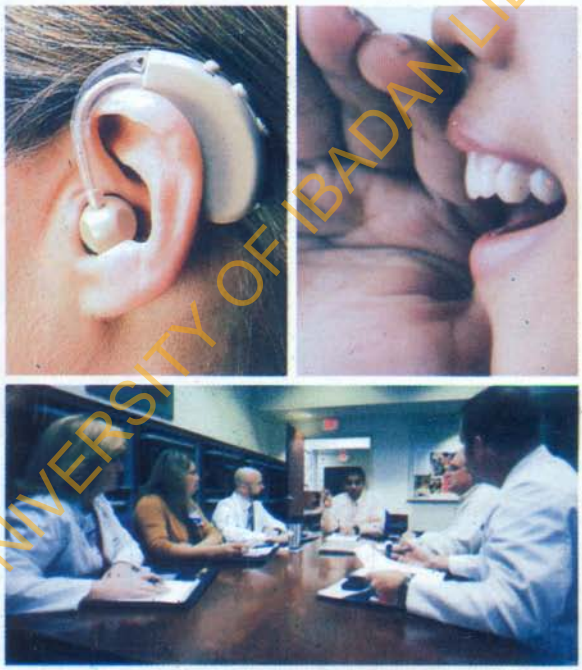
Collaboration and Advocacy in the Management of Speech and Hearing Disorders



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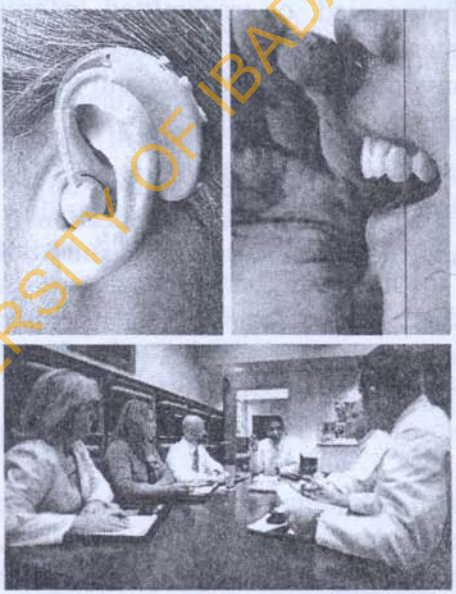

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Chapter 3

COLLABORATION AND ADVOCACY IN THE MANAGEMENT OF STROKE INDUCED SPEECH DISORDERS: APHASIA AS A CASE STUDY

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Preamble

If you are an adult, your heart is about the size of two fists put together: it is located in the centre of your chest, tilted slightly towards your left lung. This fantastic muscle works tirelessly, beating about 100,000 times a day. (Over the course of an average lifetime; that's about 2.5 billion beats). It is busily pumping about six quarters of blood to every area of the body. In just one day, the blood will travel a total of 12,000 miles; that is 40 times the distance across Nigeria, from coast to coast. And during the course of an average lifetime, the heart will pump about one million barrels of blood – more than enough to fill three supertankers.

Yet, in this country alone, roughly 55% of all deaths could be attributed to cardiovascular disease. While in other parts of the world, heart disease is virtually nonexistent, primarily due to the fact that people there subsist on a plant-based diet. In places like rural China, the Papua Islands and Central Africa, for instance, coronary artery disease is practically nonexistent.

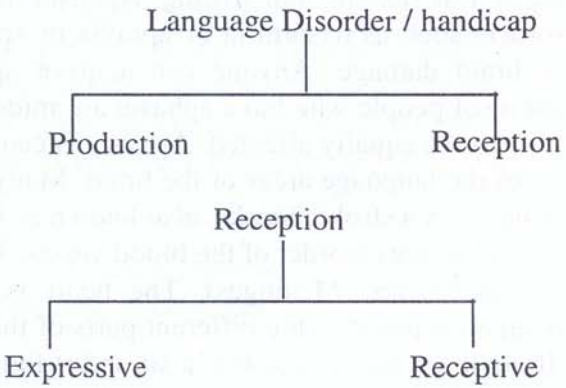
The brain is totally dependent on the oxygen conveyed by its blood supply, brain cells will die if deprived of oxygen for more than 30 seconds. There are many Cerebro-Vascular Accidents (CVAs, commonly known as "strokes") that can lead to this; it accounts for about 85% of all cases of aphasia. In Western people (adults), arteries can become "furred up" with fatty cholesterol deposits, associated with such factors as smoking diet and lack of exercise; the deposits cause narrowing and obstruction of the arteries, and this may lead to stroke. Another possibility is for the arteries to become blocked by foreign matter that has entered the blood stream, or they may haemorrhage in various ways. Whatever the reason, if these events take place in the areas of the brain that deal with language processes (something that happens in about a third of all strokes), the result is likely to be aphasia. The other causes of aphasia include certain kinds of cerebral tumor, brain diseases, and traumatic damage (head injuries due to traffic accidents, falls, acts of violence, etc.). About a quarter of all penetrating head injuries lead to aphasia.

