

Effect of COVID-19 on Individuals with Hearing Impairment in India

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ABSTRACT

COVID-19 has proven to be pandemic and affecting the day to day life of normal individuals. However, individuals with disability, especially with hearing impairment face even more difficulty. They are unable to get their routine evaluation and therapy, the maintenance of their hearing restoration devices has also found to be cumbersome. The strategy that they can use during this lockdown period has been discussed.

Keywords: Cochlear implant, Early identification, Telerehabilitation

INTRODUCTION

Covid-19 is a pandemic disease with initial symptoms of fever, cough, sore throat, breathlessness, fatigue, malaise and can progress to pneumonia, Acute Respiratory Distress Syndrome (ARDS) and multi-organ dysfunction. The final stage can be fatal and recovery may seem strenuous [1]. It was first originated in China in the month of December in the city of Wuhan [2]. The first case reported in India was on January 30th in the State of Kerala with the disease's rapid growth seen in the month of March in most of the parts of India [3]. With the outbreak, the disease has been declared epidemic and with a burgeon seen in the month of March, the Prime Minister announced one of India's largest lockdown ever on March 24 which saw an extension till 18th of May [4,5]. As of May 14th, over 78,000 positive cases have been reported all over the country [6]. With Economic crisis being a concern and day to day activities of common public affected, the worst affected are individuals with disability.

Not all healthcare professionals are functional during this lockdown period. Most of the Audiologists and Speech therapists do not work as they do not come under emergency health workers and Speech and hearing centers are nonfunctional during this time. This makes it cumbersome for individuals with hearing impairment. Early identification and intervention are essential to restore near normal hearing, Speech and Language development in infants. Neonatal hearing is measurable until three years of age and if they are not remediated, a huge impact can be seen in the child's life [7]. There are enough evidences to show that early identification and early intervention before 6 months of age can enable the child to perform better in terms of communication, social skills, behaviour and intelligence required for a better later life [8]. This can only be possible with help of universal newborn hearing screening. With the nonavailability of audiologists, it has been difficult to carry out newborn screening in hospitals, which further interrupts the process of early intervention.

ROLE OF AUDIOLOGIST DURING THIS CRISIS

As Audiology services are not under the emergency care unit, they remain non-functional making it difficult for parents to buy hearing aids during this time with no hearing aid dispensing units and limited audiologists being present for hearing aid counselling and programming. Even if certain centers start functioning, it is tedious for the patients to travel to these centres because of the lack of transportation. Cochlear Implant (CI) surgeries for children and adults are cancelled at this time [9]. These may result in children not receiving auditory input at the right time and can cause some

form of deprivation in their auditory areas. It makes it also equally difficult for patients who have already purchased hearing aids as reprogramming is impossible if there is no option of remote programming.

Though, online programming and programming through smart phones are known, these facilities are not available for all hearing aids [10]. These are available only in high end hearing aids which is just around 10% of the total hearing aids used by the hearing-impaired population of India [11]. In addition, patients do not get the copyrights to own hearing aid software. It is also not ethically right for patients to do self-programming with programming software [12-14]. In case of device failure, professionals are unavailable for troubleshooting and repair which makes audition difficult for them until professionals are available. The electronic shops also remains closed, which makes it difficult for patients to purchase sufficient zinc air batteries, if they are out of stock, which in turn makes them arduous to use their own hearing aids [15,16]. This can result in patient related stress; depression and can affect the progress in children [17].

For CI users, MAPing is unfeasible and can affect their overall Auditory skills. CI MAPing is a term that depicts the programming done in CI users. The audiologists use a telemetry coil, fits it to the CI user and sets the T level (Threshold level) and C level (Maximum Comfortable level) for them [18]. The device is switched on four weeks after the surgery and a regular follow-up Aided Audiometry and MAPing; at least thrice a month must be carried out in the first year for better performance [19]. Due to lockdown routine follow-up is interrupted. For a similar situation, a device failure cannot be corrected by an audiologist and sent for repair at this time. With the spare parts already being costly, if care and maintenance are not counselled, it will become difficult for the client to afford if not handled appropriately [17,20].

