

Application of Multimodal Stimulation Methods to Expressive Language Disorders in Patients with Broca Aphasia: Case Report

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Abstract

Background: The tool used in communication itself is language. Language has an important role in everyday life, in everyday life humans use language to communicate between humans in the form of sound symbols produced by human speech organs.

Objective: The general objective of the research is to optimize post-stroke client recovery so that they are able to carry out quality functional communication independently.

Method: Multimodal Stimulation Method for Expressive Language Disorders in Patients with Broca's Aphasia.

Results: Based on the initial test results, the client got a score of 0 and after the final test the client got a score. This shows an improvement.

Conclusion: Support and motivation from the client's family is one of the supporting factors for the success of therapy

Key words: Broca's aphasia, multimodal stimulation, expressive language

INTRODUCTION

Social interaction is the key to all human life, without social interaction humans cannot socialize and adapt to the environment. To interact, we need communication. Communication itself is the delivery of information in the form of ideas verbally. In fact, sometimes through gestures or hand movements, body language or body gestures, and writing. However the most effective communication is by verbal means. The tool used in communicating itself is language. Language has an important role in everyday life, in everyday life humans use language to communicate between humans in the form of sound symbols produced by human speech organs. However, if there is a language disorder, the communication will not work as expected. One of the language disorders experienced by people with aphasia. Aphasia is a language disorder caused by damage to parts of the brain. People with aphasia can experience speech disorders, comprehension disorders, reading and writing disorders. The Association Internationale Aphasie has informed the public that people with aphasia can experience difficulties in many ways. These things are something that usually happens in everyday life, such as: having conversations; talking to neighbors, reading books, newspapers, magazines or street signs, understanding jokes or telling jokes, writing letters or filling out forms, making phone calls, and also saying his own name or the names of family members. (Nasrullah et al. 2020.17). Aphasia is often caused by a stroke. In addition, aphasia can be caused by tumors, trauma, degenerative diseases. Stroke is a disorder of brain function that arises suddenly and can happen to anyone and anytime. Stroke is a condition that arises due to a disturbance in blood circulation in the brain which results in the death of brain tissue, causing paralysis of the limbs, speech disturbances, thought processes, as a result of impaired brain function..

According to the World Health Organization (WHO) in 2018, stroke is the second cause of death and the third cause of disability. Sudden death of some brain cells due to lack of oxygen supply when blood flow to the brain is lost due to a blockage or rupture of an artery to the brain. (Al Asrori, M., & Hermawati, H. 2021.1). The incidence of aphasia according to The American Speech Language

Hearing Association is estimated to be 180,000 new cases of aphasia per year in the United States, The Speech Therapy Journal (JAWARA) is a scientific journal containing publications on new ideas, theoretical and practical elaborations and case studies related to language disorders, speech, voice, dysfluency and swallowing. The existence of the JAWARA journal is a form of Politeknik Arutala Johana Hendarto to participate in a scientific reference source for skills and services in the field of speech therapy, child development, special education, neurolinguistics and other scientific communities related to the rehabilitation of swallowing and communication functions.

with a prevalence of around 1 million people in 2015 in the United States. (Fitri, F & Lastri, D. 2019.126). Based on statistical data regarding the number of client cases that experience aphasia is quite high, and this language disorder problem will cause serious things if it is not treated as early as possible. The need for handling in the early stages and on target is expected to reduce the impact that occurs. Treatment can be promotive, preventive and rehabilitative. Speech therapists play a role in dealing with language disorders in aphasic patients who experience language disorders, in a rehabilitative way, namely restoring or optimizing the abilities of existing or existing patients. On that basis, this study aims to explain the results of the implementation of multimodal stimulation in improving expressive language skills in patients with Broca's aphasia..

CASE STUDY

A. Patient Description

A man (I.I) aged 57, had his first stroke in February 2019, with blood pressure 160/90 mmHg and cholesterol 240 mg/dL. After a stroke, the patient has difficulty in communication. In this study, the patient's language skills were assessed using TADIR on 7 March 2022. Based on the results of the assessment, it was concluded that the patient had Broca's aphasia (Table 1).