In terms of size, the brain appears to be very small, being:

1.4kg (Men)

1.3kg (Women)

However, it consumes 25% of the total oxygen usage of the body. The reason for this is very clear, the brain is the control room for virtually all activities of the body. It is the coordinating centre of the body, the reason limping, shaking of fingers and jerking of the body are all linked to the brain.



Background

Language disorders or impairments refer to the disorders that involve the processing of linguistic information. Language disorders are the various difficulties encountered in the process of communicating with people (Adegbite. 2009). Five neural systems have been identified to be involved in communication, namely; the sensory system, the analysing system, the language system, the motor command system and the neuro-motor system. Any damage to one of these systems may result in five separate problems, which include: sensory impairment; agnosia (confusion among auditory or visual stimuli); aphasia/dysphasia (language disability); apraxias (bizarre behaviour): dysarthria (inability to articulate speech sounds). When we observe that people have problems with either the use or understanding of language, we begin to suspect that there is something wrong with those mental mechanisms that also underlie either of these two processes. Thus, we note that language disorder, impairment or disability results from a number of physiological and neurological problems affecting language use and understanding. These problems include brain damage, hearing impairment and speech defect.

Aphasia is a disorder that results from damage to portions of the brain responsible for language. For most people, these are areas on the left side (hemisphere) of the brain. Aphasia usually occurs suddenly, often as a result of a stroke or head injury, but it may also develop slowly, as in the case of a brain tumor, an infection, or dementia. The disorder impairs the expression and understanding of language as well as reading and writing. Aphasia may co-occur with speech disorders such as dysarthria or apraxia of speech, which also result from brain damage. Anyone can acquire aphasia, including children, but most people who have aphasia are middle-aged or older. Men and women are equally affected. Aphasia is caused by damage to one or more of the language areas of the brain. Many times, the cause of the brain injury is a stroke. Stroke, also known as Cerebro-Vascular Accident (CVA) is any disorder of the blood vessels of the brain and it is covering membranes (Meninges). The heart is like a pumping station that supplies blood to the different parts of the body, including the brain. If anything happens to the heart and it fails to supply blood

to the brain, the consequence is stroke. Most cases of stroke are due to atheroma (abnormal fatty deposit in an artery) and / or hypertension, the effect of cerebral haemorrhage or inadequate supply of blood to the brain (Ischaemia), due to cerebral thrombosis or embolism. Cerebro-Vascular Accident is given to the clinical syndrome accompanying a sudden and sometimes severe attack, which leads to stroke. A stroke occurs when blood is unable to reach a part of the brain. Brain cells die when they do not receive their normal supply of blood, which carries oxygen and important nutrients. Other causes of brain injury are severe blows to the head, brain tumors, brain infections and other conditions that affect the brain.

Impact of Aphasia

Aphasia has a significant impact on a person's life, often turning everyday communicative situations into a struggle to understand and be understood. Improvement of the communicative ability in daily life of persons with aphasia is the main goal of aphasia therapy. This may be achieved in several ways, largely depending on the type and severity of aphasia. The intervention may involve counselling the relatives of the patient and training in alternative communication strategies. For persons with prominent linguistic level disorders, at least part of aphasia therapy is spent on the main linguistic skills: semantic, phonological and syntactic processing. ***Aphasia is present in about a quarter of all stroke patients and has a large impact on their quality of life.*** Treatment may be focused on the language deficit, on compensatory strategies or on using residual skills in communication. With regard to treatment focused on the language deficit, the cognitive linguistic approach was recently recommended as a standard practice. Cognitive linguistic treatment aims to improve processing at the affected linguistic level, for example, semantics (word meaning), implicitly assuming that training of basic language skills will result in improved verbal communication.

