

Collaboration and Advocacy in the Management of Speech and Hearing Disorders



Edited by
C. A. BAKARE
G. T. A. IJADUOLA
J. A. ADEMOKOYA
A. O. IMOJU

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All enquiries must be directed to the author:

**Speech Pathologists and Audiologists
Association in Nigeria**

www.Spaan.org.ng
info@spaan.org.ng

Contents

AUDIOLOGICAL/SPEECH- LANGUAGE CARE AND THE NEED FOR ADVOCACY. J. Abiola Ademokoya.....	1
COLLABORATION AND ADVOCACY IN THE MANAGEMENT OF SPEECH AND HEARING CHALLENGES THE NIGERIAN EXPERIENCE Imogu A.O & Ukwuije T.	8
COLLABORATION AND ADVOCACY IN THE MANAGEMENT OF STROKE INDUCED SPEECH DISORDERS: APHASIA AS A CASE STUDY <i>Oluwadoro Oludare Jacob (Ph.D) & Folorunso Emmanuel Awoniyi ...</i>	14
SPEECH-LANGUAGE THERAPEUTIC OPTIONS FOR STROKE PATIENTS: A MULTIDISCIPLINARY TEAM APPROACH <i>Ayo Osisanya</i>	25
MANAGEMENT OF SPEECH AND HEARING IMPAIRMENT AMONG SCHOOL-AGED CHILDREN THROUGH COLLABORATIVE HEALTHCARE SERVICE DELIVERY <i>Isaiah Olugbenga Ojo, Ph.D. and Oluokun O. Abimbola... ..</i>	45
COLLABORATION AND ADVOCACY AREAS: UNIVERSAL NEWBORN HEARING SCREENING (NBHS) <i>Rachel Smart – Fadairo</i>	54
COLLABORATION IN HEARING AND SPEECH CARE DELIVERY. J. Abiola Ademokoya. Ph.D.....	58
COLLABORATION & ADVOCACY IN THE MANAGEMENT OF SPEECH & HEARING DISORDERS <i>PROF. G.T.A. IJADUOLA.....</i>	63

ADVOCATING FOR UNIVERSAL NEWBORN HEARING SCREENING – AN ABSOLUTE MUST FOR NIGERIA <i>Dr Olawale OGUNDIRAN</i>	93
IMPROVING SERVICE RELIVERY IN COMMUNICATION DISORDERS INTERVENTIONS: GHANAIAN EXPERIENCE Dr. Neal Boafo, MSc., Au.D	107
RELATIONSHIPS BETWEEN SPOKEN LANGUAGE, AUTISM SEVERITY (ASDS) AND SENSORY PATTERNS Helen Nwanze (Ph.D)	116
SPEECH AND LANGUAGE DISORDERS: ASSESSMENT AND INTERVENTION STRATEGIES <i>DR. BAMIGBOYE O. GRACE</i>	120
LEGAL AND ETHICAL CONSIDERATIONS IN DELIVERING SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY SERVICES CODE OF ETHICS PROF. C. A. BAKARE	125
SPEECH-LANGUAGE THERAPY AND INTERDISCIPLINARY COLLABORATION <i>J. Abiola Ademokoya. Ph.D</i>	130

Chapter 4



SPEECH-LANGUAGE THERAPEUTIC OPTIONS FOR STROKE PATIENTS: A MULTIDISCIPLINARY TEAM APPROACH

By

Ayo Osisanya

Speech Pathology and Audiology Unit

Department of Special Education

University of Ibadan, Ibadan, Nigeria

E-mail: ayo_osisanya@yahoo.com

Introduction

Rehabilitation of individuals with stroke requires systematic and varied rehabilitative protocols as well as a multi-disciplinary team approach, with involvement of different kinds of specialists and experts who are concerned with holistic management of stroke condition.

