



SEEK WISDOM, ELEVATE YOUR INTELLECT AND SERVE HUMANITY!

Addis Ababa University
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COLLAGE OF NATURAL AND COMPUTETIONAL SCIENCE

Inclusiveness First Assignment

Hearing Impairment

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What is hearing impairment?

Hearing impairment, which is the most common form of sensory deficit, is fully or partially loss of ability to hear and discriminate sounds. It is a general term that comprises many types of hearing loss such as deafness, hard of hearing, fluctuating hearing, etc. People might face hearing impairment suddenly or progressively. According to the World Health Organization (WHO), there are 360 million persons in the world with hearing loss (5.3% of the world's population), and 32 million of whom are children. It is estimated that up to 1 million people in Ethiopia live with hearing impairment. As other types of impairments, unless they are combined with environmental challenges, they will not lead to disability and inefficient participation.

Characteristics of a person with hearing impairment

The following lists are characteristics of people with hard of hearing and deafness

- They usually consider sounds as quite
- They usually ask for repetition and loud speaking
- They raise the volume of tv, radio and cellphone
- They isolate themselves from typical person and approach approach others with the same situations
- They avoid participating in social events
- They want others pity(charity sense)
- They have delayed or no language development
- They perform poorly at school
- They withdraw from conversations
- They face frequent or re-occurring ear infections.
- They face difficulties attending and listening.
- They do not answer when you call them.
- They notice you when they see you not ,when you call them.

- They raise their voice beyond normal level.
- The deaf might sound strangely.

Causes of hearing impairment

- **Aging** degeneration of inner ear (that sends and receives signals for and from brain) structures occurs over time.
- **Loud noise** exposure to loud sounds can damage the cells of your inner ear. Damage can occur with long-term exposure to loud noises, or from a short blast of noise, such as from a gunshot.
- **Heredity** your genetic makeup may make you more susceptible to ear damage from sound or deterioration from aging.
- **Occupational noises** Jobs where loud noise is a regular part of the working environment, such as farming, construction or factory work, can lead to damage inside your ear.
- **Recreational noises** exposure to explosive noises, such as from firearms and jet engines, can cause immediate, permanent hearing loss. Other recreational activities with dangerously high noise levels include snowmobiling, motorcycling, carpentry or listening to loud music.
- **Some medications** drugs such as the antibiotic gentamicin, sildenafil (Viagra) and certain chemotherapy drugs, can damage the inner ear. Temporary effects on your hearing ringing in the ear (tinnitus) or hearing loss can occur if you take very high doses of aspirin, other pain relievers, antimalarial drugs or loop diuretics.
- **Some illnesses** diseases or illnesses that result in high fever, such as meningitis, may damage the cochlea.
- **Genetic factors** a child might inherit a hearing impairment if its parents are affected.
- Infections during pregnancy (e.g. cytomegalovirus, rubella, herpes or syphilis), toxins consumed by the mother during pregnancy or other conditions occurring at the time of birth or shortly thereafter.
- Premature birth a child from underage marriage.
- Childhood infections (e.g. measles, chicken pox).
- Head trauma after birth.
- Otitis Media (i.e. middle ear infection) due to nasal congestion

- a treatment for [tuberculosis](#) (TB), streptomycin

Types of hearing loss

There are three types of hearing loss

- sensorineural hearing loss
- conductive hearing loss, and
- mixed hearing loss.

Sensorineural hearing loss

Sensorineural hearing loss is the most common type of hearing loss. It occurs when the inner ear nerves, the cochlea, auditory nerve, or brain and hair cells are damaged perhaps due to age, noise damage or something else. As humans grow older, hair cells lose some of their function, and hearing deteriorates. Sensorineural hearing loss impacts the pathways from your inner ear to your brain. Most times, sensorineural hearing loss cannot be corrected medically or surgically, but can be treated and helped with the use of hearing aids.

Long-term exposure to loud noises, especially high-frequency sounds, is another common reason for hair cell damage. Damaged hair cells cannot be replaced. Currently, research is looking into using [stem cells](#) to grow new hair cells. Sensorineural total deafness may occur as a result of congenital deformities, inner ear infections, or head trauma.

