Emergency Department Challenges for the Deaf and Hard of Hearing Population

By Gordon Glantz

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The already stressful situation of being a patient in an emergency department (ED) of a hospital, coupled with additional communication roadblocks—such as being of the deaf and hard of hearing (DHH) population (around 15%, according to the NIH, with more than half of those older than 75, according to the Mayo Clinic)—makes for a tinderbox of tension.

And, even though statistics show that DHH patients are more likely to seek ED care, the scenario is understudied.

In 2022, in the aftermath of the COVID epidemic that further stressed and stretched EDs, a group of researchers sought answers set forth in a study originally published in *Academic Emergency Medicine* titled "Emergency department condition acuity, length of stay, and revisits among deaf and hard-of-hearing patients: A retrospective chart review."

Tyler G. James, PhD, MCHES

Tyler G. James, PhD, MCHES, was a lead author of the study.

"The COVID-19 pandemic has had an irreversible and immeasurable impact on the health and social system, and how people with disabilities—including DHH people—interact in those systems," said the 2023 Davenport Scholar. "It is well recognized that the quality of medical care for people with disabilities was lesser than non-disabled people during the primary surges—with several leading medical ethicists discussing rationing of care."

James mentioned the elephant in the room: primary care shortages and closures of safety net hospitals and critical access EDs. He also mentioned the recurrence of SARS-CoV-2 (COVID-19) infections and the uninvestigated medical needs of COVID long-haulers.

"The disparities seen pre-COVID have only been exacerbated by the COVID-19 pandemic, government's inadequate response to the pandemic, and misallocation of funding at the governmental and health care organization levels," he said.

NUTS AND BOLTS

The stated objective of this research was that DHH patients were not only understudied, but that theory and limited evidence indicated that these patients were "at higher risk of emergency department (ED) utilization and poorer quality of care."

James explained that the methodology involved a retrospective analysis of data in patient's electronic health records at a single, large academic medical center in North Central Florida, working with a data manager who was able to extract the data.

The primary variables of interest were of deaf and hard-of-hearing status, which was defined using ICD diagnostic codes related to hearing loss and language identifiers of American Sign Language or English.

Said James, noting the small sample size, relative to the groups: "The data manager extracted 100% of DHH ASL-users and an age-matched random sample of 1,000 DHH English-speakers and 1,000 non-DHH (hearing) English-speakers."

This research—one of the first epidemiological studies looking at differences in ED patient care factors (specifically, condition acuity, length of stay, and revisits) among DHH patients—found that, when compared to non-DHH English-speakers (i.e., hearing people):

1. There were no differences in Emergency Severity Index—a classification system to indicate resource need and acuity in the ED.
2. There were no differences in triage pain score, a finding which surprised James, who noted the area needs further study.
3. DHH ASL-using patients had longer lengths of stay in the emergency department, when controlling for encounter-level characteristics (e.g., pain score at triage, number of people in the ED, insured status, and other demographics).

Gordon Glantz is a medical freelance writer.

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James explained the study used a multi-level modeling approach to analyze our data. These models can identify the amount of variability at different levels of the data. For us, encounter-level data (e.g., ED outcomes, pain score) were nested in patient-level data (e.g., DHH status, gender, race).

"Something that is important—to me—is the amount of variability at the patient-level," said James. "Across our outcomes, the intraclass correlation coefficient was around 0.21-0.24. This means that only around 20-25% of the variability in ED outcomes are explained at the patient-level—and most of the variability is explained at the encounter-level, which may include ED-related organization and operation variables."

SKIN IN THE GAME

Behind all the data, there is a personal story as to why this became a life's calling for James.

He has skin in the game.

"Both of my parents are DHH," he explained. "My mom from scarlet fever as a toddler, and my dad from occupational exposure in the military. Neither use ASL. I also have a cousin who is culturally Deaf, attended a Deaf school, and uses ASL."

As an undergraduate studying at the University of Florida (approximately 2014-2017), James became involved in local Deaf communities throughout Florida.

"During this time, I became close to several Deaf community members who educated me on the health disparities experienced by DHH people who use ASL to communicate," he said.

Then, in 2017, a close friend and mentor who was culturally Deaf felt like he was having a second heart attack and had to wait for Video Remote Interpreting ("an iPad on wheels") for more than 5 hours.

"The system wouldn't connect, and it would take an additional 3 hours for an interpreter to arrive," he said. "This led to my career goal: To represent the experiences of people with sensory disabilities in the health care system, and work to define the contours of how ableism—and its subforms, such as audism—penetrates the medical system."

While an early PhD student in 2017, James met Dr. Michael McKee, a deaf physician and a close collaborator at the University of Michigan, who encouraged him in his career pursuits.

James' first publication on the DHH ED experienced was focused on communication. This work influenced his dissertation study, which was to develop a conceptual model of ED utilization and care delivery focused on DHH-related factors.