In rehabilitating the categories of patients with marked evidence of language disruption: word formation, reception and utilisation of linguistic modalities, systematic and varied rehabilitative protocols must be institutionalised for effective stroke-care. Thus, the rehabilitative consideration for these categories of patients must also include facilities and expertise to resolve the difficulties in poor hearing or comprehending speech sounds or written language as a result of brain damage.

Stroke condition, which is characterised as a loss of ability to correctly receive and utter symbols always requires exclusive-rehabilitative strategies, involving the utilisation modalities of a full range of tasks commensurate with the patients' areas of deficits; provision both structured and unstructured platform to utilise an

increasing complex nature through assumed auditory-verbal modalities. Thus, for an effective speech and language rehabilitation for stroke survivors, proper diagnosis towards identifying the nature and degree of communication problems as well as management protocols must be structured to focus on the comprehensive (holistic) determination of the condition and treatment of cognitive-communication and swallowing in addition to psycho-physical deficits due to brain damage. The treatment must involve experts who will assist in improving the skills that might have been affected by the stroke condition, depending on the affected areas, parts of the body and age of the patients.

However, for an effective rehabilitation for stroke survivors, such intervention must be designed in such a way to help them relearn skills that are lost when part of the brain is damaged. It must also be designed to help them acquire new ways of performing tasks. For instance, the stroke survivors might need to acquire new ways of doing things, such as learning how to bathe and dress using one hand or how to communicate effectively when their ability to use language has been disrupted. Therefore, the rehabilitation models must be carefully directed, well-focused and repetitive in kind of practice (National Institute of Health, 2014), as well as consideration for an effective multi-disciplinary team-work services, including patient-centred decision-making and effective use of varied resources (Osisanya & Oyebola, 1998; McCallin & McCallin, 2009). The rehabilitation must be regularly adequate, intensive and continuous in a graduated process to ensure proper acquisition and usage of the skills, so as to reposition them back safely.

What is a Stroke?

A stroke is a condition which is characterised as an interruption of blood flow, which then deprives the brain of needed oxygen, and makes the brain cells to die.

Stroke occurs whenever a clogged or burst artery interrupts blood flow to the brain and this always results in paralysis or muscles weakness, loss of feeling, speech and language problems, memory and reasoning problems, swallowing difficulties, visual problems, state of coma; even death (SIGN 2010; NCGS, 2012). A stroke condition is a

kind of sudden reduction of blood flow to a portion of the brain, and which results into a sudden loss of speech-language, weakness or paralysis of the body. In fact, when stroke occurs, depending on the severity and nature of the injury, it can affect both sides of the body, and may also leave the person affected in a 'locked-in-state' as the person will be unable to speak or achieve any movement below the neck. The resultant effects depend on many factors which includes the location of the obstruction and how much tissue was affected. This health condition often appears disturbing because the effect of the problem is neurological complications on the other side of the body. For instance, when it occurs on the right side of the body, the patient may experience vision problems, quick and inquisitive behavioural style, and memory loss, but when it occurs on the left side of the brain, the right side of the body will be affected, with the following noticeable evidences: paralysis on the right side of the body, speech and language problems, slow and cautious behavioural style as well as memory loss (NICE, 2008). Generally, stroke affects the human body functions, in addition to other associated difficulties such as communication problems, problems with memory and thinking, problems with movement and balance, problems with vision, swallowing difficulty, as well as problems controlling bladder and bowels, and excessive tiredness (Holland & Forbes, 1993; Osisanya & Oyebola, 1998).

Types of Stroke

There are two main types of stroke: ischemic, also known as thrombotic, which is caused by a blood clot in the brain and haemorrhagic, which is caused by bleeding in the brain

1. **Ischemic Stroke-** this could be described as a brain attack, which occurs when the brain cells died due to inadequate blood flow consequent upon the blockage of an artery in the neck or brain, and brain cells are robbed of vital supplies of oxygen and other needed nutrients.

