Module 41: Speech and language disorders

This module will give an in depth look at what is the crux of being a speech and language therapist: working with individuals who suffer from speech and language disorders. We will identify the major causes of speech disorders, the ways to identify and evaluate suspected disorders, and introduce some of the common methods of treatment.

A broad range of disorders such as stuttering, aphasia, apraxia, dysarthria, and more will be defined and explored, in addition to obstacles that affect education, medical disorders, hereditary disorders, developmental diseases and disorders, and disorders that deal with voice, articulation, fluency, and specific medical conditions. Students will be prepared for more advanced study in the world of speech disorder treatments.

What you'll learn in this module:

41.1. Characteristics of speech and language disorders

41.2. Causes of communication disorders

41.3. Common speech and language disorders

41.1 Characteristics of speech and language disorders

There are reasons that the professional studies of speech and language disorders and the interest in becoming a speech and language therapist is on the rise; now more than ever parents, teachers, and loved ones are aware of the difficulties children face in schools and have many options as to a course of treatment. For instance, 20% of students who receive special education services in schools are receiving some kind of speech, language, and communication therapy during their school day.

In the case of ages 3-5 year olds, more than half of those children with a disability receive speech and language therapy services. When it comes to the adult population, it is unfortunate that heart disease or other diseases that can lead to a stroke, diseases associated with older age such as Alzheimer's and Dementia, and other medical factors often lead to communication disorders as we age.

Because of the rise of both older and younger people who receive speech and language therapy, it is important for all citizens, whether in the medical field, the speech and language field, or just a loved one of someone suffering, to understand the characteristics and implications of communication disorders when they first arise.

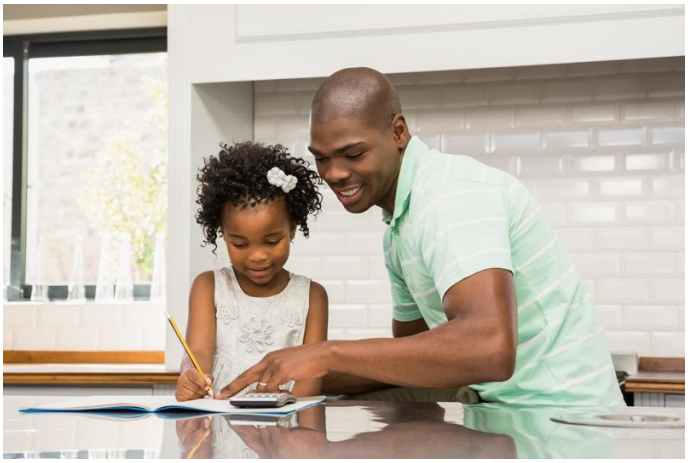
The sooner an individual who has acquired a speech or language disorder can receive treatment from a speech therapist, the more benefits they will receive. However, it must be noted that speech and language therapists cannot guarantee “cures” or “full recoveries” of all speech and language and communication disorders and diseases. Rather, based on the characteristic evidence presented by their clients and testimony of those with whom the individual regularly communicates, the speech and language therapist is able to develop a treatment plan that will provide the client with a higher quality of life and tools and techniques to communicate to the best of his or her abilities.

41.1.1 Signs of childhood communication disorders

The Individuals with Disabilities Education Act (IDEA) identifies the following description of speech and language disorders: “*Speech or language impairment* means a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child’s educational performance.”

The areas of communication concerns in school age children are in the following areas:

- articulation – speech impairments where the child produces sounds incorrectly, making it hard for people to understand the child (e.g., lisp, difficulty articulating certain sounds, such as “l” or “r”).
- fluency – speech impairments where a child’s flow of speech is disrupted by sounds, syllables, and words that are repeated, prolonged, or avoided and where there may be silent blocks or inappropriate inhalation, exhalation, or phonation patterns.
- voice – speech impairments where the child’s voice has an abnormal quality to its pitch, resonance, or loudness when air is pushed through the voice box.
- language – language impairments where the child has problems expressing needs, ideas, or information, and/or in understanding what others say.