It is strenuous to provide listening training at this time to hearing impaired children with non-availability of audiologists and rehabilitation therapists [7]. Even though therapist might be planning adequate home training sessions during the lockdown time, there is not much of monitoring and hands on therapy by the therapist. It also makes it difficult for parents to carry out activities if the child has achieved the goal as there is no feasibility to do a regular listening checklist, which affects the development of the child [21,22]. Even though therapist can provide telerehabilitation, there are several limitations in carrying out telerehabilitation for hearing impaired. Audio clarity is very much important for listening training which can get compromised. Clients from a village background may not have a good internet speed and

good smartphones to avail the facility. Even if people from city can utilise these facilities, a difference in live voice and voice from speakers can differ the quality and the way children pursue these voices and thus, solely relying on home training [23]. There is a need for delivery through home training solely during this crisis period. Parents can deliver their therapy with the help of what they have observed during sessions and based on the counseling given by the clinicians. Those who are still unaware can contact the clinicians and can also access parent training courses offered by various professionals.

Lockdown does not only affect the development of a child but also affects the hearing-impaired child's learning and mindset as they are devoid of external recreational activities and schooling.

TIPS TO OVERCOME THE CRISIS

Users of Hearing Aids and CI Devices

- Performing regular visual checks to check if any wax is present or any cracks are present in the hearing aid.
- Make sure adequate tubes and ear tips are preserved so that it can be changed only when necessary and not at regular intervals.
- Minimise the moisture content in hearing aids, clean the hearing aids regularly and store it in dry kit when not in use.
- As there might be nonavailability of batteries, preserve the usage of batteries. A typical battery can last from 5 to 10 days, minimise the usage of Bluetooth to watch televisions and use mobile phones.
- For CI individuals, only use one rechargeable battery and preserve the other. Do not overcharge the battery and alternatively use it with zinc air battery to reduce its over usage [24].
- Keep the components inside dry kit when not in use.
- Regularly test the instrument with a tester and perform listening check in the morning.
- In cases of MAPing and Programming, the patient can use the current MAP or program and can later after a month use the progressive MAP or program set by the audiologists. If the lockdown still extends, the patient can increase the overall volume by 2 units every month.
- The patient can regularly contact their audiologist for any queries [25,26].

Rehabilitation

- For rehabilitation, parent training at home is essential at this current situation.
- Although telerehabilitation has its own limitations, at this stage it is the only option for providing services at this time.
- It is the duty of the audiologist and rehabilitation specialists to contact their clients and make sure they are equipped for online therapy. If they have the facilities to avail services, audiologist must plan accordingly and arrange for online therapy.
- For those who cannot avail the services the audiologists and rehabilitation specialists must regularly keep in touch with their clients, provide essential counselling over phone and also can perform regular checklist through interview.

Role of Speech Therapist during this Crisis

Although pros and cons of telerehabilitation have been discussed, services being provided in the form of telerehabilitation are way better than no services being provided. Many literatures have shown telerehabilitation being beneficial to patients ranging from hearing impairment to dysarthria and Speech language therapists

must continue their therapy through teletherapy to provide some form of services to their clients [27-30]. In India, some institutes have taken the initiation to start the telerehabilitation by providing therapist's contact numbers to avail services of counselling and therapy and clients too have started to register and are availing their sessions [31,32].

CONCLUSION(S)

Covid-19 maybe a boon to the environment but has been a crisis for people. The disabled population has been mainly affected due to lack of availability of services. As the hearing-impaired individuals face many difficulties during this crisis. As Speech and Hearing professionals, it is our duty to reach out to our clients and provide the services they need. We can aid in setting telerehabilitation services, provide regular counselling and always be available for any queries they have.

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