

EDITORIAL:

Overview of Communication disorders: Raising Awareness to encourage management drives approach

Pradyum Srivastava¹, Manushi Srivastava²

An effective and functional communication occurs when a communicator speaks, hears, reads, writes, and signs (including manual gestures), to successfully formulate, transmit, receive, and comprehend information from another communicator. An individual with communication impairment or disorders has significant difficulty in one or more aspects of communication, within the context of the individual's language, dialect and culture. Types of communication disorders depend on whether formulation, transmission, reception, and/or comprehension of the message is affected.

Communication is paramount to our social and emotional well being. All of us have perhaps been in a situation where we had difficulty communicating. For example, when we visit another country we don't know the language, or when we cannot articulate intelligibly after being to a dentist due to numb mouth from anaesthesia, or we cannot talk due to a panic attack triggered by a situation, or when we temporarily lose our voice due to laryngitis. The above examples are some very common instances that could happen to individuals who otherwise have typical communication. On the other hand, there are individuals with communication disorders.

The incidence and prevalence of communication disorders in India is scarcely reported. In addition to that, the prevalence data must be interpreted with caution as the data could be directly impacted by the lack of health infrastructure resulting in poor access to healthcare, lack of awareness, and underreporting, especially in rural India. One study from the rural parts of Karnataka state reported 6.07% prevalence in communication disorders.¹ According to the Government of India 2011 census, 18.9% of the population has hearing impairment, and 7.5% of the population has speech impairment with more prevalence in males than females.

Communication refers to creating, sending, receiving, processing and understanding of messages, ideas and/or feelings. Effective communicators are able to successfully formulate, transmit, receive and comprehend messages via speech and hearing (verbal), reading and writing (graphic) or sign and other manual (nonverbal) means of communication. Hence, inability to effectively formulate, transmit, receive and/or comprehend messages to other people, who share the same language, dialect or culture, leads to different kinds of communication disorders.

Communication disorders are mainly divided into three main categories: speech disorders, language disorder and hearing impairment. Usually, inability to formulate and comprehend indicate language impairment, inability to transmit indicates speech impairment, and inability to receive indicates hearing impairment. The nature of a communication disorder could be either developmental or acquired ranging in severity from mild to profound.²

-
1. Associate Professor, Department of Speech Pathology and Audiology, School of Medicine, University of Nevada, Reno, NV 89557-0357, USA.
 2. Professor, Dept. of Community Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi-221 005, India.

Corresponding Author: Associate Professor, Department of Speech Pathology and Audiology, School of Medicine, University of Nevada, Reno, NV 89557-0357, USA.

Submission	22.02.2024	Revision	29.02.2024	Accepted	15.03.2024	Printing	31.03.2024
-------------------	-------------------	-----------------	-------------------	-----------------	-------------------	-----------------	-------------------

Prior Publication: Nil; Source of Funding: Nil; Conflicts of Interest: None, Article #87

Types of Communication Disorders

The three main categories of communication disorders are: language disorders, speech disorders and hearing disorders. Feeding and swallowing disorders are increasingly considered under the umbrella of communication disorders too due to its complex relationship with the organs involved in speech. Disorders of language include impediment in both reception and expression of spoken, written and/or other symbol systems impacting one or more of the following linguistic domains: semantics, syntax, morphology, phonology and pragmatics. Semantics refers to the meaning system of language. Syntax refers to the system that governs the grammatical sentence structure. Morphology refers to the system that governs the meaningful units of language. Phonology is the sound system of language. And finally, Pragmatics refers to the system that governs the appropriate use of language in social contexts.

Child Language Disorders

Language disorders can affect both children and adults. Child language disorders could be either developmental or acquired. Developmental language disorders are identified at or right after birth. Acquired language disorders are usually a result of injury or trauma. Language disorders are a common comorbidity in children with intellectual disability, autism, traumatic brain injury and learning disability. Prevalence data on child language disorders is limited in the Indian context. A couple of studies that shed prevalence data on the Indian population include.³ Study with 16.27% of 6 years old with speech and language delay, and study with 17% of 2.5 to 5 years old with expressive language delay.⁴

Adult Language Disorders

Just like child language disorders, adult language disorders can be developmental or acquired too. Developmental language disorders in adults could be simply a result of undiagnosed language disorders from their early years. One common acquired language disorder in adults is aphasia. Aphasia could be a result of stroke or traumatic brain injury from motor vehicle accidents or other physical trauma to the brain. Aphasia could impact one's ability to produce or understand language or even complex language tasks, such as, reading and writing, depending on the location of the injury.²

Speech Disorders

Speech disorders are based on the impairment in the systems responsible for producing speech - respiration, resonance, phonation and articulation.

