

Literature Review: Effect of AIUEO Therapy on Speaking Ability in Non-Hemorrhagic Stroke Patients

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Article Info

Article History :

Revised: January 2025

Available online: February 2025

Keywords :

Non Hemorrhagic Stroke, AIUEO Therapy, Speech Ability

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ABSTRACT

Background & Objective: AIUEO therapy is a speech therapy that can help improve speech so that others can understand it. The method of this therapy is to move the lips, facial muscles and tongue by pronouncing the letters given such as A, I, U, E, O. The purpose of the literature review was to find references related to the effect of AIUEO therapy on the ability to speak in non-hemorrhagic stroke patients. **Method:** This literature review uses the PICOT framework method. **Result:** The results of the analysis that have been carried out in the article are known to have an effect after AIOUEO therapy on respondents who experience verbal communication disorders. AIUEO therapy is a form of rehabilitation therapy to improve the ability to speak in non-hemorrhagic stroke patients. **Conclusion:** AIUEO therapy has the effectiveness of being used in improving speech in non-hemorrhagic stroke patients.

Introduction

Stroke is a disease caused by the cessation of blood flow to the brain, causing nerve paralysis (Felinda, 2021). stroke is the leading cause of death and disability worldwide. In 2013, stroke was ranked the third cause of death, there were 5.5 million people who died and experienced an increase of 12% and in 2018 it was found that the number was around 14 million people (Wahyu, 2019). According to 2018 riskesdas data, stroke cases in Lampung province based on age 65-74 years were 2.94%, and above 75 years were 3.60%, the prevalence of stroke based on female gender was 0.90%, male 0.76% (Riskesdas, 2018).

Symptoms of stroke include sudden weakness in the body, face, arms, or legs, usually on one side of the body. Difficulty speaking or understanding speech when a stroke attacks the left side of the brain and affects the left side of the brain can affect the speech center or impairment in verbal communication (Yuliyanto et al., 2021). Disorders in verbal communication are reduced delay or inability to send, receive, and

process and use the sign system (PPNI, 2017). To improve symptoms that interfere with verbal communication, namely by means of AIUEO therapy. (Kristiyawati, 2017).

AIUEO therapy is a speech therapy that can help improve speaking well so that others can understand it. This therapy method is to move the lips, facial muscles and tongue by pronouncing the letters given such as A, I, U, E, O (Amalya, 2018). The literature review study aims to analyze more deeply the effect of AIUEO therapy on the ability to speak in non-hemorrhagic stroke patients by analyzing existing data based on articles that have been selected and analyzed.

Objective

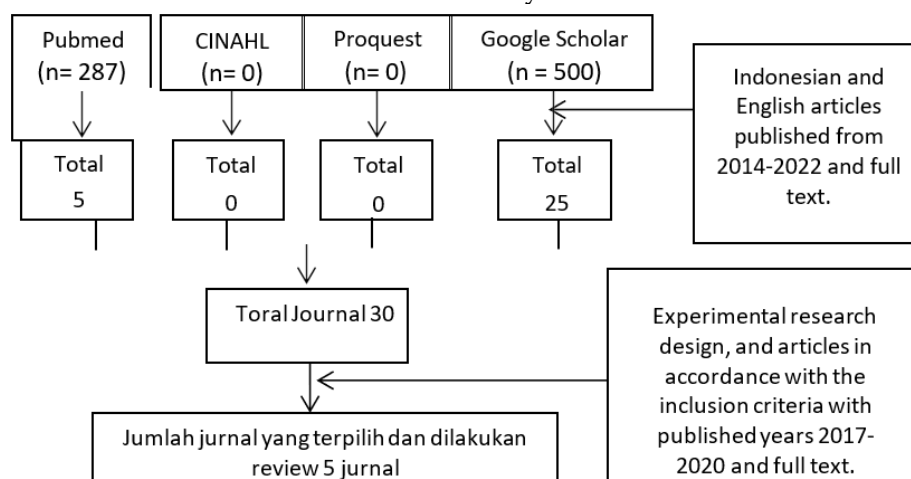
The purpose of the literature review is to explore the effect of AIUEO therapy to improve speech in non-hemorrhagic stroke patients.