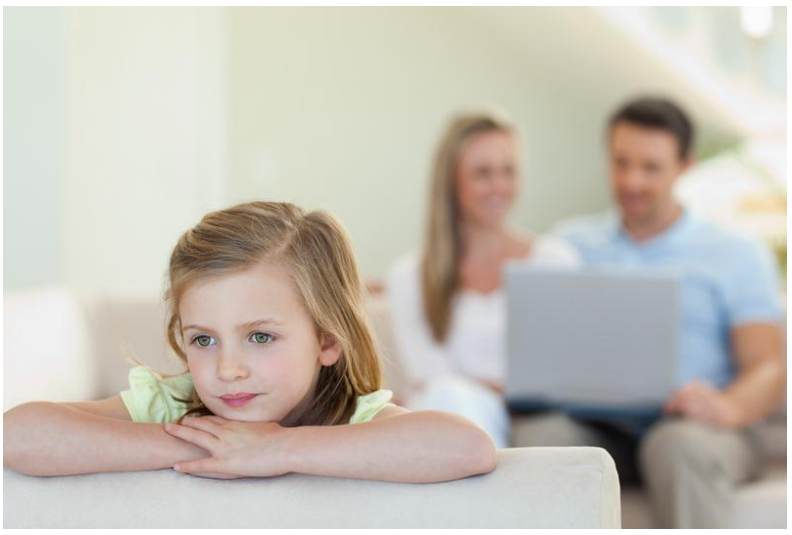


41.1.2 Distinguishing speech versus language impairments

Speech disorders deals with the above-mentioned areas of:

- Articulation
- Fluency
- Voice

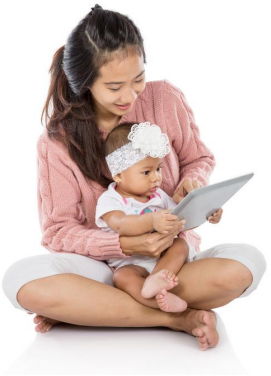
This makes speech disorders that of an expressive disorder. Expressive language disorders are fairly easy to identify, and parents are urged to seek out the guidance of school professionals and speech and language therapists if they have any difficulty understanding the words that their child speaks. Some signs of expressive disorders, otherwise known as speech disorders, are:



- a child has a limited vocabulary compared to children the same age

- the child frequently will say “um” and substitutes general words like “stuff” and “things” for more precise words
- the child has trouble learning new vocabulary words
- the child leaves out key words and confuses verb tense
- the child will use certain phrases over and over again when talking, to an excessive degree
- the child often becomes frustrated by his or her inability to communicate thoughts
- the child tends to talk very little, but understands what other people say
- while the child is able to pronounce words and sounds, his or her sentences often don’t make sense
- the child is very limited in his or her variety of sentence structure

Language disorders, in turn, are much more difficult to detect early in life. These are disorders associated with receptive language, in other words, the way that information is received and decoded by an individual’s ability to discern meaning, intent, and general understanding. Oftentimes, language disorders of this nature can be misunderstood or misidentified as mere disinterest in a subject or a child not



being willing to participate in the classroom due to defiance or disobedience. It is important not to write off children at school or at home who exhibit these behaviors,

as it may be the result of a natural coping mechanism to avoid failure. Furthermore, it might be a sub-conscious approach to not understanding or grasping what is being asked of them or what is needed of them at a particular time.

Some signs of receptive language delays in young children are:

- At 15 months old, the child does not look or point at people or objects when they are named by a parent or caregiver
- At 18 months old, the child does not follow simple directions, such as “get your coat”

- At 24 months old, the child is not able to point to a picture or a part of the body when it is named
- At 30 months old, the child does not respond out loud or by nodding or shaking the head and asking questions
- At 36 months old, does not follow two-step directions, and does not understand action words

Concerned caregivers are encouraged to seek the help of speech and language therapists if they notice any of these delays. Oftentimes, the SLP will determine that the delays are not the cause of any serious issue or medical concern and that with treatment; children can function normally and at grade level as they grow and develop. Other times, however, a much more serious underlying cause or concern might be detected and might require the services of a medical doctor for further evaluation.

Children with speech and language disorders are much more prone to developing anxiety, social issues, ADD/ADHD, issues in reading, and other mental health concerns. Through early diagnosis, the team helping a child (the parents or caregivers, teachers and school, speech therapist and medical professionals, etc.) can help equip the child with the tools he or she needs to live a fulfilling life and overcome the obstacles associated with the disorder.