Signs and Symptoms

Some signs and symptoms typical of language disorders or impairments exhibited in individuals with aphasia. These are the following:

i. Dysfluency.
ii. Repetition of sounds, words or phrases after age four.
iii. Frustration with attempts to communicate.
iv. Head jerking or shaking while talking.
v. Eye blinking while talking.
vi. Embarrassment with utterance.
vii. Articulation deficiency.
viii. Insensible words by age three.
ix. Absence of consonants at the beginning of words by age three.
x. Absence of consonants at the end of words by age four.
xi. Constant issues with articulation after the age of seven.
xii. Leaving out sounds where they should occur.
xiii. The distribution of sounds.
xiv. Substitution of incorrect sound for a correct one (like see as ski).
xv. Voice disorder.
xvi. Pitch deviation.
xvii. Deviations in loudness of the voice.
xviii. Quality deviation.

In addition to the above, there are some signs of aphasia, which are the following:

xix. Difficulty in speaking.
xx. Trouble understanding speech.
xxi. Difficulty with word recall.
xxii. Problems with reading or writing.

Aphasia is a sign of some other conditions, such as a stroke or a brain tumour. A person with aphasia may:

i. Speak in short or incomplete sentences.
ii. Speak in sentences that do not make sense.
iii. Speak unrecognizable words.
iv. Not comprehend other people's conversation.
v. Interpret figurative language literally.
vi. Write sentences that do not make sense.

Diagnosis

Aphasia is usually first recognized by a physician who treats a person for brain injury. Frequently, this is a neurologist. The physician typically performs tests that require the person to follow commands, answer questions, name objects and carry on a conversation. If the physician suspects aphasia, the patient is often referred to a speech-language pathologist who performs a comprehensive examination of the person's communication abilities. The examination includes the person's ability to speak and express ideas, converse socially and understand language, read and write as well as the ability to swallow and to use alternative as well as augmentative communication.

In some cases, a person will completely recover from aphasia without treatment. This type of spontaneous recovery usually occurs following a type of stroke in which blood flow to the brain is temporarily interrupted but quickly restored, called a transient ischemic attack. In these circumstances, language abilities may return in a few hours or a few days, in most cases, however, language recovery is not as quick or as complete. While many people with aphasia experience partial spontaneous recovery, in which some language abilities return a few days to a month after the brain injury, some amount of aphasia typically remains. In these instances, speech-language therapy is often helpful. Recovery usually continues over a two-year period. Many health professionals believe the most effective treatment begins early in the recovery process. Some of the factors that influence the amount of improvement include the cause of the brain damage, the area of the brain that was damaged, the extent of the brain injury, as well as the age and health of the individual. Additional factors include motivation, handedness and educational level.

As linguists, we study aphasia primarily to investigate the 'unusual' features in the language behaviour of the aphasics as manifested by different categories of patient. The most common method involves one-on-one question and answer interview procedure. The interview usually covers issues relating to a patient's personal social life and his/her illness in order to elicit spontaneous speech. The speech will then be recorded on a digital audio recorder and transcribed. We can then describe and analyse the patient's speech

in order to make some generalisation/about the patterns of error observable in his/her speech. In most cases, only the deviant structures are analysed.

Aphasia Therapy

Aphasia therapy aims to improve a person's ability to communicate by helping him or her use the remaining language abilities; restore language abilities as much as possible; compensate for language problems and learn other methods of communicating. Individual therapy focuses on the specific needs of the person, while group therapy offers the opportunity to use new communication skills in a small-group setting. Stroke clubs, regional support groups formed by people who have had a stroke, are available in most major cities. These clubs also offer the opportunity for people with aphasia to try new communication skills. In addition, stroke clubs can help a person and his or her family adjusts to life-changes that accompany stroke and aphasia. Family involvement is often a crucial component of aphasia treatment so that family members can learn the best way to communicate with their loved ones. Family members are encouraged to:

i. Simplify language by using short, uncomplicated sentences.
ii. Repeat the content words or write down keywords to clarify meaning as needed.
iii. Maintain a natural conversational manner appropriate for an adult.
iv. Minimize distractions such as a loud radio or TV, whenever possible.
v. Involve the person in conversations.
vi. Ask for and value the opinion of the person, especially regarding family matters.
vii. Encourage any type of communication, whether it is speech, gesture, painting or drawing.
viii. Avoid correcting the person's speech.
ix. Allow the person plenty of time to talk.
x. Help the person become involved outside the home. Seek support groups such as stroke clubs.

xi. Pictorials and colourfully written tasks which the cognitively challenged can see repeatedly and use as a recall aid to learning can be of great help.

xii. Adopting form of tutelage can strengthen.