2. **Hemorrhagic Stroke-** this is a kind of burst, caused by a burst blood vessel in the brain that causes bleeding into or around the brain. Stroke is a complex condition which may affect the individual's ability to participate in social interaction, linguistic functions and other oro-motor skills. It may also impact communication skills leading to increased feeling of isolation, withdrawal from public appearance and total dependence on others to meet up needs. Thus, stroke can be life- threatening or diminishing the quality of life of those affected, even leading to their death.

Stroke as an impairment can manifest as:

Aphasia, is the most common problem among stroke survivors, this condition makes it difficult for them to speak and understand or benefit maximally from interpersonal communication as well as enjoying reading and writing as expected. Aphasia is an acquired language disorder characterised by difficulty in producing or comprehending spoken or written language. Therefore, people with aphasia will manifest language impairment involving the ability to speak, write and understand spoken as well as written language. In fact, stroke along the language-control centres of the brain always occur to impair verbal communication of the individual affected (NIH, 2014).

Dysarthria, is a muscular difficulty in producing or sustaining the range, force, speed and coordination of the movements needed to achieve clear speech

Dysphasia: difficulty in understanding and in the use of appropriate language to communicate.

Dysphagia, difficulty which is characterised as a weakness of the muscle tone which affects the ability to coordinate the muscles involved in swallowing.

Apraxia of speech, is an acquired oral motor speech disorder affecting an individual's ability to translate conscious speech plans into motor plans, which always result in limited and difficult speech ability. Individuals with apraxia of speech have difficulty connecting speech messages from the brain to the mouth.

Who are stroke patients?

Stroke patients are individuals with a marked condition of a partial or total deviation from biochemical norms of anatomical, physiological, psychiatric and psychological models, which enveloped deficits in language, neuro-psychological and motor functions (Holland & Forbes, 1993). Stroke patients are the categories of medically certified individuals with a unique loss of oro-motor functions as a result of brain damage. In line with this, stroke condition is being referred to as an organic disorder. Also, stroke patients experience paralysis or muscle weakness, loss of feeling, speech and language problems, memory and reasoning problems, swallowing problems as well as problems with vision or visual perception.

Common Signs and Symptoms of Stroke

- Sudden confusion and difficulty in speaking or in understanding speech
- Sudden difficulty in making adequate use of oro-motor functions;
- sudden loss of balance or loss of coordination
- Sudden difficulty in walking
- Severe headache with no known cause
- Dizziness and difficulty in seeing in one or both eyes.
- Numbness or weakness of the face, arm and/or leg

Diagnosis

Stroke is diagnosed and confirmed as a condition by medical professionals through the use of special tests, such as CT scan and MRI. Evidently, an injury to one side of the brain affects the opposite of the body, the consequences may include:

- Physical deficits- muscles weakness or paralysis, (typically on one side of the body). The condition is associated with pain, fatigue,

changes in muscle tone, gait disturbances and difficulty in performing daily living activities such as feeding, bathing, dressing and using of toilet facilities.

- Emotional deficits- display of inappropriate emotions and extreme mood fluctuations leading to anger and depression as a result of frustration due to inability to function independently.
- Sensory deficits- poor sensory functions, which is characterised by inability to synthesise sensations in identifying one's location, remembering time, events, even names of persons, places and objects.
- Cognitive deficits- difficulties in attention awareness, orientation, memory, problem solving and reasoning skills. It also manifests in the area of difficulty in concentrating when there are internal and external distractions.
- Swallowing difficulties- difficulties in coordinating the muscles in the mouth and throat due to weakness of the involved muscles (dysphagia).
- Communication deficits- difficulties in understanding or producing speech correctly (aphasia); slurred speech characterised by weak muscle tone, (Dysarthria); inability in programming oral muscles for speech production (apraxia) as well as difficulty in social communication, that is difficulty in taking turns in conversation and problem in maintaining a topic of conversation (NIH, 2014)

It is noteworthy to express that this paper shall focus only on the rehabilitation of the speech and language of stroke survivors with emphasis on multi-disciplinary team working approach.

Implications of stroke attack on communication skills.