Table 1. TADIR Norma Profile

	<u>Tidak mungkin</u>	<u>Sangat Terganggu</u>	<u>Terganggu</u>	<u>Sedikit Terganggu</u>	<u>Normal</u>
<u>BICARA</u>					
<u>Informasi pribadi</u>	1	2	3	4	5
<u>Menyebut</u>	1	2	3	4	5
<u>Menamai</u>					
<u>Tingkat kata</u>	1	2	3	4	5
<u>Tingkat kalimat</u>	1	2	3	4	5
<u>Bercerita</u>					
<u>JTK 40 per 60 detik tidak lancar</u>					
<u>Membaca bersuara</u>	1	2	3	4	5
<u>Meniru ucapan</u>	1	2	3	4	5
<u>Pemahaman Bahasa Lisan</u>					
<u>Tingkat kata & kalimat</u>	1	2	3	4	5
<u>Pemahaman Bahasa Tulis</u>					
<u>Tingkat kata & kalimat</u>	1	2	3	4	5
<u>Informasi Pribadi</u>	1	2	3	4	5
<u>Menulis</u>					
<u>Informasi Pribadi</u>	1	2	3	4	5
<u>Dikte</u>	1	2	3	4	5
<u>Tingkat kata</u>	1	2	3	4	5
<u>Tingkat Kalimat</u>	1	2	3	4	5

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GOALS AND THERAPY PROGRAM

a. Duration and Frequency of Therapy

Therapy is carried out for 45 minutes each meeting starting from the opening, core activities to closing. The number of meetings during the study were eight meetings of assessment and ten meetings of therapy with one meeting for evaluation.

b. Therapeutic Method

Multimodal Stimulation

c. Therapeutic Steps

At the time of carrying out the therapy the instructions that the author gave used simple sentences because the client's understanding was at the simple sentence level. The steps of the method used by the author in carrying out the therapy later are based on the following explanation:

In provoking a response, more than one modality can also be applied, for example by asking the patient to say the name of a picture, told to repeat the word, told to write the word and then told to

say the word, in addition to being applied successively in this way the modality with more disturbance lightly applied first followed by modalities with more severe disturbances. This explanation is the basis for the author to apply several method steps compiled from better client modalities (Prins.2002.156). As below are the steps that the author made based on the modality owned by the client:

1. The author shows 2 photos, 1 as a distractor and 1 as a target and asks the client to pay attention to the photos.
2. The author asks the client to point to the photo according to the author's request
3. The writer shows the writing of one word and asks the client to point to a photo that matches the writing.

4. The author asks the client to imitate the author's speech.
5. The author asks the client to name the photo.
6. If the client is wrong in naming or does not respond, the author corrects the client's answer.
7. Then the author shows the photo again and the client is asked to name the photo.

d. Assessment Indicator

1. Response Criteria

The response criteria to assess the client's expressive language skills, namely:

- a. It is given a value of 1 if the client is able to name a photo of a family member according to the stimulus without literal and verbal parafascia
- b. It is given a score of $\frac{1}{2}$ if the client is able to name a photo of a family member with a literal but understandable paraphasia
- c. It is given a value of 0 if the client is unable to name a photo of a family member according to the stimulus or there is verbal paraphasia or the client does not respond

2. Success Criteria

Success criteria are used to assess the extent of the success rate of therapy. In this case the author uses a rating scale to measure the client's ability after therapy is carried out using the method expressed by M. Nazir with the following steps and formula:

- a. The author did the initial test
- b. The author performs therapy activities
- c. The author did the final test
- d. The author compares the number of posttest and pretest
- e. Then the difference is used as a criterion of success

Based on the steps above, the author formulates the amount of increase as follows: $T1 - T0 = \text{Number of Upgrades}$

Note :

T0 = before therapy X = therapy activities T1 = after therapy

The author makes success criteria to determine the client's level of success before therapy and after therapy using 3 rating scales, namely successful, moderately successful and unsuccessful. That is by calculating the difference between the final test and the initial test.

Success: it is said to be successful if the client gets a score of 4-5

Quite successful: it is said to be quite successful if the client gets a value of 2 - 3.99

Unsuccessful: said to be unsuccessful if the client scores 0-1.99

RESULTS AND CONCLUSION

After carrying out 10 therapeutic sessions using the Multimodal Stimulation method, it can be concluded that:

1. Based on the specific goals set by the author, with material on the names of family members, the results of an increase are included in the successful category.
2. Based on the results of the initial test the client gets a value of 0 and the final test the client gets a value This shows an increase.
3. In the implementation of therapy, the client's condition is easily tired so that it affects the success of therapy.
4. The client's receptive language ability is good enough so that it influences the success of therapy
5. In the implementation of client motivation therapy during therapy influences the success of therapy.
6. The support and motivation of the client's family is one of the supporting factors for the success of therapy.

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