

CLASSIFICATION OF SPEECH DISORDERSDr. Shubhangi Kapil Thakur^{*1}, Dr. Anil B. Kale² and Dr. T. Y. Swami³¹Assistant Professor, Kaumarabhritya Department, R.A. Podar Medical College (Ayu) Worli, Mumbai.²HOD & Professor, Kaumarabhritya Department, G.A.C.Osmanabad.³HOD & Professor, Kaumarabhritya Department, R.A. Podar Medical College (Ayu) Worli, Mumbai.***Corresponding Author: Dr. Shubhangi Kapil Thakur**

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ABSTRACT

Speech refers specifically to sounds produced by the oral mechanism including the lips, tongue, vocal cords and related structures. Speech disorders refer to problems in producing the sounds of speech or, with the quality of voice. Speech disorders affect the way a person talks exactly what they want to say and what is appropriate for the situation, but they have trouble producing the sounds to communicate it effectively. Speech and language disorders can affect a person's ability to talk, understand, read, and write. Children may develop speech or language disorders due to conditions that affect brain development before, or after birth. Adults may develop speech or language disorders due to stroke, traumatic brain injury or brain tumors. Speech disorders include a variety of conditions that affect children and adults alike, they can range from trouble pronouncing a specific letter or sound to the inability to produce any understandable speech. Some of the result of a physical deformity others are the result of damage to the speech mechanism (larynx, lips, teeth, tongue and palate) caused by injury or disease such as cancer.^[1] Speech and language disorders are the most common of childhood disabilities that affect 1 in 12 children or 5% to 8% of preschool children.^[2] Communication disorders affecting individual social, emotional, cognitive, and behavioral well being So estimating the prevalence rate and cause of communication disorders can assist in prevention, early identification, intervention, rehabilitation and counselling. Hence, We need to study the classification of speech disorders.

KEYWORDS: Speech, speech disorders, prevalence, classification of speech disorders.**INTRODUCTION**

Speech is the unique characteristic feature of the human being. Speech is the ability to convey thoughts, ideas, or other information by means of articulating sound into meaningful words. Speech is essential for psychological development of the child and for proper convey of thoughts. It enables one person to convey knowledge to a roomful of other people. Any problem in speech will create a disturbance in the emotional and social behavior of the children. Speech as a triple Process.^[1] the reception of words by the ear or the eye.^[2] their interpretation and synthesis as language within the brain; and,^[3] finally, the expression of this language response in further spoken or write words. We regard speech as covering the whole of this receptive, formative, and expressive activity. Dimensions of the speech or speech development depend on voice, fluency, and articulation. Articulation means production of speech sounds of phonemes. Voice means production of vocal quality, pitch, loudness, resonance, and duration. Fluency means flow or smoothness of speech production. Speech disorders' can occur in all of these areas.^[4]

Speech disorder divided into three types

1. Articulation disorder /speech sound disorders.
2. Fluency disorder.
3. Voice disorder.

1. Speech sound disorders**Articulation disorder**

Articulation is used of the lips, tongue, and palate. In some cases an injury or congenital birth defect affects one or more of these body parts and leads to an inability to pronounce words correctly.

Articulation: A significant deficiency in the ability to produce sounds in conversational speech not consistent with chronological age. This includes a significant atypical production of speech sounds characterized by substitutions, omissions, additions, distortions, phonological processes, or motor planning and sequencing deficits that interfere with intelligibility in conversational speech and obstructs learning and successful verbal communication in the durational setting.^[4]

- Substitutions – replacing one sound with another sound Example: “wed”/red; “tat”/cat; “tun”/sun.
- Omissions – omit a sound in a word. Example: – “to-“top; “uh-“up; “-“nake”/snake.
- Additions – insert an extra sound within a word. “balluh”/ball; “doguh”/dog.
- Distortions – produce a sound in an unfamiliar manner imprecise sounds (“slushy” sounds, such as a lisp* - “thip”/sip)
- A frontal lisp is an error pattern in which the child produces the “S” and “Z” sounds .(sometimes “SH,” “CH,” and “J” as well) with their tongue between their teeth, instead Of behind their teeth, making the “S” sound more like a “TH” (“think”/sink). A frontal Lisp is a common error for preschoolers, and often resolves itself without direct intervention. A lateral lisp is considered atypical and generally is not corrected without intervention. A lateral lisp occurs when the student’s airflow is misdirected in the Mouth, which causes distortions and “slushy” imprecise productions of “S,” “Z,” and often “SH,” “CH,” and “J” sounds. For example, the airstream for the /s/ sound that is normally directed through the center of the oral cavity over the midline of the
- Tongue is instead thrust down laterally around the sides of the tongue.
- Motor planning – the ability to conceive, plan, and carry out a skilled oral motor act in the correct sequence from beginning to end.
- Sequencing deficits – difficulties articulating sequenced sounds needed for clear speech.
- Intelligibility – refers to speech clarity, or the proportion of a speaker’s output that a listener can readily understand.
- Phonological Processes – Phonology is associated with the rules and patterns of the sound.^[4]