Stroke attack (injury) can severely impair communication mechanisms of individuals with survival-experience. This might be evident in form of language impairments and poor verbal communication as well as comprehension (speech recognition; understanding and discrimination).

Stroke affects people differently, as some of the stroke patients have problems communicating after a stroke- They have communication difficulties involving speech, language and non-verbal skills such as body language, eye contact, facial expression, tone of voice and

gestures. Most of the time, they produce slurred, slowed and unclear speech, and have difficulty using words correctly as well as having proper understanding of the words and difficulty in processing incoming messages. Therefore, patients with stroke may require several speech language therapeutic services to resolve communication problems as well as improving speech production as a result of invisible weakness or deficits in motor programming, the patients will also need the speech-language pathologists, with involvement of their expert and the use of augmentative and alternative communication devices (AAC) and techniques to supplement their verbal communication. Their swallowing ability must also be worked on to resolve difficulties relating to feeding through repositioning models, feeding techniques, diet consistency changes, and education to assist them in recovering from the stroke attack.

Once the language-control centre of the brain becomes impaired, a condition known as aphasia would manifest. There are 3 common types of aphasia:

Broca's (expressive) aphasia

This is due to damage to the language centre of the brain, located on the dominant side of the brain.

Individuals experiencing this type of aphasia would have difficulty conveying their thoughts through words or writing, in addition to having difficulty to communicate out already formulated words. Also, they exhibit inability to put ideas and words together in a coherent form as well as in giving out grammatically correct sentences. In fact, individuals with this kind of aphasia will exhibit relatively good auditory-verbal comprehension. Therefore, it is regarded as non-fluent aphasia. Other classifications of this type of aphasia include transcortical motor aphasia.

Wernicke's (receptive) aphasia

This is as a result of damage to the language centre of the brain which is located in a rear portion of the brain, it always results to receptive aphasia. Thus, individuals experiencing this type of aphasia would have difficulty understanding spoken or written language. With

this type of aphasia, the individual experiencing it would be having relatively good and fluent speech, but at the same time, he/she would be having difficulty in input or reception of language. In fact, most times he/she would be exhibiting a kind of regular difficulty in auditory-verbal comprehension or in the words, phrases or sentences spoke by others. This type of aphasia can be easily regarded as Fluent Aphasia.

Other classifications of this type include: transcortical sensory aphasia, anomia aphasia and conduction aphasia.

3. Global (severe) Aphasia

This type of aphasia manifests as a result of extensive (global) damage to several (many) areas of the brain involved in language functions.

People with global aphasia could be observed having difficulty in understanding language or using language appropriately to convey their thoughts. With this type of aphasia, there is evidence of loss of nearly all the acquired linguistic abilities, and this is very common as well as paramount in the conduct of people who manifest this type of aphasia.

Generally, people with any of these types of aphasia (Broca's, Wernicke's and Global Aphasia) might also present evidence of: (1) **Paraphrasia**, which is the inability to use appropriate words or sentences as situation(s) demands. Substituting/jumbling words with unintelligible ones; (2) **Neglect**, which is a kind of inability to respond appropriately to sensory stimuli; (3) **Alexia**; inability to attach proper or appropriate meaning to visual information; (4) **Agnosia**; inability to process auditory information perfectly; (5) **Agraphia**; which is the inability to write well; (6) **Acalculia**; which is the inability to count items very well or having difficulties with numberings and figures; (7) **Anomia**; which is referred to a difficulty in naming or remembering names of people, places, things, objects etc. appropriately; (8) difficulty with memory or lack of sense of recall and (9) inability to remember things and issues due to total or partial loss of time, spaces and events.

