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THE SYNTACTICAL ANALYSIS OF THE INFLUENCE OF SPEECH THERAPY TO POST STROKE PATIENTS WITH BROCA'S APHASIA'S SPEECH ABILITY

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Abstract

Although there are many studies about post-stroke, the research about this study is rare. This study aims to analyze the influence of the speech ability of post-stroke patients affected by Broca aphasia before and after speech therapy in terms of syntax. This study uses a qualitative description method. The data in this study were conversations from three post-stroke patients before and after speaking therapy on YouTube videos. This data were analyzed based on Language Acquisition theory regarding language acquisition classifications. There are several types of syntactic structures in language acquisition of the patients before and after speaking therapy and their influence on their speech ability of post-stroke patients in this thesis, Patients no longer experience holophrastic (one word) and two words. This study shows the ability to utter of three post-stroke patients before speaking therapy of the type of syntactic structure, namely, telegraphic speech (70.27%), short sentence is (16.21%) and two words is (8.10%) and holophrastic (5.40%). The ability to utter of three post-stroke patients after speech therapy of the type of syntactic structure of telegraphic speech is (66.32%), short sentence is (33.67%), holophrastic and two words are (0%). It can be concluded that speech ability of patients is limited to simple sentences after speech therapy.

Key words: influence, speech ability, speech therapy, post-stroke

A. INTRODUCTION

The use of language occurs in the communication activities. According to Wardiah, Jannahtul & Leni (2017:180) say language is always evolved over time. Language can develop because of many factors such economy, education, social condition, migration, and globalization. Moreover, Marzita et al (2013:163) say languages act as the fundamental element in daily communication. People use the

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language to give the information, give the ides, and also express the emotional of the people itself. Communication activities are done in verbal and non-verbal ways. The process of understanding and producing of speech in the form of words and sentences occurs in the verbal communication. It means that this process occurs when the people utter the words and the sentences that they hear in the communication activities. If the people get difficulties in comprehending and producing the language, there might experience language disorder.

Language disorder occurs in the Broca's aphasia patients who get the stroke. Holland (2009:149) states that it can happen in part of the left hemisphere of the brain that has damage. Left hemisphere damage gives the impact to the verbal communication. Broca's aphasia is a stroke effect, inability of the patients in producing the language but understand the messages such as letters, words and sentences problem. Most of the patients with Broca's aphasia say the main point of the utterances or the letters that easy to spell. It makes the listener listen carefully what the sufferers said. In the acute stroke, the patients cannot speak at all. These cases happen to depend on how serious stroke that affects for the part of the brain, ages, health condition, and the personality of the patients.

Language acquisition is closely related to a child's social development in the formation of social identity because language is one of the means to express feelings, desires, and stances. According to Rambyong (2012), some important elements are needed in the mastery of language that is linked with the soul and cognitive development of the child itself, such as time, space, modalities, causation, and deitics. Birner (2011) added that they used the language not only interact with their parents, but also with their society. It is supported by Hutabarat et al (2012:1) that language acquisition is a complex process which has developmental stages that must be followed by an acquirer in order to have good language knowledge. So, People must be able to use the language because the language has the function to express the attitude, behaviour, feelings, and other. Because language has not come like a magic, people have to go through several stages to be able to interact with the surrounding.

The acute stroke phase lasts from 1 to 3 months which make the sufferers very difficult to say the letters, word, and the sentences. In the bad condition, the patients cannot speak at all. While post-stroke phase will last 1-12 months. The attack after stroke for the patients is not only leaving the paralysis but also language disorders. Paralysis and speech impairment occurs because the brains cells are damage which are the parts of the brain have lacked and excess blood in the brain. The variation impact of stroke is greatly depending on the damage caused by stroke itself. Broca's aphasia is the most cases that many suffered by the post-stroke patient.

The patient disjointed words and sentence construction is poor. Broca's aphasia patients know when they make mistake. They try to correct their imperfect speech result in the fillers, pauses, and struggle. The content of words (nouns, verbs) may be used in speech, but sentences are difficult to produce due to problems with grammar, resulting in "telegraphic speech". In the extreme form, spoken utterances may be reduced to single words. Broca's aphasia is compromised by the shortened length of utterances and the presence of self-

repairs and disfluencies. Ardila (2012) also says patients with Broca's aphasia may also have difficulty with word retrieval or anomia. Kljajevic (2011:9) agrees that Broca's aphasia found at the sentence pattern in relying on word order. So, speech is non-fluent, poorly articulated, agrammatical, and produced with significant effort and short utterances (single words, nouns). In addition, patients with Broca's aphasia comprehend spoken and written language better than they can speak or write. These patients self-monitor, are aware of their communicative impairments, and frequently try to repeat or attempt repairs.