Phonological disorders

Phonological disorders have phonemic errors. No difficulty executing movements for speech, but difficulties understanding the rules of language. Phonologic disorders are considered both speech and language disorders because it is the language system that is affected but they are also speech sound disorders in that the errors relate to use of phonemes, that makes it different from specific language impairment, which are primarily disorders of the morphology (word structure), syntax (grammar), semantics (meaning) and pragmatic (usage) of language rather than the sound system.^[5]

Apraxia of speech

Apraxia of speech, or verbal apraxia, is a motor speech disorder caused by damage to the parts of the brain related to speaking. People with verbal apraxia have trouble saying what they want to say correctly and consistently. They may have trouble with the rhythm and timing of speech, or they may Say something completely different from what they intended, even making up words. Apraxia may be exhibited as an articulation, fluency, or voice disorder, or a combination Of the three.

The severity can range from mild to severe. Apraxia of speech has two types -1.Developmental apraxia of speech (DAS) Or childhood apraxia of speech.2.Acquired apraxia of speech.^[6]

Developmental Apraxia of Speech (DAS) - DAS (also sometimes called CAS for childhood apraxia Of speech) occurs in children, is present from birth, and generally affects more boys than girls. As expected, children who suffer with this disorder do not babble as infants, and first words are delayed. But as they get older they may also have difficulty with long phrases and may appear to be searching for the words to express what they are thinking. Although children with DAS are usually able to understand language well, listeners are likely to have a difficult time understanding their speech.It has been observed that children with DAS often Have family members who have a history of communication disorders or learning disabilities, which suggests a genetic cause. Some research has indicated that the brain’s natural ability to change its own structure (neuroplasticity) can help children with DAS create new learning pathways for the development of speech.^[6]

Acquired Apraxia –Acquired apraxia of speech can affect a person of any age but typically occurs in adults and results in the loss or impairment of a person’s existing ability to speak. It may be the result of a stroke, head injury, tumor, or other illness affecting the brain. Due to damage in the left frontal lobe of the brain, the ability to plan and coordinate the precise order of motor movements for speech is lost. Apraxia affects adults differently than children because language is already developed. The most common symptom in adults is difficulty in putting words and syllables together in the correct order. A person suffering from acquired apraxia is fully aware of his or her own speech errors and usually makes repeated attempts to correct them.

Dysarthria

Dysarthria is a group of neurologically related speech disorders. Known as motor speech disorders, dysarthria’s are caused by lesions on the brain in areas responsible for planning, executing, and controlling the movements necessary for speech. This damage can cause speech muscles to become weak or paralyzed. Dysarthria is most common in people born with cerebral palsy (CP) or muscular dystrophy and adults who have experienced a stroke, tumor, or degenerative disease such as Parkinson’s disease.^[7]

Speech Affected by Dysarthria

- Slow, slurred, and difficult to understand due to errors in the articulation of consonants.
- Unlike some other speech disorders these errors are usually consistent and predictable. Other indications of dysarthria may include a voice that sounds as though the speaker is talking through his or her nose (due to the inability to control air flow), hoarseness, or a rapid rate of speech with a “mumbling” quality.

However, the severity of the symptoms depends on the location and amount of damage to the nervous system.^[7]

Speech affected by cleft lip or palate: Cleft palate produces speech that is nasal in quality and Can be hard to understand. Forming sounds for letters such As “t,” “k,” “s,” “sh,” “d,” and “x” is difficult because these and other consonants require contact between the palate and tongue. A cleft palate has less tissue for the tongue to touch. Vowels may sound especially nasal because they are produced inside the mouth on a controlled breath. People with an unrepaired cleft are unable to produce these sounds Properly because air escapes through the nose. They do not have the ability to “hold their breath” or control the release of a breath.^[8]

Speech affected by Deaf and Hard hearing: As might be expected, the inability to hear the sounds of speech makes it particularly difficult to learn to produce them.