Therapeutic Options

Evidently, rehabilitation of stroke- patients must focus on proper diagnosis, early intervention, multidisciplinary management approach and selection of appropriate therapeutic option(s) based on the nature and type of the condition of each of the patients. Thus, the following therapeutic/treatment options are the core rehabilitative strategies for efficient and effective aphasic care in this contemporary time:

1. Dysphagia Management

This is a kind of rehabilitation technique involving the modification of the food or liquid contents, temperature, taste and texture to improve swallowing functions and efficiency. This dysphagia management technique emphasises an effective mechanism to reduce the rate and occurrence of aspiration consequent upon inability to swallow enough or required food and drinks.

2. Functional Management

This is a kind of rehabilitative technique, which emphasises the use of psychotherapeutic process or strategies involving counselling options in form of sharing feelings to resolve issues relating to stroke experience. Functional management strategies incorporates several techniques including familiarisation building exercises, mutual relationship training, interaction exercises and recovery strategic exercises through the use of familiar objects to aid recovery skill of the aphasics.

3. Cognitive Restructuring Management

Cognitive restructuring management is a model of engaging in filtering mechanism to correct negative feelings and views about oneself, through questioning and reasoning interactive exercises. This rehabilitative approach involves loading and reloading mechanisms towards building a kind of measures or ideas to counter self-defeating thoughts, this could be achieved via religious thoughts, songs and positive confessions. Also, there must be concerted activities to correct deficits in motor programming, which is very common with the aphasics. It is important to note that cognitive skills must be developed through: (1) using a memory log to keep track of daily

happenings so as to help memory; (2) using an organiser or action notepad to plan tasks, and (3) building strategies to increase awareness of deficits in order to help self-monitoring.

4. **Physical Management**

This rehabilitative strategy involves the use of physiotherapeutic as well as physical exercises to activate and re-activate the relaxed muscles after the stroke experience. It entails regular physical use of the limbs (passive/active motion exercises), regular massaging and healthy courage to repeatedly making use of the impaired limbs and regular walk/ talk exercises. This technique involves some goal-directed activities such as jokes, playing of games or story-telling so as to lessening the rate or level of worries, anxiety and state of despair experienced by the aphasics.

5. **Drug management**

This is a purely medical approach being handled by the medical practitioners towards rehabilitating the categories of aphasics who might need drug therapy. This management approach involves giving out some drug recommendations such as antidepressant, this is essential to prevent a second stroke by controlling high blood pressure; diabetes and other risk factors such as excessive weight and high cholesterol. Drug management is given in terms of rehabilitative measure to keep the aphasics functional through the support of drug usage.

6. **Mobility Training Strategy**

This mobility training is directed towards retraining the stroke patients on how to coordinate themselves and walk effectively with/or without assistance, depending on the state of rehabilitation. Mobility training is being anchored by either the physiotherapists or physical training experts towards making the aphasics enjoy independent mobility skills

Occupational and Recreational management

With this rehabilitative strategies, efforts are geared towards exposing the aphasics to several activities that will aid them to learn/relearn how to carry out planned actions, so as to enjoy independent or successful life. Here the occupational/ recreational experts that the stroke survivors are exposed to activities towards learning and relearning of skills needed to perform self-directed/needed activities, such as feeding, bathing and dressing independently. In addition, the training exercises would build up strategies to learn and relearn of activities towards one's safety, it also gives room for various opportunities and activities to recreate in building up sound health, independence and quality of life.

Communication Management Strategies

In rehabilitating the aphasics, the communication management strategies must focus on the act of improving the linguistic skills that have been affected by the stroke. The therapies must be structured towards improving the patient's ability to understand or produce language. It must also be drawn to focus on improving initiation of conversation, turn-taking, classification of ideas, and repairing of conversational breakdown (Nancarrow, Booth, Ariss, Smith, Enderby & Roots, 2013) as well as retaining word retrieval. To record considerable improvement in the area of communication, the following must perfectly and thoroughly be considered:

Hearing Evaluation and Rehabilitation

Hearing assessment is very essential because hearing is pivotal to communication. Hearing evaluation is being done by audiologists, with the use of specialised equipment towards determining the auditory acuity of the aphasics. It is also important to determine the degree, type and nature of agnosia and comprehension difficulty, which are common with majority of the aphasics. Once the hearing status is determined, it will aid adequate rehabilitation of the aphasics, because every aphasic will be attended to, based on the level of his/her problems and needs.

