



Childhood disabilities, including hearing impairment and child maltreatment

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The findings demonstrate an urgent need for hearing impairment and child maltreatment prevention strategies through raised community awareness and inter-agency collaboration.



Deaf representation is lacking: it matters

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Ashley McGoey writes, "As someone with hearing loss, growing up with a lack of deaf representation attributed to the shame I have felt around my hearing loss."

Good noise, bad noise

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Flatten the curve on loneliness for those with hearing loss

Communication is more important than ever during these times of social distancing and self-isolation. But for people with hearing loss who rely on face to face communication, they're part of a growing loneliness epidemic.

We in a pandemic so where are the captions?



More people are getting emergency information and government announcements from Facebook videos.

But there's no regulation on captions in social media so we are seeing a slide backwards in the use of captions; and this means more people are missing out on what could be life-saving information.

Deafness Forum Chairperson David Brady was on ABC TV to talk about the crucial role of captions on behalf of the million or more Australians who rely on them everyday.

The best thing we can do as a community is to add a comment to every Government video we see on social media when captions aren't present – "where are the captions?" And tell your friends to do the same.

It's time that Australian companies offering commercial captioning services begin to support our work in promoting the need for universal captioning. Businesses cannot continue to leave all the lifting to consumers and their representatives.

Disability Royal Commission

[The Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability](#) continues to accept submissions. A submission is the main way people and organisations can provide information to the Royal Commission about their experiences of violence, neglect, abuse or exploitation of people with disability.

Anybody can make a submission. Submissions can be made using the form available on the Royal Commission [Submissions page](#). An Easy Read version of the form is also available.

For now, the Royal Commission has suspended its public hearings and face to face private sessions due to concerns about the spread of COVID-19 coronavirus.

Deafness Forum's work on behalf of the Disability Royal Commission is supported in part by a financial grant from the Department of Social Services.



COVID 19 has meant a huge increase in phone and video communications to replace face to face conversations not possible because of social distancing.

The social distancing involved in COVID 19 responses disrupts people who watch to help their listening:

- phone calls exclude it completely
- video calls restricts visual information
- face masks restrict face watching and lip reading as well as muffle sound

Few people providing essential health, education, welfare and other services have been trained in how to conduct this kind of communication. **Better Phone Communications in the Time of COVID 19** is a presentation that describes how to get the best communication outcomes from phone conversations. These strategies will make phone service provision better for most: they are especially important for certain groups who're likely to have particular difficulties with phone conversations.

These include:

Those listening to an unfamiliar language

- older people with age related hearing loss or auditory processing problems
- people from disadvantaged minorities who have experienced childhood ear disease
- those who experience anxiety which can influence capacity to take in information
- many who use counseling services who have a history of childhood ear disease and/or auditory processing problems
- youth who have been involved with police who have found to have a high incidence of auditory processing problems
- children and adults with attention problems which will influence their taking in information
- children in care or that have had child protection reports made about them who have been found to have a high incidence of hearing loss and/or auditory processing problems

<https://zenodo.org/record/3750700#.XpVTMafL2qA>

Link between hearing impairment and child maltreatment among Aboriginal children in the Northern Territory



International studies provide evidence of an association between child disabilities, including hearing impairment and child maltreatment.

There is high prevalence of ear disease with associated hearing impairment, and child maltreatment among Australian Aboriginal children, but the link between hearing impairment and child maltreatment is unknown. A new study investigates the association between hearing impairment and child maltreatment for Aboriginal children living in the Northern Territory.

This was a study of 3895 Aboriginal school-aged children (born between 1999 and 2008) living in remote NT communities.

A majority of the study cohort lived in very remote (94.5%) and most disadvantaged (93.1%) regions. Among all children in the study cohort, 56.1% had a record of either hearing impairment or unilateral hearing loss, and for those with a history of contact with child protection services. In the 1999–2003 birth cohort, by age 12 years, 53.5% of children with a record of moderate or worse hearing impairment had at least one maltreatment notification, compared to 47.3% of children with normal hearing. In the 2004–2008 cohort, the corresponding results were 83.4 and 71.7% respectively.

Children with moderate or worse hearing impairment had higher risk of a substantiated episode of physical abuse than children with normal hearing.

