforms.
In many ways things are better now than they were decades ago. Educational courses (with captioning and/or transcripts) are now available online. Texting, e-mails, and secure electronic health record portal messages are replacing phone calls, pagers, and public address systems. Telephone headsets and cell phones are now hearing aid compatible. With Internet access, information and resources are instantly available. Each of these achievements required countless hours of advocacy and effort by so many—but, there is still work to be done.

Health care professionals should recognize that with the loss of visual cues (ie, lip-reading) and support systems (eg, family members), current COVID-19 policies such as universal masking, social distancing, and unaccompanied patients may “unmask” substantial hearing loss–related issues for patients that previously had been diminished or ignored. Health care professionals should also recognize that they, and their fellow colleagues, may also be experiencing these same challenges. These challenges can, and should, be addressed. Sher’s testimony of resilience, self-initiative, and agency should inspire patients, parents, educators, medical professionals, other leaders and policymakers while reminding us all that we need the help of others to succeed and that “it is okay to ask for help—we are not supposed to endure challenges alone.” Regardless of capacity, we should resolve to help others with hearing loss whenever and however we can; and we should remember that kindness is a language that the deaf can hear and the blind can see.

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