Other treatment approaches involve the use of computers to improve the language abilities of people with aphasia. Studies have shown that computer-assisted therapy can help them retrieve certain parts of speech, such as the use of verbs. Computers can also provide an alternative system of communication for people with difficulty expressing language. Lastly, computers can help people who have problems perceiving the difference between phonemes (the sounds from which words are formed) by providing auditory discrimination exercises.

The aphasic population is heterogeneous with individual profiles of language impairments varying in terms of severity and degree of involvement across modalities of language processing including the expression and comprehension of speech, reading, writing and gesture, Code 2003 (in Basso). Variation in severity of expressive impairments, for example may range from the individual experiencing occasional word finding difficulties to having no effective means of communication.

Speech and language therapy is a field that has to do with the various measures and interventions put in place for the treatment of aphasia in order to improve communication abilities in aphasics. The most common cause of aphasia is Cerebro-Vascular Accident (stroke), mainly to the left hemisphere, where the language function of the brain is usually situated for the right handed people. The primary aim of speech language therapy in aphasia management and rehabilitation is to maximise individual ability to communicate.

Life Participation Approach to Aphasia (LPAA): This is seen as a consumer driven approach which aids individuals with aphasia and others affected by it in achieving their immediate and life-long goals. It aims at re-engaging in life, beginning with initial assessment and intervention and also continues even after hospital discharge, until the consumer (patient) no longer elects to have communication support. This approach helps to reduce the consequences of disease

and injury that contribute to long-term health loss; this is done by emphasising the re-engagement in life by strengthening daily participation in activities of choice which is driven by different things like motivation and support. LPAA is highly good and recommended, considering the dual function of communication-transmission and reception of messages as well as also establishing and maintaining social links. It does not need to be in the realm of communication in order to desire or receive information but just to know whether aphasia affects the carrying out of activities of the patient's choices and one's involvement in them.

Aphasia project group gave a list of how LPAA may lead to broadening and refocusing of services which are stated below;

- Assessment includes determining relevant life participation needs and discovering competencies of clients.
- In addition to assessing language and communication deficits, clinicians are equally interested in assessing how the person with aphasia does with support.
- Treatment includes facilitating the achievement of life goals.
- In addition to working on improving and/or compensating for the language impairment, clinicians are prepared to work on anything where aphasia is a barrier to life participation (even if the activity is not directly related to communication).
- Intervention routinely targets environmental factors outside the individual.
- In addition to working with the individual on language or compensatory functional communication techniques, clinicians might train communication partners or work on other ways of reducing barriers to make the environment more "aphasia-friendly."
- All those affected by aphasia are regarded as legitimate targets for intervention.
- In addition to working with the individuals who have aphasia, clinicians would also work on life participation goals for family and others who are affected by aphasia, including friends, service providers and work colleagues.
- Clinicians' roles are expanded beyond those of teachers or

therapists.

- In addition to doing therapy, clinicians might take on the role of: "Communication partner" and give the person with aphasia the opportunity to engage in conversation about life goals, concerns about the future, barriers to life participation etc. "Coach," "problem solver," or "support person" in relation to overcoming challenges in re-engaging in a particular life activity."
- Outcome evaluation involves routinely documenting quality of life and life participation changes.

In addition to documenting change in language and communication, clinicians would routinely evaluate the following in partnership with clients:

- life activities and how satisfying they are
- social connections and how satisfying they are
- emotional wellbeing

Concluding Remarks: Collaboration and Advocacy

All stakeholders are expected to come together and cooperate in the management and rehabilitation process of aphasics. Medical practitioners, psychologists, psycholinguists, relatives and other caregivers should work hand in gloves to ensure speedy recovery of the patients. They should create the right environment around the patients as well as set aside empathy and pity. Patients should not be made to feel disadvantaged and devastated. Stakeholders should endeavour to make patients feel at home. Everything that suggests abnormality should be avoided. In so doing, the patients' trauma would be reduced.

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