The findings demonstrate the urgent need for hearing impairment and child maltreatment prevention strategies through raised community awareness and inter-agency collaboration. Effective information-sharing between service providers is a critical first step to a public health approach in child protection.

About this article

He, V.Y., Guthridge, S., Su, J. *et al.* The link between hearing impairment and child maltreatment among Aboriginal children in the Northern Territory of Australia: is there an opportunity for a public health approach in child protection?. *BMC Public Health* 20, 449 (2020). <https://doi.org/10.1186/s12889-020-8456-8>.

<https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-020-8456-8>

Deaf representation is lacking: this is why it matters

By Ashley McGoey writing for Hearing Like Me

We consume different forms of media and entertainment, which affects our place in the world from a young age, especially when we don't see people like ourselves represented.

As someone with hearing loss, growing up with a lack of deaf representation attributed to the shame I have felt around my hearing loss.

Can we have a deaf Disney princess?

As a little girl, I loved the Disney princesses and watched all of their movies growing up. My favorite princess was Ariel, the little mermaid. I loved her so much that I would try to swim in the pool with my legs together as if I had fins. With my hair splayed out like I was underwater, I would lay on the floor and sing "Part of Your World." I envisioned myself talking to animals and finding true love with red hair and all. Then, after the hundredth time watching it, I came to a painful realization. Ariel doesn't have hearing aids. I can't wear my hearing aids underwater. How am I going to hear my sea creature friends talking to me if I can't wear my hearing aids underwater?

I felt ashamed of myself. Ariel was so beautiful and magical and I wanted to be just like her. Because of my hearing aids, I couldn't. I fell short of being a mermaid in many ways. I didn't have fins and couldn't talk to animals or breathe underwater. As a 6-year-old, I knew this, but I could pretend I could do all of those things. I couldn't pretend I could hear without my hearing aids.



"Ariel was so beautiful and magical and I wanted to be just like her, but because of my hearing aids, I couldn't."

The dictionary definition of shame is "a painful emotion caused by consciousness of guilt, shortcoming, or impropriety." This is an emotion I felt often growing up with my hearing loss. As I got older, I started to unpack those feelings and try to figure out where they were coming from. I was not bullied in school about my hearing aids. My family was always incredibly loving and supportive of me no matter what. I had lots of friends, was an athlete, and got good grades. I had and still have an awesome life. Yet, I still had this overbearing feeling of being alone, that I was the only one with hearing aids.

Back when I was a small child who only watched cartoons, there wasn't a single time I saw a hard-of-hearing character (who wasn't an elderly person). Movies and TV shows seldom involve characters with hearing aids. Likewise, many actors/actresses and most celebrities don't wear

hearing aids. I loved Britney Spears and I wanted to be a pop star just like her. When I saw that she wore earpieces for her microphone headset, I crumbled inside. How was I supposed to be a pop star and wear the cool headset if I had hearing aids blocking the earpieces? Imagine how different my perception of myself could have been if the industry had people who were like me!

Small Steps in the Right Direction

It remains true that there is a lack of representation of disabilities, specifically with hearing loss, in the entertainment industry. But there have been a few small steps in the right direction. Most recently, *Toy Story 4* has included a child with a cochlear implant. This is incredibly important because it depicts a child with a hearing loss and the primary audience of the movie is children.

Another small moment was seen in the latest version of the movie, *A Star is Born*. Main character and singer, Jackson Maine, is battling tinnitus from all of his years performing. He spends time in rehab for substance abuse. He also chats with an older man who has hearing aids. What impacted me the most is that during this scene, the camera is focused on his hearing aids. I spent much of my teenage years hiding my hearing aids, and here they were on the big screen. These are just two recent examples.

Feeling Inspired

It is encouraging to know that even in small ways, lack of deaf representation is changing. It would be wonderful to see a film in which a character with hearing aids is the main character. Ideally, the actor playing the character would really have hearing aids. The feelings of shame around hearing loss can subside when people feel a sense of belonging. We feel shame when we feel like we are falling short of our potential. Having the media in our hands (literally), we are constantly exposed to the negativity in the world.

We can also be exposed to the positivity in the world just the same. By using it, we could begin to feel like we are not falling short by having a hearing loss. We could begin to feel inspired by being surrounded by stories and people who are doing the things we aspire to do, despite our disabilities.