Articulation and Phonological Disorders

Speech sound production problems commonly occur in young children. Articulation and phonological disorders are characterized by speech production errors, such as distortions, substitutions and deletions of speech sounds. Articulation disorders are usually organic in nature, that is, a result of minor or major variations in normal structure of speech production system. One common example of structural abnormality is cleft lip and palate. This is significant to the Indian population as there are approximately 27000-33000 births per year with malformation of lip and/or palate. In such a population, following multiple corrective surgeries on the lip and/or palate, children need articulation therapy to help them learn to produce speech sounds correctly. In phonological disorders, although children can produce the sounds, they don't use them correctly resulting in substitution and deletion of those sounds. This is usually a consequence of incorrect representation of sound(s) in their sound inventory.²

Fluency Disorders

Fluency disorders include communication breakdowns that happen due to significantly more and longer speech disruptions, mainly sound repetitions, sound prolongations and complete blockage of airflow. Usually these disfluencies are accompanied with overt behaviours, such as body movements including, fist clenching, head nods and eye blinking. True fluency disorders must be differentiated from normal dysfluency or normal non-fluency, a stage of non-fluency young children go through in the course of their typical speech and language development.

Voice Disorders

Communication difficulties due to the impairment in voice refer to voice disorders. Voice disorder can be either categorized as a complete loss of voice (aphonia) or partial loss of voice (dysphonia). In chronic cases, causes of Aponia or dysphonia could be either due to continuous overuse or abuse of voice, injury/trauma to the vocal folds and/or related tissues, or laryngeal cancer. In the Indian context, the prevalence of laryngeal cancer associated with chewing and smoking tobacco has been scarcely investigated. Chewing and smoking tobacco are both identified as significant risk factors, but there is mixed evidence on the relationship between chewing tobacco and laryngeal cancer.⁵ Due to social stigma associated with alcohol consumption and ban on alcohol shops in some states of India, the relationship between smoking and laryngeal cancer could not be established.⁶ However, laryngeal cancer may require partial or total surgical removal of the larynx in order to save the patient's life in exchange for the possible loss of voice.

Motor Speech Disorders

When speech disorder, characterised by substitution, omission or distortion of speech sounds, is due to the dysfunction in the nervous system, then it is categorised as motor speech disorders or neurogenic speech disorders. This is in contrast to the above described speech disorder that is either caused by structural abnormality or inaccurate representation of the speech sounds in the child's sound inventory. Two major types of motor speech disorders are apraxia and dysarthria.²

Hearing Disorders

Hearing disorders are caused when the breakdown in sound transmission happens anywhere in the auditory pathway from the external ear to the brain.

Sensorineural Hearing Loss

Sensorineural hearing loss is caused when the disruption in the sound transmission happens at the level of the inner ear or auditory nerve that transmits sound signals from the inner ear to the brain centres. Sensorineural hearing loss can range from minimal to profound levels and can be either congenital or acquired. Cochlear implants are used to restore hearing acuity in patients with profound hearing loss or deafness.

Conductive Hearing Loss

Conductive hearing loss is caused when the sound transmission is disrupted at the external ear or middle ear level. Some of the common causes include malformed external ear canal, ruptured/perforated eardrum, or fluid in the middle ear as a result of middle ear infection (condition called Otitis Media). Most children experience at least one episode of Otitis Media during the preschool years. During each episode of Otitis Media (lasts approximately 29 days) the child does not have complete access to environmental sounds. Hence, in cases of chronic Otitis Media, multiple episodes of ear infections could significantly interfere with the normal acquisition and production of age appropriate speech sounds resulting in delayed communication development.²

Auditory Processing Disorders

In contrast to the breakdown in the *transmission* of speech sounds, an auditory processing disorder (APD) is an interference with the *processing* of speech sounds in the auditory centre in the brain. This is common in patients with Alzheimer's disease. An APD could interfere with localization, discrimination and recognition of environmental sounds. Auditory Processing disorder is hard to diagnose as its symptoms are similar to those associated with language and literacy difficulties comorbid with inattention.⁷

Feeding and Swallowing Disorders

As the systems responsible for producing speech sounds (respiration, phonation, resonance, and articulation) are also responsible for feeding and swallowing, disorders related to feeding and swallowing are included within the spectrum for communication disorders. The idea that being able to eat or drink is core to one's quality of life has forged recent changes in remediation of feeding and swallowing disorders. With these changes in the recent decades, restoring the feeding and swallowing functions is integral to treatment considerations instead of simply putting the patient on feeding tubes.