Broca's aphasia patients generally speak spontaneously but it is not fluent and has difficulty in grammaticism such as using grammatical form. It is often referred to as morphosyntactic disorders which are difficult to combine the words and also the part of sentences to be a perfect sentence. The patients cannot express what their idea by perfect speech. The patients know the mistake when they speak and try to repair. Shortly, it happens fillers, pauses, and struggle. Telegraphic speech also happens to Broca's aphasia patients because the message contained only the most important word to express the idea.

As a result, patients can speak spontaneously after a stroke even without speech therapy. But it does not guarantee that the sufferers succeed in uttering the word and sentences clearly and perfectly, so the patient must do speech therapy to improve their language. Speech therapy is performed to improve vocabulary and patient language skill. In addition, the most important thing during speech therapy processes is to restore the patient's speaking ability in pronouncing the words and able to produce the sentences base on the rule of sentence structure.

There are many kinds of research that have studied about brain damage especially Broca's aphasia. Not all of the researchers can be noted in this thesis, but there are some studies which are close. They are Kunst et al (2013). Ferreiro (2003), Embick et al (2000) and also Athoillah (2014). All the researchers have studied about Broca's aphasia but they have different studies for each other. Kunst et al (2013) had observed about the effectiveness in a case of expressive aphasia resulting from stroke. Ferreiro (2003) also observed about "Verbal Inflectional Morphology in Broca aphasia". She focused her thesis on substitution error and tenses sentence. Embick et al (2000) with their research "A syntactic Specialization for Broca's Area" was focused on sentences impaired especially in grammar and spelling of the patients. And by Athoillah (2014) with the title "The Ability of Indonesian Language Pascal-stroke Patients Broca's Aphasia in RSUD Gambiran Kediri: Analysis of Phonology, Morphology, and Syntax". This thesis has different focused with previous studies above, which are analysed speech ability post-stroke patients with Broca's aphasia after speech therapy and the influences speech therapy for the patients to recover their language. So, this research analyzes the influence of speech ability to have speech therapy to poststroke patients with Broca's aphasia.

This study focused on the syntactical analysis of the influence of speech therapy to post-stroke patients with Broca's aphasia's speech ability. The researcher will see the use of four types of syntactical structure four types in analyzing speech ability to post-stroke patients with Broca's Aphasia before and after speech therapy Furthermore, the reason why this topic is important to be

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studied because people should be aware that there are some troubles especially in linguistics elements of post-stroke for the sufferer in social interaction. Another reason is stroke is the high rates death illness in this world. So, this research aims to analyze the syntactical analysis of the post-stroke patients with Broca's Aphasia's speech ability before and after speech therapy based on the language acquisition theories.

B. RESEARCH METHOD

Based on the research problem and the data were collected, the type of this study is qualitative research. It means that the data were not collected by numbers, but the data came from the documentation. The purpose of this study was to explain the empirical reality behind the phenomena in depth and detail. Then study through a qualitative approach was consistent with Broca's aphasia problems sufferer by videos. It attempted to match the empirical reality of Broca's aphasia with prevailing theories about language disorder in terms of medicine and linguistics using descriptive methods. Descriptive research intention was to make factual and accurate information about the data, properties and relationships phenomena studied. In the study of language, descriptive research methods tended to be used in qualitative research.

The data in this study were the utterances of the post-stroke patients with Broca's aphasia before and after speech therapy. It was obtained from the saying words and sentences that come out from post-stroke patients after speech therapy in the YouTube videos. The language was the object of research and the use of language (post-stroke patients) become subjects in this study. The data were the form of utterances from post-stroke patients found in YouTube videos. The words and sentences were data on this research. The source of the data took place in YouTube videos that showed about post-stroke patients with Broca's aphasia after speech therapy.

Techniques of analysis the data in this research were based on the theory as proposed by Miles and Huberman (1984:21): data reduction, data display, and drawing conclusion/verification. In reduction of the data, all of data were reduced and organized. In data display, the data were displayed into tables. The data were followed by clear explanation how the data of how the post-stroke patients with Broca's aphasia's speech ability before and after having speech therapy belong to holophrastic, two words, telegraphic speech, and simple sentence types.

C. RESULT AND DISCUSSION

1. Research Finding

The data were between post-stroke patients and Broca's aphasia before and after speech therapy. Conversations that have been made between patients with therapists can identify the ability to speak of patients before and after speech therapy. Although the questions posed by therapists are generally not the same. But, basically it has little in common.

In the case of patient A before conducting speech therapy, his therapist asks about what happened to the patient and also his feeling about the condition. After doing speech therapy, the therapist asks questions about what he has done so far.

Although the question is different, the answer from patient A almost has similarities, namely by telling the activities that they do and also his emotional. The therapist asks patient B about the names of patient, her problem, and the patient's aphasia before speech therapy. The same question is also submitted to patient B after doing speech therapy.