Now I'm 24 and sometimes I still feel ashamed of myself when I can't hear someone. I automatically try to play it off like I don't actually have a hearing loss. Every day I work to undo the feelings of shame for being different that are deeply rooted in my mind. With the help of the entertainment industry, I believe we could begin to further represent ourselves. In turn, this can empower the hearing loss community to feel a sense of belonging instead of being left to watch.



Author: [Ashley McGoey](#). Hi! My name is Ashley. I am 24 years old and I was born with a sensorineural hearing loss. I have worn hearing aids since I was 3. Growing up, I struggled to accept my disability and feel good about myself because I felt like I was the only young person with a hearing loss. I wish that I had been able to connect with people who have the same hearing loss as I do, so that we could feel less alone.

<https://www.hearinglikeme.com/lack-of-deaf-representation-and-why-it-matters/?fbclid=IwAR0CshDewz9ZL3gXjCJjnIGGcfu3zqQzsN63phshkuWPfXAKm8hNU7tnH5k>

Flatten the curve on loneliness for those with hearing loss

Communication is more important than ever during these times of social distancing and self-isolation. But for people with hearing loss who rely on face to face communication, they're part of a growing loneliness epidemic.

Ear Institute Australia CEO Sandra Bellekom said that Lions Hearing Clinics are classed as an essential service and continue to operate safely.

"The research that we've done at the Ear Science Institute has shown there is a strong connection between untreated hearing impairment and loneliness and social isolation. That's only compounded by the fact that many senior people, many of which have hearing loss are forced to sat home right now."

Ms Bellekom is urging people to check in with the older family members or neighbours.

"We're also calling on healthy members of the community to safely check on the seniors around you. Ask if their hearing devices are working, or if they need help. Ask if their televisions have subtitles switched on so they can 'hear' the news." Ms Bellekom says.

By Mark Gibson 6PR, <https://www.6pr.com.au/podcast/flatten-the-curve-on-loneliness-for-those-with-hearing-loss/>



The University of Western Australia awarded Dona Jayakody for her work in hearing research.

Dona, working in the Faculty of Health and Medical Science received the prestigious Dr Harry Blackmore Award for her outstanding research work that includes assessing the impact of hearing loss treatment using hearing implants and hearing aids on cognitive functions and mental health of older adults with hearing loss.

Dona also received an award for her research project on the impact of hearing aids on mental health, social isolation and loneliness of older adults.

New model for the way humans localise sounds

One of the enduring puzzles of hearing loss is the decline in a person's ability to determine where a sound originates, a key survival faculty that allows animals -- from lizards to humans -- to pinpoint the location of danger, prey and group members.

In modern times, finding a lost cell phone by using the application "Find My Device," just to find it had slipped under a sofa pillow, relies on minute differences in the ringing sound that reaches the ears.

Unlike other sensory perceptions, such as feeling where raindrops hit the skin or being able to distinguish high notes from low on the piano, the direction of sounds must be computed; the brain estimates them by processing the difference in arrival time across the two ears, the so-called interaural time difference (ITD). A longstanding consensus among biomedical engineers is that humans localise sounds with a scheme akin to a spatial map or compass, with neurons aligned from left to right that fire individually when activated by a sound coming from a given angle -- say, at 30 degrees leftward from the center of the head.

But in research published this month in the journal *eLife*, Antje Ihlefeld, director of NJIT's Neural Engineering for Speech and Hearing Laboratory, is proposing a different model based on a more dynamic neural code. The discovery offers new hope, she says, that engineers may one day devise hearing aids, now notoriously poor in restoring sound direction, to correct this deficit.

"If there is a static map in the brain that degrades and can't be fixed, that presents a daunting hurdle. It means people likely can't "relearn" to localize sounds well. But if this perceptual capability is based on a dynamic neural code, it gives us more hope of retraining peoples' brains," Ihlefeld notes. "We would program hearing aids and cochlear implants not just to compensate for an individual's hearing loss, but also based upon how well that person could adapt to using cues from their devices. This is particularly important for situations with background sound, where no hearing device can currently restore the ability to single out the target sound. We know that providing cues to restore sound direction would really help."

What led her to this conclusion is a journey of scholarly detective work that began with a conversation with Robert Shapley, an eminent neurophysiologist at NYU who remarked on a peculiarity of human binocular depth perception -- the ability to determine how far away a visual object is -- that also depends on a computation comparing input received by both eyes. Shapley noted that these distance estimates are systematically less accurate for low-contrast stimuli (images that are more difficult to distinguish from their surrounding) than for high-contrast ones.

