REHABILITATION METHODS FOR APHASIA RELATED DISORDERS

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بسم الله الرحمن الرحيم

(سبحانك لا علم لنا الا ما علمتنا انك)
(انت العليم الحكيم)

صدق الله العظيم

(البقرة: الاية ٣٢)

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الباحث

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List of abbreviations

AOS	*Apraxia of speech*
PROMPT	*Prompts for restructuring oral muscular phonetic targets*
EPG	*Electroplalatography*
EMA	*Electromagnetic articulography*
AAC	*Alternative-augmentative communication*
RET	*Response elaboration training*
EMG	*Electromyography*
AM	*Accent method*
CPAP	*Continuous positive airway pressure*
SLP	*Speech language pathologist*
PEG	*Percutaneous endoscopic gastrostomy*
ROM	*Range of motion*
NES	*Neuromuscular electrical stimulation*
PES	*Pharynx electrical stimulation*
DPNS	*Deep pharyngeal neuromuscular stimulation*
UES	*Upper oesophageal sphicter*
CPM	*Cricopharyngeal myotomy*
VFSS	*Videofluroscopy swallowing study*
BTX	*Botulinum toxin*

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Introduction

''Aphasia'' is an acquired language disorder in which there is an impairment of any language modality, it is not the result of a sensory or motor deficit, a general intellectual deficit, confusion or a psychiatric disorder. The disorder impairs the expression and understanding of language as well as reading and writing ***(Chapey, 2008)***.

Aphasia can be divided into three categories: fluent, non-fluent and pure aphasias. *Fluent aphasias* (also called receptive aphasias) are impairments related mostly to reception of language, speech is easy and fluent, but there are difficulties related to the input of language. Fluent aphasias are: Wernicke's aphasia, Transcortical sensory aphasia, and Conduction aphasia . *Nonfluent aphasias* (also called expressive aphasias) where is difficulties in articulation, nonfluent aphasias are: Broca's aphasia, Transcortical motor aphasia, Anomic aphasia and Global aphasia. *Pure aphasias* are selective impairments in reading, writing, or the recognition of words. Pure aphasias are: Pure alexia and Agraphia ***(kolb et al., 2003).***

Aphasia related disorders:

It is common for patients with aphasia to present with a variety of impairments that may directly or indirectly affect their functional communicative abilities ***(Chapey, 2008).***

Apraxia generally refers to impairment in the capacity to position muscles and to plan and sequence muscle movements for volitional purposes ***(Darely et al., 1975 and Duffy, 2005).*** The common forms of apraxia that may co-occur with aphasia: **apraxia of speech**(AOS) and **oral apraxia** ***(chaepy, 2008).*** The speech characteristics necessary for the diagnosis of Apraxia of Speech (AOS) include slow speech rate, sound distortions, distorted sound substitutions, sound error that are relatively inconsistent in type and location on repeated production, and prosodic abnormalities (***McNeil et al., 1997***). Oral apraxia is a difficulty in performing voluntary movements with the muscles of tongue, lips, larynx, pharynx and cheeks in nonspeech tasks, although automatic movements of same muscles are preserved ***(Chapey, 1994).***

A focal lesion in the language dominant hemisphere that results in aphasia may also result in neuromotor speech disorders most commonly **Dysarthria**, which is any combination of disorders of respiration, phonation, resonation, articulation and prosody that may result from neuromuscular disorders which lead to weakness, slowness, incoordination and change in tone (***Wanda & Richard, 2008***).

Dysphagia and swallowing difficulty are highly prevalent among acute stroke patients, nearly 65% of them suffer some degree of impairment in the ability to swallow ***(Mann & Hankey, 2000)*.** This inability to safely ingest adequate amount of nutrition places the patient at risk for complications such as aspiration related pneumonia ***(Finestone et al., 2001)***.

Occasionally, patients with aphasia, particularly those who have suffered bilateral brain damage, may present with auditory or visual agnosia (***Chapey, 2008***). **Brain (1961)** has indicated that **auditory agnosia** (one of auditory processing problems) occurs when a patient whose hearing is unimpaired fails to recognize or identify the sounds that he has heard (***Vignolo, 2005)***. **Visual agnosia** (one of visual processing problems) refers to impairment in the recognition of visual stimuli despite adequate visual sensitivity ***(Farah, 2004)*.**

Theraputic approaches for the treatment of aphasia related disorders:

Apraxia of speech;

Treatment is one of the following approaches: (1) articulatory-kinematic treatments, (2) rate/rhythm control treatments, (3) intersystemic facilitation/reorganization treatments, and (4) alternative augmentative communication (AAC) approaches (***Wambaugh et al., 2006a).***

Oral apraxia:

Chapey (1994) mentioned that oral apraxia treatment may be achieved by these techniques: Laryngeal activity techniques, Speech activity technique, and Tongue activity techniques.

Dysarthria:

Treatment of dysarthria is complex, including: (1) Modification of articulation, (2) Modification of phonation, (3) Modification of resonance, (4) Modification of respiration, and (5) Modification of prosody ***(Hegde, 2008).***

Dysphagia:

The major techniques used for swallowing therapy are (1) postural techniques, (2) sensory techniques, (3) motor exercise, (4) swallowing maneuvers, and (5) modification of diet and other techniques like (6) enteral feeding and (7) surgical intervention (***Murphy and Gilber, 2009).***

Auditory agnosia (auditory processing propblems):

Treatment has been divided into two major categories:(1)Auditory Perceptual Processing deficits, and (2)Auditory comprehension deficits ***(Marshall et al., 1998).*** Also **Chapey (1994)** described therapy as follows: Discrimination, recognition and association between

nonlanguage objects and sound, Discrimination, recognition and association between animal noises with two-or three-dimensional forms and Sound recognition.

Visual agnosia (visual processing problems**):**

Treatment can be divided into visual perception and reading comprehension (***Wang & Goodglass, 1992***). Also **Chapey (1994)** described therapy as follows; Discrimination, recognition, and matching of two-and-three-dimensional nonlanguage forms, Repeating and naming of those forms or objects, Tracing and copying of those forms or objects, Letter recognition, Repeating and naming and Copying, tracing and pantomime of letter.