Language and speech disorders are common in children and speech therapy services can greatly help a child in working through the physical, emotional, and psychological factors associated with these struggles.

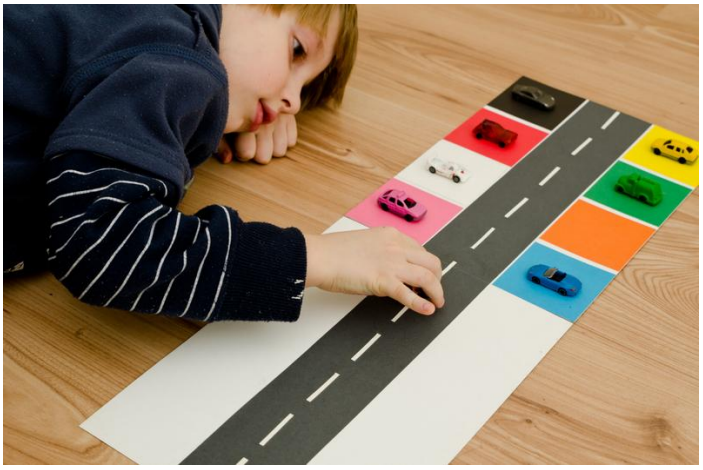
41.2 Causes of communication disorders

Many people assume that communication disorders are limited to those individuals who have some kind of learning disability, developmental disability like downs syndrome, or are on the autism spectrum. While these are certainly causes of some of the more common communication disorders

that children and adults alike face, the list is not limited solely to these more commonly known causes.

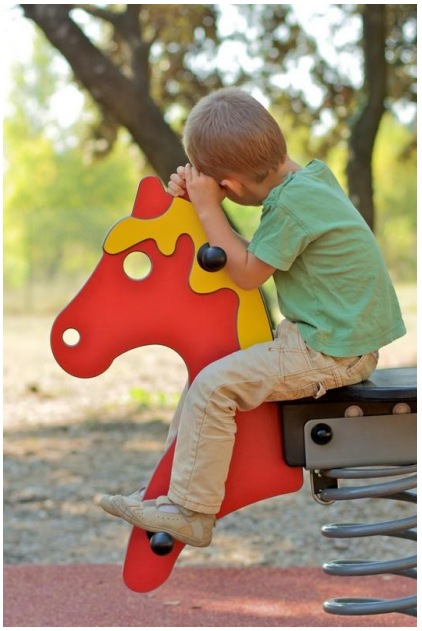
There is not one definitive answer as to what causes a communication disorder, but research and science has shown that speech and language impairments can become present as a result of varying factors; furthermore, disorders in communication can very, just like any disease or disorder, on a spectrum from mild, to moderate, to very severe. Research shows that heredity and genetic predisposition have an impact on language disorder; in fact, between 20% - 40% of children who have a family history of communication disorders will themselves experience similar diagnoses, where in contrast a very small 4% of children with communication disorders have absolutely no family history whatsoever. 20%-40% is a very large, and significant ranges of children who will at some point have difficulty in speech and language.

While it appears, on a genetic level, as the result of genetic makeup and the passing on of a particular chromosomal deficiency or DNA abnormality, many researchers believe that children andindividuals with communication and learning disorders or disabilities tend to have more difficulty with language as opposed to their peers who grow up in language-efficient settings.



Having language and communication modeled for us from infancy certainly encourages development, but also sets a child on a path where he or she has been exposed to a particular set of communicative norms. Children born into households where parents, siblings, or caretakers have communication disorders can benefit from early consultations with speech and language therapists as an intervention approach to establishing communication habits early and in diagnosing any issues that might have been inherited.