Ihlefeld and Shapley wondered if the same neural principle applied to sound localisation: whether it is less accurate for softer sounds than for louder ones. But this would depart from the prevailing spatial map theory, known as the Jeffress model, which holds that sounds of all volumes are processed -- and therefore perceived -- the same way. Physiologists, who propose that mammals rely on a more dynamic neural model, have long disagreed with it. They hold that mammalian neurons tend to fire at different rates depending on directional signals and that the brain then compares these rates across sets of neurons to dynamically build up a map of the sound environment.

"The challenge in proving or disproving these theories is that we can't look directly at the neural code for these perceptions because the relevant neurons are located in the human brainstem, so we cannot obtain high-resolution images of them," she says. "But we had a hunch that the two models would give different sound location predictions at a very low volume."

They searched the literature for evidence and found only two papers that had recorded from neural tissue at these low sounds. One study was in barn owls -- a species thought to rely on the Jeffress model, based on high-resolution recordings in the birds' brain tissue -- and the other study was in a mammal, the rhesus macaque, an animal thought to use dynamic rate coding. They then carefully reconstructed the firing properties of the neurons recorded in these old studies and used their reconstructions to estimate sound direction both as a function of ITD and volume.

"We expected that for the barn owl data, it really should not matter how loud a source is -- the predicted sound direction should be really accurate no matter the sound volume -- and we were able to confirm that. However, what we found for the monkey data is that predicted sound direction depended on both ITD and volume," she said. "We then searched the human literature for studies on perceived sound direction as a function of ITD, which was also thought not to depend on volume, but surprisingly found no evidence to back up this long-held belief."

She and her graduate student, Nima Alamatsaz, then enlisted volunteers on the NJIT campus to test their hypothesis, using sounds to test how volume affects where people think a sound emerges.

"We built an extremely quiet, sound-shielded room with specialised calibrated equipment that allowed us to present sounds with high precision to our volunteers and record where they perceived the sound to originate. And sure enough, people misidentified the softer sounds."

"To date, we are unable to describe sound localisation computations in the brain precise. However, the current results are inconsistent with the notion that the human brain relies on a Jeffress-like computation. Instead, we seem to rely on a slightly less accurate mechanism.

More broadly, the researchers say, their studies point to direct parallels in hearing and visual perception that have been overlooked before now and that suggest that rate-based coding is a basic underlying operation when computing spatial dimensions from two sensory inputs.

"Because our work discovers unifying principles across the two senses, we anticipate that interested audiences will include cognitive scientists, physiologists and computational modeling experts in both hearing and vision," Ihlefeld says. "It is fascinating to compare how the brain uses the information reaching our eyes and ears to make sense of the world around us and to discover that two seemingly unconnected perceptions -- vision and hearing -- may in fact be quite similar after all."

Published by Science Daily, <https://www.sciencedaily.com/releases/2019/11/191106085459.htm> Story Source: [Materials](#) provided by [New Jersey Institute of Technology](#). Original written by Tracey Regan. *Note: Content may be edited for style and length.* Journal Reference: Antje Ihlefeld, Nima Alamatsaz, Robert M Shapley. *Population rate-coding predicts correctly that human sound localization depends on sound intensity.* *eLife*, 2019; 8 DOI: [10.7554/eLife.47027](https://doi.org/10.7554/eLife.47027)

Do you have a question about coronavirus (COVID-19)?



Do you need help because things have changed?

Help is available on the Disability Information Helpline funded by the Australian Government.

The Helpline can help families, carers, support workers and services, too.

The Disability Information Helpline is free, private and fact-checked.

You can contact the Helpline in the following ways:

- Phone (free call): 1800 643 787
- If you are deaf, or have a hearing or speech impairment, you can also call the National Relay Service on 133 677

The Helpline is available Monday to Friday 8am to 8pm (AEST) and Saturday and Sunday 9am to 7pm (AEST). It's not available on national public holidays.

When you call the Disability Information Helpline, you will speak to a person who will:

- Listen carefully to you
- Use their connections to find things out, check the facts, and get information for you
- Transfer you to services that can help you
- Transfer you to a phone counsellor for emotional support, if you would like
- Give you clear and accessible information.