2. Voice disorders

Speech voice–deficiency in pitch, intensity, resonance, or quality resulting from pathological conditions or inappropriate use of the vocal mechanism, which reduces the speaker’s ability to communicate within the learning environment. Voice disorders are caused by damage, disease, or deformity of the larynx, or voice box.^[9]

- Pitch: high, typical, or low,
- Loudness: loud, typical, or soft,
- Quality: may include descriptive terms such as hoarse, harsh, breathy, strained, or weak,
- Resonance: hyper-nasal (too much nasality) or hypo-nasal (not enough nasality).

3. Fluency disorders

Fluency disorders are related to the smoothness or rhythm of Speech. A person with a fluency disorder may hesitate, repeat words, or prolong certain sounds, syllables, words, or phrases. Stuttering and cluttering are types of fluency disorders.

Stuttering

“Stuttering occurs when the forward flow of speech is interrupted abnormally by repetition or prolongation of sound, syllable or articulatory posture or by avoidance and struggle behavior.” Most common and easily recognized speech disorder. Most stuttering began between the ages of 2 to 6 years. Characteristic of stuttering is divided into three critical groups- 1.core behavior 2.accessory behavior 3.emotional reactions.^[10]

Core Behaviors -The key feature of stuttering is the presence of involuntary discontinuities in the flow of speech. These are traditionally called core behaviors and consist of three basic symptoms: repetitions, prolongations, and blocks. Of all the core behaviors, Repetition is the most common form of disfluency observed in both typically developing children as well as children who are demonstrating early stuttering

(Ambrose & Yairi, 1999; Bloodstein & Bernstein Ratner, 2008, p. 31). Repetitions May occur at the phrase, single word (single- syllable Word and multi- syllabic words), syllable, or sound level. Prolongations are disfluencies in which sound or airflow continues but movement of the articulators is stopped, and can occur on continuant consonants (s, f, th, sh, v, z, w, r, l, y) or vowels. Prolongations are generally judged by listeners to be an atypical form of disfluency (Cordes, 2000) and are most often observed later than repetitions, although they are sometimes reported at the onset of stuttering as well (Yairi, 1997). Blocks involve stopping of both airflow and sound during the production of speech. Blocks are usually the last core symptom to be observed in the development of stuttering and are almost always perceived by listeners as an abnormal type of disfluency.

Accessory Behaviors

As disfluencies persist, the person who stutters begins to develop an awareness of his or her difficulties. It is at this point that the disorder starts to become more complex and often more severe, as layers of perceptions, expectations, feelings, and attitudes begin to take root beneath the surface symptoms. These behaviors may take the form of speech- related movements, such as lip pressing, lip pursing, or teeth clenching; extraneous body movements, such as eye blinking, head jerking, fist clenching, or stamping; or stereotypic speech utterances, such as interjections, running starts, or circumlocutions, in which the speaker uses evasive or wordy substitutions to avoid an anticipated disfluency.

Emotional Reaction

Ongoing struggle in the production of speech gradually results in deep- rooted feelings of shame, frustration, anger, anxiety, fear, negative self- perceptions, and, eventually, habitual avoidance of speaking situations. Young children may already manifest strong emotional reactions to their stuttering by 5 years of age, or even earlier.

Cluttering

Cluttered speech is another type of disfluent speech pattern. It is characterized primarily by a rapid sounding rate of speech articulation, intermittent bursts of rapid and/or unintelligible speech (particularly in conjunction with multisyllabic words), excessive production of certain disfluency types (particularly revision of previously spoken words), and interjection of meaningless filler. For example, Revision might sound like this: She wants, I mean, She ne- She ne-She needs to, like she has to find another Person who.

Summary

Speech disorders affect a person’s ability to produce sounds that create words. They are not the same as language disorders, which make it more difficult for people to learn words or understand what others are saying to them. Types of speech disorder include stuttering, apraxia, and dysarthria. There are many

possible causes of speech disorders, including muscles weakness, brain injuries, degenerative diseases, autism, and hearing loss. Speech disorders can affect a person's self-esteem and their overall quality of life. However, speech therapy, breathing exercises, and, sometimes, anti-anxiety medications can help improve speech and reduce symptoms.

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