41.2.1 Disorders, disabilities, diseases, and impairments



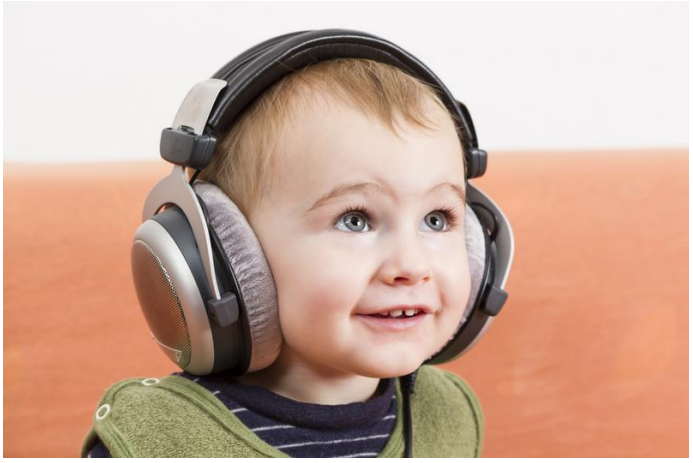
When working in a pathological science like speech therapy, it is important, when labeling the cause or root of a problem or challenge that one uses the right terminology. Many people often confuse the terms disorder, disability, disease, and impairment, which, for the average person is not that big of a deal that they should crucially be aware of the specific details that differentiate among them. However, as a speech therapist, when discussing the causes of the speech, language, hearing, or communication difficulties faced by your clients and their families or caregivers, using the right terminology can make all the difference in not creating confusion.

- disorder – the word in itself refers to disrupting the “normal” or “regular” functioning of something. Disorders do not necessary point to the point of origin or have a scientific explanation of exactly what is wrong, thus making it difficult to treat. This is why speech and language therapists focus on “coping” strategies and techniques for speech and language disorders, as there is no form of medication or surgery that can fix the issue. Treatments for conditions labeled “disorder” are usually more psychologically and physically motivated in nature.
- disability – when a physical or mental handicap prohibits someone from normal functioning in some way, shape, or form. Physical disabilities affect motor skills, learning disabilities affect the ability to learn, and some disabilities might prohibit the use of facial motor skills, the opening and closing of the larynx airway, or other areas that relate to speech and language production.
- disease – a disease is a type of disorder, yet the underlying etiology, or cause, is known. Diseases impair normal functioning, and some diseases like throat cancer, for example, can lead to communication disorders.
- impairment – an injury, illness, or congenital condition that is likely to cause defects in physiological and psychological functions. Impairments are the most closely related word to “disorders.”

41.2.2 Specific causes of communication disorders

In addition to genetics, more specifically, the major causes of communication disorders, diseases, disabilities, and impairments in speech and language are as follows:

- hearing impairments – hearing impairment of any kind, whether mild or severe to the point of deafness, is one of the leading causes of difficulty in speech and language development. Hearing exams are often the first step in investigating the cause of a communication disorder. Speech and language therapists can conduct tests to determine if hearing seems to be the cause of the client's symptoms. If hearing is believed to be the cause, the SLP will refer the client to a board certified and skilled audiologist; if hearing is eliminated as a potential cause of the speech and language impairment, further tests will be conducted by the speech therapist to get closer to the root cause of the client's issues.



- physical disabilities – a cleft lip or palate and other malformations of the mouth, nose, and facial structures will lead to communication disorders that make speaking difficult. Many children born with cleft lips or palates can undergo corrective reconstructive surgery before going home from the hospital after birth. This can often eliminate the potential of speech disorders, but does not guarantee that to be the case. Also, severe forms of cerebral palsy or other disabilities that affect the cranial or facial muscles, bones, or nerve functioning and structure can lead to difficulties in the areas of speech and language.
- developmental disabilities–individuals with developmental disabilities like down syndrome or autism will need extra assistance in language development services as they will be slower to learn to talk and develop language.
- learning disabilities – many children with dyslexia, dysgraphia, or other learning disabilities will struggle in many areas of communication, including speech and language. These setbacks with language can greatly affect academic and professional success, self-esteem, motivation, and social interactions.
- disease, illness, and injury – muscle and brain degeneration associated with many diseases can cause significant delays and difficulties in communication. Multiple sclerosis, Parkinson's Disease, Aphasia associated with a stroke, and traumatic brain injuries are some examples

of the acquired communication disorders often associated with adults and seniors who experience speech and language difficulties.