b. Speech and Language Assessment/Rehabilitation

The assessment towards determining the degree, type and nature of speech/ language difficulties must involve structured and unstructured speech/language assessment, this must be done to determine the nature and severity of comprehension and expressive language difficulties involved. Rehabilitation of speech and/or language disorder must be based on the nature or type(s) of the stroke experienced by the aphasics. To this end, speech and language assessment must be taken prior to the commencement of the rehabilitation programme. The rehabilitation must also include re-acquisition of ability to speak, write and understand spoken as well as written language.

In rehabilitating the stroke patients, the following speech therapeutic protocols might be recommended:

1. Coughing Therapy

This coughing therapy is popularly known as throat clearing exercises and it is being done by making the aphasics undertake several (repeated) coughing and exclamation (jargon, vocal exercises) such as ja-ja-ja; ha-ha-ha; wa-wa-wa and fa-fa-fa. Coughing therapy could be structured or unstructured rehabilitative mechanism to restore the speech and language skills of the aphasics lost due to stroke experience.

2. Verbal Expressive Training(VET)

This is a kind of therapy designed to establish voluntary phonation of words, sentences in speech production. It is used to stimulate verbal process and word recognition. VET is a treatment packaged procedure to resolve difficulties in fluent production of speech, correction of minor grammar problems, impairment in word expression and retrieval of words, word substitution and discourse failures (Pearce, 1993; Osisanya, 2007).

Verbal Expressive Therapy is achieved through conformational naming task, recall of categorised numbers (figures) and objects, as well as description of busy pictures, monologue storytelling and role playing exercises; involving talking.

3. **Picture Exchange Therapy**

Picture Exchange Therapy involves using memorable photographs to task the memory and articulatory mechanisms.

Photographs (pictures) of common (known) objects and social events as well as of different gatherings should be used to establish a perfect memory recall.

4. **Vocal Play Exercises**

This takes a form of instructional pronunciation of jargon words in a continuous- repeated exercises, the therapists work on the aphasics to be given a repeated pronunciation in a repeated form to ensure continued and sustained flow of speech.

5. **Melodic Intonation Therapy (MIT)**

MIT is a speech rehabilitative technique which involves humming, sighing or singing out in an intoned phrase(s) the requests, feelings or contributions in a communication. Basically, it involves keeping the same melodic line as the intoned sentences appear in proceeding order (Roper, 2003).

6. **Verbal exchange therapy**

This type of therapeutic model requires having a talking partner(s) that might be well known to the patient(s) such as love partner (s), friends or talking agents; which could either be devices or partners.

7. **Music therapy**

Music therapy is the intentional use of music or a model of incorporating a range of music to improve motor skills of an individual undergoing speech/language rehabilitation programme. It is a kind of rhythmic entertainment for expression of personal feelings and to elicit the full participations well as cooperation of the stroke-patients in their rehabilitation. It is the creating or singing, with rapt-listening to a choice- music as well as relaxation model.

Music therapy is designed to help the brain develop capacity to listen and entrain the timing of muscles activation patterns towards better expressive communication and other motor skills, acquisition of social skills and improved quality of life. The act of using music remains an

intentional therapeutic model to guide a stroke-patient to a higher state of consciousness and constructive self-awareness (Edward, 2011). The choice of music should be carefully selected in line with the musical preference, background, interest, flair and attentional abilities as well as the nature of the patient (s). The music presentation must be gradual, solemn and repetitive in play, while the patients must be encouraged to follow in singing or in humming the voice at the initial stage and be assisted to make steady progress. The stroke-patients should be encouraged to master and regularly use the common words used in music (songs) constantly, even when the music is not on.