Paediatric Feeding and Swallowing Disorders

Feeding and swallowing disorders could be associated with children born with certain developmental disorders, such as, low birth weight, cerebral palsy, cleft lip and/or palate, and other neurological impairments. It can also result from trauma, such as, brain injury or stroke.^{8,9} Feeding and swallowing disorders in children with premature birth and/or low birth weight could be due to the immaturity of the involved systems. In children with cleft lip and palate, structural abnormality of the lip and/or palate results in feeding and swallowing disorders.¹⁰ Strength and timing of muscle contraction (preciseness of muscle control) required for feeding and swallowing is compromised in children with cerebral palsy. Although nasogastric tubes are used in children with the above developmental disorders to meet their nutritional needs, skilled therapy is central to developing feeding and swallowing skills for oral means of nutrition.

Dysphagia in Adults

Swallowing problems in adults refers to dysphagia. This refers to difficulty with any or a combination of the stages of swallowing, such as, chewing the food into a bolus, initiating and maintaining a swallow. As a result of these difficulties, the patient might experience a myriad of symptoms, such as, choking, coughing, swallowing pain, regurgitation of food after swallowing (different from vomiting), loss of weight, malnourishment, and in severe cases, death.²

Conclusion

It is a fundamental right of any human to be able to optimize their abilities to effectively communicate in society. Detrimental systemic impacts of communication disorders could have lifelong social, psychological, emotional, and economical implications. This editorial is an attempt to draw attention to the nature and scope of communication disorders in the Indian context. Such studies will not only raise awareness in the society, but will also gradually encourage management driven approach to communication disorders in the Indian society.

References

1. Sreeaj K, Suma C., Jayaram G., Sandeep M., Mahima G., & Shreyank PS. Prevalence of communication disorders in rural population of India. *Journal of Hearing Science*. 3 (2), 41-49, 2013.
2. Justice, L.M. *Communication Sciences and Disorders: An Introduction*. Ohio: Pearson. Konadath, S. (2013). Prevalence of Communication Disorders in a Rural Population of India. *Journal of Hearing Science*, 3(2), 2006.
3. Parakh M, Parakh P, Bhansali S, Gurjar, Parakh O, Mathur G & Gagan M. A clinico Epidemiologic study of Neurologic Association and Factors Related to Speech and Language Delay. *National Journal of Community Medicine*, 2012, 3 (03), 518-522. Retrieved from <http://www.njcmindia.com/index.php/file/article/view/1756>.
4. Sidhu, M, Malhi P, & Jerath J. Early language development in Indian children: A population-based pilot study. *Annals of Indian Academy of Neurology*, 16 (3), 371–375, 2013. <https://doi.org/10.4103/0972-2327.116937>
5. Jayalekshmi PA, Nandakumar A, Akiba S, Gangadharan P, & Koriyama C. Associations of tobacco use and alcohol drinking with laryngeal and hypopharyngeal cancer risks among men in Karunagappally, Kerala, India – Karunagappally cohort study. *PloS one*, 8 (8), 2013, e73716. <https://doi.org/10.1371/journal.pone.0073716>
6. Bobdey S, Jain A, & Balasubramaniam G. Epidemiological review of laryngeal cancer: An Indian perspective. *Indian journal of medical and paediatric oncology : official journal of Indian Society of Medical & Paediatric Oncology*, 36 (3), 154–160, 2015. <https://doi.org/10.4103/0971-5851.166721>
7. Alanazi AA. Understanding Auditory Processing Disorder: A Narrative Review. *Saudi journal of medicine & medical sciences*, 11(4), 275–282, 2023. https://doi.org/10.4103/sjmms.sjmms_218_23
8. Arvedson J, Rogers B., Buck G, Smart P. and Msall M. Silent aspiration prominent in children with dysphagia. *International Journal of Paediatric Otorhinolaryngology*, 28 (2-3), 173-181, 1994.
9. Rogers B and Arvedson J. Assessment of infant oral sensorimotor and swallowing function. *Ment. Retard. Dev. Disabil. Res. Rev.* 11, 74-82, 2005.
10. Mossey P, & Little J. Addressing the challenges of cleft lip and palate research in India. *Indian Journal of plastic surgery : Official Publication of the Association of Plastic Surgeons of India*, 42 Suppl (Suppl), S9–S18, 2009,. <https://doi.org/10.4103/0970-0358.57182>

Citation: Srivastava P, Srivastava M. Overview of Communication disorders: Raising Awareness to encourage management drives approach. *Indian J Prev Soc Med*, 2024; 55 (1): **01-05**.