41.3 Common speech and language disorders

Whether diagnosed in childhood or adulthood, the prognosis for speech disorders is dependent on each individual case, yet with the help of a speech and language therapist, individuals can, regardless of age or the status of their disorder, find alternative methods of communication. As previously discussed in this and earlier modules, a speech language therapist is skilled in understanding the unique needs and capabilities of individuals associated with a variety of different speech and language problems. Therefore, clients who experience symptoms or diagnosis in any of the following common speech and language disorders can benefit from the therapy tools, techniques, and treatment approaches provided by a speech and language therapist.

41.3.1 Phonological process disorders

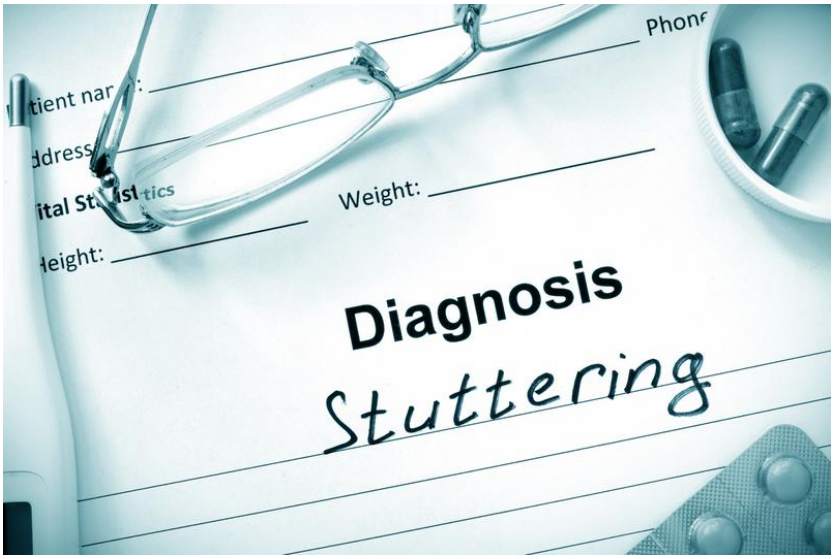
Phonological processes are the general rules that children tend to follow as they learn and acquire a language. All developing children simplify speech, thus resulting in a number of errors that are natural to their age and ability and are in line with that of their peer group. Parents often panic, concerned their child is behind developmentally in speech and language development due to some of these errors. Frustrated parents or teachers not knowledgeable in the natural phonological process we all undergo in childhood may become heavily concerned that a child is exhibiting signs of a disorder due to his or her errors in language. While it is encouraged that all concerned parents seek the guidance of speech and language therapists for clarification on their child's needs, most young children will naturally outgrow their phonological process errors and develop language normally. The children, however, whose errors in language continue to persist well beyond that of their peer group are likely experiencing a phonological disorder.

Phonological process disorders are attributed to the following:

- cognitive problems such as intellectual disabilities
- hearing impairment
- neurological conditions such as cerebral palsy
- physical conditions such as a cleft palate

41.3.2 Fluency disorders

Stuttering is the most well-known disorder associated with fluency of speech and consist of core or primary behaviors as well as secondary behaviors that might occur over time. Neurological, psychological, social, and linguistic factors can all contribute to disorders in the area of fluency. The condition can affect both children and adults alike and symptoms can occur regularly in every day interactions and speech or sporadicallyor at times of high stress and anxiety.



Features of fluency disorders are:

- repetition of sounds, syllables, and words
- prolonged production of single sounds when speaking
- blocks of airflow during speech
- vocal hesitation to speak, occurring often and repeatedly
- interjections of sounds, syllables, or words

- word revisions or complete changes in words
- excessive eye blinking, excessive hand/arm movements while speaking, loss of eye contact, and other extraneous movements during speech

Examples of fluency disorders are:

- stuttering – repetition of speech sounds, excessive pauses or interjections (i.e. “um,” “uh,” “like,” etc.).
- cluttering – rapid or irregular rate of speech that results in word, sound, or syllable omissions or blends.

Individuals should seek out guidance from a SLP if:

- there is a family history of stuttering
- stuttering has continued for 6 months or longer
- there is a presence of other speech or language disorders
- there are strong fears or concerns about stuttering on the part of the individual or the family

41.3.3 Apraxia, dysarthria, and aphasia of speech

Apraxia and dysarthria are both motor speech disorders caused by the impairment of muscles or neurotransmitters used for speech production. Aphasia is a communication disorder that comes as a result to a part of the brain that affects language. Each of these three conditions can work in isolation; however, they are often connected, present in individuals who have suffered a stroke, a traumatic brain injury, brain tumors, progressive neurological disorders, or other diseases.