Different from patient A and B, patient C before speech was told about her names, the background why she got aphasia, and also thank you in the video. After speech therapy, patient C also utters the same sentences with difference ways of speaking.

In this case, the influence of speech therapy described on the post-stroke patient with Broca's aphasia before and after speech therapy in the form of four aspects: holophrastic, two words, telegraphic speech and short sentences. There are significant differences between post-stroke patients with Broca's aphasia. Speech therapy has great influences in increasing their speech ability especially in producing the sentences. Post-stroke patients with Broca's aphasia didn't experience holophrastic and two words again. They are rarely doing sentence structure mistakes. Mostly, they used many simple sentences to express their thought. It is proved by the data 3 and 7 to see the influences of speech therapy to the post-stroke patients with Broca's aphasia's speech ability below:

Data	3
Data	_

	Before Speech Theraphy	4 \	After speech Therapy
T	: Okay, so what's your name?	P	: Hello, I' <mark>m</mark> Sarah Scott.
P	: Um Scot <mark>t</mark> oh <u>no</u> Sarah S <mark>cott</mark>		

Data 3 came from Sarah Scott's utterances before and after having speech therapy. The data 3 was about asking the name of the patient. Before speech therapy, patient couldn't able to say her name correctly. Patient must to think about the word that she wanted to utter by uttering "um". After that, patient uttered the family names of the patient "Scott". The patient said "no" with pause because she knew the utterances before was not correct. Finally, patient was able to utter the name appropriately. Whereas, after speech therapy, patient began with greating and introduced her name in the video. Patient was able to utter the simple sentence without some pauses and repititions.

Data 7

Before Speech Theraphy	After speech Therapy
Hello again, I'm Lau ra.	Hello, I'm Laura.

Similarly, Laura as pot-stroke patient with Broca's aphasia couldn't able to utter her name corectly. Patient experienced some pauses in uttering her names. But, patient increased her speech ability after having speech therapy. Patient could said her name without any problem.

The occurrence of speech ability of the post-stroke patients with Broca's aphasia in producing sentences before speech therapy is summarized in Table 1:

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Table 1. Percentages of Sentences Produced by Post-Stroke Patients with Broca's Aphasia before Speech Therapy

· · · I	<u>-</u>	T J
Syntactic Structure	N	%
Holophrastic	4	5.40
Two Words	6	8.10
Telegraphic Speech	52	70.27
Short Sentences	12	16.21
Total	74	100

Table 1 shows the speech ability of post-stroke patients in producing the sentences before having therapy. Telegraphic speech is frequently produced by the post-stroke patient. It is around 70.27%. Two words are (8.10%) and simple sentences are about 16.21% produced by the post-stroke patients with Broca's aphasia speech therapy. And only 5.40% the patients produce the sentence in the level of holophrastic.

The occurrence of speech ability of the post-stroke patients with Broca's aphasia in producing sentences before speech therapy is seen in Table 8:

Table 2. Percentages of Sentences Produced by Post-Stroke Patients with Broca's Aphasia after Speech Therapy

Syntactic Structure % N Holophrastic 0 0.00 Two Words 0 0.00 Telegraphic Speech 65 66.32 Simple Sentence 33 33.67 Total 98 100

Table 2 above, the researcher found the telegraphic speech is the most problem in producing a sentence for the post-stroke patients with Broca's aphasia after speech therapy. Telegraphic speech is the highest percentage in this research. It is about 66.32%. Then, simple sentences level is in the second high rates that are about 33.67%. The last is holophrastic and two words with zero percentage.

In general, there are significant differences between patients who have done speech therapy and who have not done speech therapy. Patients who have not done speech therapy have problems. The patients get problem in grammar before speech therapy. It can be seen in aspects of telegraphic speech in patients. Patients also have problem in uttering the sentence suc as do some pauses, fillers, and also repititions before speech therapy. After speech therapy, patients still experienced telegraphic speech but the grammatical mistake of the patient decreased. Patients uttered the sentence with few of pauses, repititions and fillers. The patient started to use simple sentence during the conversation. The sentence structure of the patients has improved after speech therapy.

There are some differences between post-stroke patients before having therapy and after having therapy. The patients before having therapy have the problem in producing the sentence such as express the ideas by using the single words, produce the sentence by representing two words, often do the telegraphic speech, and using the simple sentences whereas, patients after having speech therapy have great increasing in producing the sentences. The patients often do

telegraphic speech and using the simple sentences. Telegraphic speech is the biggest problem for the post-stroke patients with Broca's aphasia before and after speech therapy. Although telegraphic speech in post-stroke patients with Broca's aphasia after the speech is the highest one which is due to conversation to longer than before speech therapy.

