# Editorial

## Hearing the silent: The implications of hearing loss in medicine

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Disparities within our healthcare system are well documented within current literature, however, individuals with hearing impairments are one population frequently overlooked. Hearing loss can be viewed as a tiered trajectory following an echelon pattern of disability contingent on the decibel range within which an individual is able to audibly hear. This spectrum typically moves within standardized parameters encompassing mild, moderate and severe hearing loss before culminating in profound or complete loss throughout a specified decibel range.[1,2] Hearing loss is further typified as conductive, sensorineural, or mixed, contingent on the anatomical origins of loss and each presenting with its own unique barriers to hearing and communication and, by extension, education.[1–3]

Hearing impairment in medicine is a unique topic as there is a significant body of literature examining the experiences of patients with hearing loss, typically older adults, on patient-provider interactions and the oft negative implications this poses.[4–7] These studies further delineate an important distinction between those who are hard of hearing from a young age and those with age-related loss as members of the former group often have well-developed coping strategies and improved comprehension of their hearing loss and limitations. Interestingly, the experiences of medical students and physicians with hearing loss is a poorly explored topic with the majority of extant literature resulting from recent shared individual experiences and anecdotal evidence.[2,3,8–10]

Several authors have presented their personal challenges navigating the medical field as students with a hearing impairment, identifying several key themes presented across these self-narratives. The impacts of background noise, ineffective positioning of the presenter or speaker, lack of understanding and insensitivity toward the disability have all been among the prevalent issues described.[3,8,10] Medical students with hearing impairments are often placed in environments, such as noisy lecture halls or clinical wards, where various factors that aid hearing are compromised.[8] One medical student commented on experienced difficulties associated with the acoustic feedback and sound distortion caused by lecture hall auditory systems while wearing hearing aids.[3] A second discussed difficulties in small group-based settings because of the overlapping discussions taking place rendering it difficult to focus.[10] A third student described their experience attending a psychiatry assessment behind a one-way mirror in which she was unable to comprehend the conversation as the patient was facing the opposite direction. The same student also recounted her exposure to discrimination from those who mistook her inability to hear as lackadaisical inattentivenesss.[8] These incredibly frustrating experiences provide real world examples of challenges encountered daily by hearing impaired medical learners as they attempt to navigate the complexities of medical education.

The onset of the COVID19 pandemic in early 2020 brought entirely new issues to the forefront for medical students with hearing loss, secondary to the widespread use of surgical masks, creating additional barriers to hearing, communication and learning.[3,9] These practices, while necessary for personal protection, have further limited effective communication for these individuals through the elimination of visual cues crucial for lip reading; a strategy relied upon by a significant proportion of this population.[2,11] The use of virtual lectures has further limited medical education for those with hearing impairment as the use of recorded slides and audio-only lectures further diminishes the ability to correctly interpret relayed concepts.[10]

Jawadi (2022) described various technological advancements that aid medical learners with hearing impairments in clinical and didactic settings, such as the use of hearing aids, Bluetooth microphone/FM systems, clear face masks, sound amplification devices and automatic captioning software.[10] Additionally, the development of electronic stethoscopes which amplify cardiac and respiratory sounds has been a major development that allows those unable to use traditional devices to effectively conduct clinical examinations. Equivocally, these modalities are also imperfect as significant time, energy, and often finances, are committed to finding and managing these technologies, which may also prove to be logistically challenging.[3,10] For example, the use of an electronic stethoscope, though revolutionary, is also associated with significant feedback and static from slight movements against the listening surface. While these modalities are flawed, they have also been described as empowering, allowing

hearing impaired medical students to take control over their hearing loss and access to education in a world designed for people without hearing loss.[10]

The issue of hearing impairment in medical education is particularly near and dear to my heart as a medical student with severe hearing loss sloping towards profound in the upper frequencies. Those close to me know that I use my hearing impairment as a motivator and choose to challenge myself rather than be hindered, however, many of the difficulties shared by my hearing-impaired colleagues impact me daily as well. One of the hardest parts of starting medical school during a global pandemic, aside from the inability to read lips through the mandated masks, was the uncertainty around whether I would be able to functionally utilize a standard stethoscope. Inevitably, I discovered I could not and enlisted the use of a digital stethoscope which has allowed me to be on par with those using standardized devices. Despite this, my hearing loss certainly had me favouring career paths in which stethoscopes were not essential for practice.

In the classroom setting, I always elected to sit in the front row as to ensure that I would not miss any pertinent information relayed by the instructors. I was relieved when instructors were allowed to remove masks while lecturing, however, when they chose not to it created an entirely new sense of distress not being able to read lips – a technique I rely heavily upon for communication. Further difficulties arise in the operating room, such as when a hearing aid battery dies while scrubbed in the middle of a surgical case, or when the surgeon speaks too softly to be heard amid the background noise of various surgical tools. While I am no stranger to advocating for myself, these are issues that are rarely discussed and can make an incredibly frustrating learning environment for those with hearing loss such as myself.

Hearing impairment cannot be viewed as a homogenous concept, but rather is a unique experience affecting those afflicted in various ways, such that respecting individual differences is paramount. Despite this, there are various universal strategies clinicians and medical educators can implement to ensure effective and inclusive education for those with hearing impairments as seemingly small changes in communication can be transformational. It is important for medical educators to recognize the reliance on visual cues and lip reading for hearing impaired students and avoid covering their mouths or to use clear face masks where possible in required settings. Speak clearly, at a normal pace and pitch and turn to face the learner when speaking – educators should avoid raising their voice to repeat the message as this can often be perceived as patronizing.[8] Further, students with hearing impairments should be positioned to see the face of the lecturer in classroom settings or be seated facing the patient during consultations. Finally, accommodating students with hearing impairment in regard to technologies necessary for their successes in a non-judgemental and open manner is crucial to effective and equitable medical education.

The silence on deafness will not be broken overnight, however, with recognition of these issues and continued advocation we can identify and discourage disparities affecting medical students with hearing loss in ensuring equitable medical education.

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