Benefits of multi-disciplinary team approach in rehabilitating stroke patients

In the world over, multi-disciplinary team approach has become a prevalent medical service delivery. It has also been considered as an effective interprofessional collaboration to deliver safe and high-quality patient-centred care across the world in the last 30 years (Department of Health, 1996; Institute of Medicine, 2000; World Health Organisation, 2010). This collaborative approach of medical service delivery is directly supported by the medico-legislative policies and practices to care for patients with complex medical issues.

Multi-disciplinary team approach encourages flexible and holistic healthcare services in meeting the needs of patients in the 21st century. It is meant to resolve the complexity hitherto depriving the patients from enjoying effective medical service delivery. In fact, before the advent of multi-disciplinary team approach, the healthcare practice then encouraged individual professions to emphasise distinctiveness rather than togetherness and protection of practices rather than evidence of effectiveness. Thus, professional isolation was dominant over collaboration (Reeves, Lewin, Espin & Zwarenstein, 2010), which in essence deprived the patients then from having access to effective and high-quality care, as well as multi-disciplinary team approach offers.

Multi-disciplinary team approach is designed specifically to improve interdisciplinary team work in managing patients within the hospital setting. It focuses on proper interventions; working together

to share expertise, knowledge and skills; sharing patients' files and well-structured case conferencing approach to impact on patients' care promptly and accurately. This team approach is very beneficial to the patients and the healthcare service providers, for, it entails a dynamic process involving two or more health care professionals with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning or evaluating patient care. Globally, this process is accomplished through interdependent collaboration, open communication and shared decision making, as this in turn generates value-added patient, organisational and staff outcomes (Xyrichis & Ream, 2008).

According to Nancarrow, et .al (2013), the need for multidisciplinary team work is increasing as a result of a number of factors which include: an ageing population with frail older people and larger number of patients with more complex needs associated with chronic diseases; the increasing complexity of skills and knowledge required to provide comprehensive care to patients; increasing specialisation within health professions and corresponding fragmentation of disciplinary knowledge resulting in no-one healthcare professional being able to meet all the complex needs of their patients; the current emphasis in many countries' policy documents on multi-professional team work and development of shared learning; and the pursuit of continuity of care within the move towards the continuous quality improvements. With this, collaboration is acknowledged as an important component of team processes. Thus, in recording the expected outcomes and improved health care service delivery for patients with complex health problems, the health professionals are increasingly working now as an interprofessional team. Consequently, the stroke patients have been benefitting maximally from this arrangement in most advanced countries of the world. In fact, coordinated multidisciplinary team work has made a significant contribution towards improvements in the quality of care of within stroke services over the past five years (Clarke, 2010).

Stroke condition, which is one of the most common causes of death all-over the world has received a significant improvement in terms of the kind of rehabilitation available for the stroke survivors

nowadays, due to multi-disciplinary team approach. This approach necessitated the involvement of different professionals (such as neurologists, physiotherapists, rehabilitation nurses, speech-language therapists, vocational therapists, physical therapists, occupational therapists, social workers, counsellors/psychologists, and care givers) in managing the stroke survivors. Each of these professionals work together as a team to resolve the problem of the stroke patients pertaining to the specific areas of specialty. In the area of stroke rehabilitation, multidisciplinary team approach has been to effect some changes along the process. The changes include making or commencing stroke rehabilitation as early as possible (immediately) after stroke experience, ensuring functional recovery through repetitive task-oriented training targeted at goals or activities relevant to the needs of patients and ensuring intensified training towards the restoration or rehabilitation of the impaired motor functions and mobility, cognitive and communication problems, visual disturbances as well as resolving issues relating to psychological distress and the challenges of coping with stroke (which is a kind of long-term health condition).