2. DISCUSSION

In this research, the analysis of post-stroke patients with Broca's aphasia in producing the sentence found in the YouTube videos is elaborated with language acquisition theory. There are six syntactical structure stages in language acquisition theory base on Hutauruk (2015:54). They are pre-talking or cooing, babbling, holophrastic, two-words, telegraphic speech, and multiword.

The focus is between their speech ability of post-stroke patients with Broca's aphasia in producing sentences before and after speech therapy. Before speech therapy, patients uttered the sentence with telegraphic speech because they did gramatical mistake. Patient also did some pauses, repititions, and also fillers. Although, there is still had telegraphic speech utterances after doing speech therapy, but, the grammatical mistake of the patients decreased. It means that the speech ability of patients began to improve. However, the production of sentences with the type of telegraphic speech is often appreared during the coversation between patient and their therapist. Overall, the ability to speak of patients showed progress. It is based on patients doing the speech therapy to improve the speech ability. It gives the great influence on the patients to decrease their disabilities.

The speech therapy gives the good result for the patient to get the language back. According to Comprehensive Stoke Center (2016:1-2) the patients after stroke has problem in producing words because of muscle weakness. To reduce their problem, National Stroke Association (2010) recommends that speech therapy is the strategic way to handle the speaking problem. In conclusion, there is the difference result for post-stroke patients before and after speech therapy. Post-stroke patients before speech therapy in discussion get difficulties in producing words and sentences, but after having speech therapy, patients only has problem to produce sentences. Patients produce the sentence with telegraphic speech and short sentence form after speech therapy.

The result of analysis is different with the research done by Athoillah (2014). Athoillah concludes that speech ability post-stroke patients with Broca's aphasia have different characteristics because it depends on the condition of the patients. They have difficulties to say the consonant phonemes. The patients also often missed the morphemes, and unable to utter the sentence based on rules. However, in this research, patients were able to utter short sentence before and after speech therapy. The statement above is also supporting by the research from Kunts et al (2013). They discuss about the effectiveness of speech therapy after stroke for Broca's aphasia patients. They state that patients before speech therapy have problem in articulation. After speech therapy, the patients increased their vocabulary. It means, the patients have great improvement in their speech ability.

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Language impairment is the most commonly found in all of patients before and after doing speech therapy is telegraphic speech. Judging from the data obtained, this happens because generally the questions posed by therapists require detailed explanations. This means, the patient must explain in detail a question. With the conditions experienced by patients, it is difficult for patients to answer the question with correct grammar.

According to the explanation above, the results are totally different from the previous research. There is a reason why the researcher has different findings. The researcher chose different object; the researcher chooses the different speech abilities post-stroke patients with Broca's aphasia before and after speech therapy found in YouTube as the object of this research. Some of the research that has already been discussed in chapter II, they conduct research through the observation in the clinic school, and hospital.

Based on the percentage of the results of the findings, the researcher summarizes that the percentage can be compared to and after the speech before and after having speech therapy. It consists of the holophilia, two words, telegraphic speech, and short sentence that produced by patients. So, the speech therapy for post-stroke patients with increased speech ability of the patients. Speech therapy makes the patients able to interact with their social environment because speech therapy gives the best results to recover their speech ability itself. However, patients who have done speech therapy are only able to pronounce sentences to simple sentence levels. Patient cannot pronounce sentences in the form of compound, complex, and compound complex sentences even though speech therapy has been done.

D. CONCLUSION AND SUGGESTIONS

From the present study, some conclusion can be drawn in regard to syntactical analysis of the influence of speech therapy to post-stroke patients with Broca's aphasia's speech ability. The post-stroke patients with Broca's aphasia get trouble in producing the sentence before speech therapy. They tend to holophrastic, two words, telegraphic speech and simple sentences. The grammatical structure of patient is poor. They also do fillers, repetition, and pauses.

Post-stroke patients with Broca's aphasia have great result after having speech therapy. They tend to telegraphic speech and using simple sentences during the conversation. The grammatical structure is much better than before. They are fewer of pauses, repetition and fillers. Patients are only up to the level of simple pronunciation sentence after speech therapy. Patient was unable to utter a sentence in the form of a compound sentence, complex sentence, compound and complex sentence. Patient's speech ability is only limited to simple sentences after speech therapy.

Future researchers, this study absolutely still needs improvement since primarily material of the research are from videos collections. Besides, the corpus chosen for the study is based on YouTube videos that show post-stroke patients' utterances which are very small and need to be expanded. With regard to post-stroke patients with Broca's aphasia's speech ability, many other questions may arise, such as post-stroke patients with Broca's aphasia's reading ability and post-

stroke patients with Broca's aphasia's writing ability. Those factors should be taken into further research. The researcher believes that the study would give more understanding to this complicated Broca's aphasia.

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