Method

The method in preparing this literature review uses the PICOT framework, collecting and analyzing articles and journals related to the effect of AIUEO therapy to overcome verbal communication disorders in non-hemorrhagic stroke patients. In the literature review process, the steps taken include: formulating problems from the phenomena that occur and searching for literature online such as google scholar e-resources, PubMed, Cinahl and Proquest with keywords that have been adjusted to MeSH. Data from the literature that has been collected is then evaluated and analyzed using the PICOT framework which includes Population or problem, Intervention, Comparison, Outcome, Time, Study design, year, and language.

Literature searches were collected from the results of online journal searches, which were obtained in the form of articles or journals that were in accordance with the topic, published from 2017 to 2022. The search was conducted using google scholar with keywords in journal searches are non-hemorrhagic stroke, verbal communication disorders, AIUEO therapy. Pubmed using keywords in journal searches are stroke, AIUEO therapy, motor aphasia, speech ability. In the search researchers found 787 journals and then the journals were selected, there were 757 journals excluded because the year of publication was below 2017 and used Indonesian and English English and topics or titles that did not match. The eligibility assessment of the remaining 30 journals was ineligible for inclusion and exclusion, then 5 journals were obtained for review.

FIGURE 1. Literature Study Selection Process



Results

The results outline that the AIUEO therapy method performed can improve speech in non-hemorrhagic stroke patients. AIUEO therapy The basic recommendation in providing AIUEO therapy exercises to improve the ability to speak the ideal frequency is 1 time a day for a week, by giving AIUEO therapy as often as possible, it can produce changes in the ability to speak that are more improved. This is evidenced by research conducted by Haryanto Herlambang, et al (2014) found that the ability to speak increased after being given AIUEO therapy for 1 time a day for a week with the results obtained p value 0.000 ($p < 0.05$).

TABLE 1. Literature Search Results

Author	Title and Place of Research	Research Methods	Result / Outcome
Yunica, Dewi, Heri, Widiari, (2019)	<ul style="list-style-type: none"> AIUEO Therapy on Speaking Ability (Motor Aphasia) in Stroke Patients RSU Kertha Usada 	<ul style="list-style-type: none"> The method used in the study was Pre-experimental with One Group Pre Post Test Design. Population All stroke patients who experience speech disorders at RSU Kertha Usada Sample as many as 28 respondents in the Intervention group 	The average speaking ability after therapy increased from 3.61 to 5.21. And the results of the Paired t-test test obtained a p value (0.000) < a (0.05). It can be concluded that there is an effect of giving AIUEO therapy on the ability to speak (Motor Aphasia) in stroke patients at Kertha Usada Hospital.
Sofiatun, Kristiyawati, Purnomo, (2020)	<ul style="list-style-type: none"> Effectiveness of AIUEO therapy and The Token Test Therapy on the Speaking Ability of Stroke Patients who experience Motor Aphasia at Merdi Rahayu Kudus Hospital RS Mardi Rahayu Kudus 	<ul style="list-style-type: none"> The method used in the study was Quasy Experiment, with Two Group Pre test and Post test Design. All stroke patients in Mardi Rahayu Kudus Hospital There were 40 samples consisting of 20 respondents of AIUEO therapy intervention group and 20 respondents of The token test therapy. 	The average speaking ability during the intervention was carried out once a day for 3 days. The results of the Mann Whitney statistical test obtained a p-value of 0.000 (< 0.05) means that there is a difference in value after giving AIUEO therapy and The token test. The improvement in speaking ability can be seen from day 3 with an average AIUEO therapy speaking ability score of 29.95 while the token test therapy amounted to 11.05. It can be concluded that AIUEO therapy is more effective on the speaking ability of stroke patients who experience aphasia at Mardi Rahayu Kudus Hospital.