Contact the Disability Information Helpline if something is worrying you. For example,

- your provider has stopped services
- it's hard for you to get food, groceries, medications or other essential items
- someone close to you has symptoms of coronavirus
- you are feeling really upset
- anything else is worrying you.

Good noise, bad noise: White noise improves hearing

White noise is not the same as other noise -- and even a quiet environment does not have the same effect as white noise.

With a background of continuous white noise, hearing pure sounds becomes even more precise, as researchers have shown. Their findings could be applied to the further development of cochlear implants.

Despite the importance of hearing in human communication, we still understand very little of how acoustic signals are perceived and how they are processed to allow us to make sense of them. One thing is clear though: the more precisely we can distinguish sound patterns, the better our hearing is.

But how does the brain manage to distinguish between relevant and less relevant information -- especially in an environment with background noise?

Exploring the "auditory brain"

Researchers led by Prof. Dr. Tania Rinaldi Barkat from the Department of Biomedicine at the University of Basel have investigated the neuronal foundation of sound perception and sound discrimination in a challenging sound environment. The focus was on research into the auditory cortex -- the "auditory brain," that is, the area of the brain that processes acoustic stimuli. The resulting activity patterns stem from measurements in a mouse brain.

As is well known, the distinction between sounds becomes more difficult the closer they are in the frequency spectrum. Initially, the researchers assumed that additional noise could make such a hearing task even more difficult. However, the opposite was observed: The team was able to demonstrate that the brain's ability to distinguish subtle tone differences improved when white noise was added to the background. Compared to a quiet environment, the noise thus facilitated auditory perception.

Noise reduces neuronal activity

The data of the research group showed that white noise significantly inhibited the activity of the nerve cells in the auditory cortex. Paradoxically, this suppression of the neuronal excitation led to a more precise perception of the pure tones. "We found that less overlap occurred between populations of neurons during two separate tone representations," explains Professor Tania Barkat. "As a result, the overall reduction in neuronal activity produced a more distinct tone representation."

To confirm that the auditory cortex and not another area of the brain was responsible for the change in sound perception, the researchers used the light-controlled technique optogenetic. Their findings could possibly be used to improve auditory perception in situations where sounds are difficult to distinguish. According to Barkat, it is conceivable that cochlear implants could be stimulated with an effect similar to white noise in order to improve the frequency resolution and thus the hearing result of their users.

Science Daily, <https://www.sciencedaily.com/releases/2019/11/191112142926.htm>

Participation of People with a Disability in Jury Service

Jury service is an important part of the judicial system. It serves as a means for members of the community to participate in the administration of justice and to ensure that the application of law is fair and consistent with community standards. In Western Australia (WA), jury service is governed by the Juries Act 1957 (WA) (the Act).

An essential characteristic of juries is that they be representative of the wider community. However, in practice, this is not necessarily the case. Currently, a person with a disability may be excused, exempt or ineligible from participating as a juror in most Australian jurisdictions including WA. This has been an area of concern in recent years with a significant amount of discussion and academic research conducted in relation to this matter.

A Discussion Paper has been prepared to provide stakeholders with an overview of the relevant legislation in WA and other Australian jurisdictions. Questions have been posed in this Discussion Paper to elicit stakeholder views in order to assist the Department to form a position and make recommendations to the Attorney General as to whether it is appropriate to make any changes to the current legislation.

Stakeholders, interested persons or organisations are therefore invited to make written submissions in response to the questions raised and any other considerations they believe may be relevant to this Discussion Paper.

The closing date for submissions is Monday, 11 May 2020.

<https://www.wa.gov.au/government/publications/participation-of-people-disability-jury-service>

Know someone who might like to get their own One in Six?

Drop us a line: hello@deafnessforum.org.au

We acknowledge the traditional owners of country throughout Australia, and their continuing connection to land, sea and community. We pay respect to them and their cultures, and to elders past, present and future. We acknowledge the challenge of overcoming high levels of ear health issues among First Nation people and its role in Closing the Gap. We acknowledge the risk to indigenous sign languages of disappearing and the importance of Auslan.

People with disability have and continue to be subjected to isolation, exploitation, violence and abuse in institutions. We thank the Australian Parliament for its bipartisan support of a Royal Commission into the evil committed on people with disability.

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