James said, "My dissertation was funded by the Agency for Healthcare Research and Quality. I applied a mixed methods approach to analyze electronic health record data and also collect qualitative data to better understand ED care delivery for DHH people."

POSITIVE RESPONSE

Jeffrey Kline, MD, of Wayne State University is the Editor-In-Chief of *Academic Emergency Medicine*, the journal that published this study, although he was not involved in this particular study's research.


Jeffrey Kline, MD

Although he has no direct background in disparities or the condition of DHH patients, he does have some experience from his career in ED care. Kline noted that his training was as an emergency physician with research expertise in diagnosis of blood clots.

"As a side note, I spent 10 years practicing emergency medicine in Indianapolis, which has a facility specializing in the care and education of deaf and blind persons," he said. "We occasionally would have a deaf and blind patient in the emergency department, and they require a super-specialized interpreter who uses tactile communication by touching the hands. I always thought it was amazing to watch."

As for the study itself, Kline was proud of the study and felt it was a step in the right direction.

"The most important point that I took was the novelty of studying this disparity and the citable data showing disparity in length of stay," he said. "Although patients with limited hearing are common, very few require communication with sign language. But when they do require a sign language interpreter, this always leads to delays in care, and sometimes no interpreter can be found for hours, even using modern videoconference technology.

"One solution would be for commercial translation services to have ASL qualified translators who are available by videoconference 24/7."

ROLE PLAYERS

Both Kline and James believe that audiologists can play a vital role in these scenarios.

"The communication context of the health care system, and the emergency department, is inseparable from how deaf and hard-of-hearing patients move through that system," said James. "Emergency departments are also quite loud, which can also impact people with residual hearing and auditory processing disorders."

James added that, regardless of a patient's language modality (e.g., English or ASL), it is important that audiologists advocate for improved communication in the ED.

"Providing qualified sign language interpreters is important to meet the medical and legal needs of providing care to DHH ASL-using patients," he said. "For patients who use spoken English, we need to consider expanding availability of other accommodations that may not be as frequently used—live captioning (through CART), and personal amplification devices like Pocket Talkers."

UNIQUE PERSPECTIVE

Monica Wiser, MA, CCC-A, is both an audiologist and part of the DHH community, having been officially diagnosed as a child (suspected by age 5 and diagnosed by the age of 7).

The founder of Beaufort (S.C.) Audiology and Hearing Care was generally impressed by the study.

"First of all, I applaud the authors of the study for examining the impact of hearing loss on treatment in the ER," she said.

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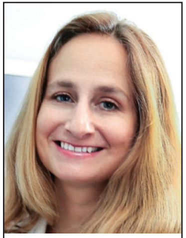
Monica Wiser, MA, CCC-A

"I couldn't help noticing that the authors of the study hypothesized that Deaf and Hard of Hearing individuals would be more likely to go to an ER with less acute problems than people with normal hearing. Numerous studies have shown that it takes patients several years to address their hearing loss and they typically underestimate the severity of the loss, so it is not surprising that the findings actually disproved that hypothesis."

Wiser also noted that it found that hard of hearing patients had a higher re-admission rate than both the hearing and Deaf populations.

"The discussion attributed it to difficulty understanding the discharge instructions, but there is an additional possibility that was not raised," she said. "If the patient was not fully engaged in interactions with providers, certain symptoms may not have been addressed which would affect both diagnosis and treatment. I raise this point because patients with hearing loss are often accompanied by a friend or family member who answers questions for them and but don't always answer correctly."

She noted that she has had multiple instances where family members are shocked to learn about symptoms that they didn't know about until she made the effort to communicate directly with the patient.

"Without that direct input from the patients, providers will miss symptoms that require further testing and the condition will go unaddressed," said Wiser "As a result, they may need to be readmitted to the hospital if the unidentified condition worsens. The Deaf population may not have had the same problem, because interpreters for the Deaf are trained not to answer for the patient, but to translate, so that the patient and provider are fully engaged in the discussion."

James concurred, adding that others can be key role players.

"This is a good question," he said. "The use of family members and friends as proxy interpreters or communication facilitators has been discussed a little in the health care communication literature. We discuss issues related to patient privacy/confidentiality and accuracy as it relates to DHH ASL-users in the ED in the 2021 *Qualitative Health Research* paper.

James did caution against misuse of friends and family, such as end-of-life conversations, which he deems "inappropriate."

He also pointed to a recent publication, *Patient Education and Counseling,* where he and others looked at communication accommodations and modalities among DHH ASL-users, DHH English-speakers, and bilingual DHH people (in English and ASL) engaging in pregnancy care.

"Almost 30% of DHH English-speakers did not request family/friend helping, but received it," he said. "This increases to 41% during labor and delivery.

He said, "I think that looking more at the use of family/friends/proxies as communication facilitators is important—particularly from a medical ethics perspective, and also as it relates to the wellbeing of the proxy."