According to the report of Stroke Unit Trialists' Collaboration of 2007, evidently, multi-disciplinary team approach when compared with conventional care has brought about an improved healthcare service delivery to the stroke patients. It has also led to the long-term reductions in death among the stroke survivors, dependency and the need for institutional care by these categories of patients. To this end, policy makers expressly link improvement in quality of patient care with team work (Clarke, 2010). In fact, better patient responsiveness, more efficient use of resources, increased healthcare gains, integrated care pathways involving complex interprofessional interventions are found to be increasingly used in stroke care (Cramin & Nieboer, 2011) due to the fact that multi-disciplinary team approach has become an integrated stroke care among the healthcare service delivery.

More importantly, with multi-disciplinary team approach, the aphasics have been enjoying an integrated or holistic rehabilitative care towards resolving their communication difficulties. Through multi-disciplinary team care approach, different professionals who are

concerned with management of speech-language and hearing difficulties work in an integrated way in attending to the need of the aphasics. In essence, the rehabilitation of communication challenges of the aphasics have become an interprofessional stroke care approach. With this, all the professionals who have either direct or indirect service towards the rehabilitation of the aphasics work as an integrated stroke team. By this, improved or desirable interventions and rehabilitation stroke care are now available globally for the aphasics. This in turn has culminated into an improved life and psycho-social wellbeing, improved communication and motor functions among the aphasics.

Practical Hints for Successful Speech-language Therapies for Aphasics

1. The Speech-language therapists should endeavour to assess and determine the nature of the aphasia promptly and use appropriate remediation strategies to resolve all issues and lost skills.

2. The therapies must be progressive and steady, directional and individualised in addressing the needs of each patient.

3. Counselling platform/sessions must be incorporated from the beginning of the therapies.

4. Full cooperation and total involvement of the aphasics must be sought as well as the involvement of the family members.

5. Combination of structured and unstructured speech-language therapies must be harnessed for effective and efficient rehabilitation.

6. Effort must be made to remediate and improve all skills that have been affected by the stroke-experience.

7. Concerted effort must be geared towards enforcing specific drills and concepts to: enable the patient (s) acquire the required skills for word retrieval; practice conversational skills, and also encourage to acquire strategies to make their speech more intelligible.

8. Effort must be geared towards incorporating multidisciplinary team approach in rehabilitating the aphasics, as this will offer them the privilege of enjoying varieties of rehabilitative care and attention.

9. The rehabilitation must commence early and must be based on integrated care pathways involving complex interprofessional interventions.

10. Rehabilitation of the aphasics in multidisciplinary team approach must be collectively catered for, to receive safe and high-quality patient-centred care. All inter-professionals must work conscientiously to realise the goals of multi-disciplinary team approach. Differences in this integrated care pathways must be addressed at case-conferencing mutually.
11. For a smooth working relationship among the inter-professionals in multi-disciplinary team work, someone among the team members should be considered as the leader of the team who will establish a clear direction and vision for the team, while listening and providing support and supervision to the team members (Nancarrow et.al, 2003).
12. The multi-disciplinary team members must endeavour to incorporate a set of values that clearly provide direction for the team's service provision and these values should be made visible and consistently portrayed so as to achieve the goals of multi-disciplinary healthcare service delivery to the aphasics. Also, the team members must demonstrate a team culture and interdisciplinary atmosphere of trust, where contributions of the members are valued and consensus is fostered (Nancarrow et.al, 2013).

Conclusion

Stroke-attack is a condition, as afore-stated causing paralysis or problems in controlling movement; sensory disturbances, including pain and fatigue; problem using or understanding language; problem with thinking and memory as well as emotional disturbances. Therefore, to resolve these difficulties, multidisciplinary rehabilitative approach must be institutionalised to involve different experts and varieties of techniques and skills. More importantly, the speech – language therapies must be effectively utilised to aid the recovery of the lost skills and resolve difficulty in speech production and comprehension or language usage, swallowing, memory and overall oro-motor functions. For effective and efficient rehabilitative care for the aphasics, effort must be made to commence the intervention process early and progress steadily. The progress must be evaluated periodically, so as to determine and monitor the impact of the

intervention strategies, integrated care and involvement/ roles of each of the inter-professionals involved in the team care.

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