Apraxia

Messages that are sent from the brain to the mouth are disrupted;therefore, the individual cannot move his or her lips to the proper place for pronunciation of speech sounds. As a result, speech sounds come out distorted or slurred, even though the speech production mechanisms such as the muscles are not weak nor have error in functioning.

Symptoms of apraxia of speech are:

- The inability or extreme difficulty in producing speech sounds, apparent due to speech errors such as sound distortions, substitutions, and/or omissions
- inconsistent speech errors
- groping of the tongue and lips to make specific sounds and words
- slow speech rate
- impaired rhythm and prosody (intonation) of speech

- better automatic speech than purposeful speech
- inability to produce any sound at all can be present severe cases

While apraxia of speech is most largely associated with adults, particularly seniors who have undergone some kind of neurological damage, children can also be diagnosed with what is called “childhood apraxia of speech.” Childhood apraxia is often the result of brain damage or genetic disorders and syndromes.

Dysarthria

When the muscles used to produce speech production are impaired, resulting in an inability to move them to create sounds, words, or phrases, dysarthria of speech is present. An impairment in the muscles of the lips, tongue, vocal folds and/or diaphragm would constitute dysarthria of speech. These muscles become damaged, usually due to some form of injury to the brain.

The symptoms demonstrated by individuals with dysarthria are:

- slurred, mumbled, or choppy speech that is often difficult to understand
- a slow rate of speech
- a rapid rate of speech that is delivered with a mumbling quality
- limited tongue, lip, and jaw movement
- abnormal use of pitch and rhythm when speaking
- changes in voice quality, such as a hoarse or breathy voice or speech that sounds very nasal, as though the person has a stuffy nose

At birth, dysarthria may occur in cases such as a child with cerebral palsy or muscular dystrophy. Otherwise, dysarthria tends to be more heavily associated with disorders and diseases that are acquired later in life. In addition to strokes, brain injuries, and tumors leading to the brain being damaged, diseases such as ALS (Lou Gehrig's Disease), MS (Multiple Sclerosis), Huntington's Disease, and Parkinson's Disease, all of which affect the nervous system, can present symptoms of dysarthria.

Aphasia

People with aphasia have suffered some kind of neurological damage to the left side of their brain, in areas associated with speech, reading, writing, and listening. It is important to note that individuals with

aphasia do not have any damage, as a result of the disorder, to their intelligence. Aphasia patients have their wits about them; their minds are perfectly functioning in terms of understanding, yet they cannot piece together the proper sounds, words, or phrases to communicate. Those individuals suffering from aphasia can experience great frustration and depression as a result of being able to comprehend what is happening around them and their level of understanding, yet not have the proper wiring in their brain to produce the things they want to say or perform the actions they want to do. Aphasia is often seen in conjunction with apraxia, dysarthria, and swallowing disorders (which will be discussed in the next learning module).

Symptoms of aphasia are:

- difficulty producing language
    - inability to come up with the words they want to say
    - substitution of the intended word with another word that may be related in meaning
    - switch of speech sounds within words (i.e. "wish dasher" for "dishwasher")
    - using completely made-up words
    - experiencing difficulty putting words together to form sentences
- difficulty understanding language
    - misunderstanding what others say
    - finding it challenging to understand speech where there is background noise or large groups or other sound related distractions
- difficulty reading and writing
    - finding challenges in the reading of any written materials from books to forms to pamphlets or newspapers
    - problems with spelling errors and putting words together to form written sentences
    - having a difficult time understanding number concepts

The main cause of aphasia is a stroke that is suffered in older age, making this disorder much more present in people over the age of 65 who are suffering from other health concerns. In addition, traumatic injury to the brain as well as progressive neurological disorders that involve the deterioration of the brain can lead to aphasia. Diseases like Multiple Sclerosis, Parkinson’s, and Motor Neuron Disease are all associated with acquiring symptoms of aphasia over time.

EXAM LINK