Conductive hearing loss

Conductive hearing loss is typically the result of obstructions in the outer or middle ear perhaps due to fluid, tumors, earwax or even ear formation. This obstruction prevents sound from getting to the inner ear. Conductive hearing loss can often be treated surgically or with medicine.

The vibrations are not passing through from the outer ear to the inner ear, specifically the cochlea. This type can occur for many reasons, the following are the significant ones:

- an excessive build-up of earwax
- glue ear
- an ear infection with inflammation and fluid buildup
- a perforated eardrum
- malfunction of the ossicles
- a defective eardrum

Ear infections can leave scar tissue, which might reduce eardrum function. The ossicles may become impaired as a result of infection, trauma, or fusing together in a condition known as ankylosis.

Mixed hearing loss

Mixed hearing loss is just what it sounds like a combination of sensorineural and conductive hearing loss. This is a combination of conductive and sensorineural hearing loss. Long-term ear infections can damage both the eardrum and the ossicles. Sometimes, surgical intervention may restore hearing, but it is not always effective.

How to prevent hearing impairment?

- Avoid noisy places whenever possible.
- Use earplugs, protective ear muffs, or noise-canceling headphones when around loud noises.
- Keep the volume down when listening through earbuds or headphones.
- Ask your doctor for a hearing checkup if you suspect you have hearing loss
- Avoid smoking

- Remove ear wax properly
- Check medication for hearing risks
- Wear hearing protection, when exposed to loud noises

Treatment techniques/Intervention for Person with hearing impairment

Before deciding the right treatment ,which is used to treat a specific disease we have to diagnose the disease first.

Tests to diagnose hearing loss may include:

- **Physical exam** Your doctor will look in your ear for possible causes of your hearing loss, such as earwax or inflammation from an infection. Your doctor will also look for any structural causes of your hearing problems.
- **General screening tests** Your doctor may use the whisper test, asking you to cover one ear at a time to see how well you hear words spoken at various volumes and how you respond to other sounds. Its accuracy can be limited.
- **App-based hearing tests** Mobile apps are available that you can use by yourself on your tablet to screen for moderate hearing loss.
- **Tuning fork tests** Tuning forks are two-pronged, metal instruments that produce sounds when struck. Simple tests with tuning forks can help your doctor detect hearing loss. This evaluation may also reveal where in your ear the damage has occurred.
- **Audiometer tests** During these more-thorough tests conducted by an audiologist, you wear earphones and hear sounds and words directed to each ear. Each tone is repeated at faint levels to find the quietest sound you can hear.

If you have hearing problems, help is available. Treatment depends on the cause and severity of your hearing loss.

Options include:

- **Removing wax blockage** earwax blockage is a reversible cause of hearing loss. Your doctor may remove earwax using suction or a small tool with a loop on the end.
- **Surgical procedures** some types of hearing loss can be treated with surgery, including abnormalities of the eardrum or bones of hearing (ossicles). If you've had repeated infections with persistent fluid, your doctor may insert small tubes that help your ears drain.
- **Hearing aids** If your hearing loss is due to damage to your inner ear, a hearing aid can be helpful. An audiologist can discuss with you the potential benefits of a hearing aid and fit you with a device. Open fit aids are currently the most popular, due to fit and features offered.
- **Cochlear implants** If you have more severe hearing loss and gain limited benefit from conventional hearing aids, then a cochlear implant may be an option. Unlike a hearing aid that amplifies sound and directs it into your ear canal, a cochlear implant bypasses damaged or nonworking parts of your inner ear and directly stimulates the hearing nerve. An audiologist, along with a medical doctor who specializes in disorders of the ears, nose and throat (ENT), can discuss the risks and benefits.

Conclusion

Hearing impairment is a sensory deficit impairment that leads to partial and permanent hearing loss. It can be caused by failure of one or more of ear parts. People might face this suddenly or progressively. Unless they are combined with environmental barriers they will not lead to disability. It has different types of prevention and treatments.

Reference

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