Wahyu, Wati, Fajri (2019)	<ul style="list-style-type: none"> • Effect of AIUEO Therapy on Speech Ability of Stroke Patients with Motor Aphasia • RSUD Ahmad Thabib Tanjung Pinang 	<ul style="list-style-type: none"> • The method used in the study was Quasy experimental with a nonequivalent control group design approach. • Population All stroke patients at Ahmad Thabib Hospital Tanjung Pinang • Sample 18 samples consisted of 9 respondents of AIUEO therapy intervention group and 9 respondents of control group 	<p>The average ability to speak before being given therapy from the total sample was only 1 person who had good communication (11%), but after AIUEO therapy, there was an increase in respondent communication, namely a total of 7 respondents (78%). With the results of the Wilcoxon test obtained a p value of 0.007 which means that there is an effect of AIUEO therapy on the speech of stroke patients who experience motor aphasia.</p>
Puspitasari, Dharmati, Fahdi (2018)	<ul style="list-style-type: none"> • The effect of AIUEO therapy on communication skills in motor aphasia of post-stroke patients in Pontianak City 	<ul style="list-style-type: none"> • The method used in the study was Quasy Experiment, with Two Group Pre test and Post test Design. • Population: All post-stroke patients in Pontianak city • There were 14 samples consisting of 7 respondents of AIUEO therapy intervention group and 7 respondents of control group. 	<p>The average speaking ability after therapy increased from 13.86 to 15.14. With the results of the t test, the p values were 0.035 ($P < 0.05$). It can be concluded that there is an effect of AIUEO therapy on the ability to communicate in motor aphasia of post-troke patients in Pontianak City.</p>
Prihatin, Kristiyawati, Arief SN, (2017)	<ol style="list-style-type: none"> 1. Differences in the effectiveness of AIUEO therapy and Melodic Intonation Therapy (MIT) on speech time in stroke patients with motor aphasia at Panti Wilasa Citarum Semarang Hospital 	<ul style="list-style-type: none"> • The method used in the study was Quasy Experiment, with a Time Series approach. • Population All stroke patients at Panti Wilasa Citarum Semarang Hospital. There were 16 samples consisting of 8 respondents of AIUEO therapy intervention group and 8 respondents of melodic intonation therapy. 	<p>The average speaking ability during the intervention was carried out 2 times a day for 5 days. The results of the unpaired t test after the 5th day of therapy obtained a value of $p: 0.004$ means that there is a significant difference between after AIUEO therapy day 5 and after melodic intonation therapy day 5. The increase in speaking ability time can be seen from day 5 with the average AIUEO therapy speaking ability score of 21.38 while the average melodic intonation therapy speaking ability score is 15.88. It can be concluded that AIUEO therapy is more effective on speaking time in stroke patients with motor aphasia at Panti Wilasa Citarum Semarang Hospital.</p>

Discussion

In the five journals, it was found that the average speaking ability increased after the AIUEO therapy technique was given, with a p-value <0.05 , which means that there is an influence or improvement in speaking ability after being given AIUEO therapy. This is in line with research conducted by Yulianto, et al (2021), with a p-value of 0.000 ($p < 0.05$) which shows that there is an effect of AIUEO therapy on speech in stroke patients who experience verbal communication disorders.

AIUEO therapy exercises are standardized patterns of language sound symbols so that when saying A, I, U, E, O the tongue, lips, and facial muscles will move so that it helps in speech recovery. The benefits of AIUEO therapy are to improve and improve communication skills both in terms of language and speech and improve swallowing ability through stimulation of cranial nerves V (trigeminus), VII (phasialis), IX (glossofarineus), X (vagus), XII (hypoglossus) and help patients in verbal communication (Amalya, 2018). The basic recommendation in providing AIUEO therapy exercises to improve speaking ability, the ideal frequency is 1 time a day for a week, by giving AIUEO therapy as often as possible, it can produce changes in speaking ability that increase. This is evidenced by research conducted by Haryanto Herlambang, et al (2014) found that the ability to speak increased after being given AIUEO therapy for 1 time a day for a week with the results obtained p value 0.000 ($p < 0.05$).

The provision of AIUEO therapy exercises is a technique for training the speech muscles used to pronounce sound symbols in standardized patterns so that patients can understand them. This is commonly called the articulation of the speaking organ, the articulation of sound or language sounds will be formed by the coordination of three elements, namely breathing, throat with vocal cords, nasal cavity mouth and chest. Vocal exercises come from the vibration of the vocal cords with the breath coming out of the mouth without resistance. In Indonesian phonomen vowels include A, I, U, E, O in vocal composition it is necessary to pay attention to the position of the shape of the tongue, lips, jaw, and soft palate (Sofiatun, 2020).

According to researchers, fast and proper handling will accelerate or minimize the risk of physical disability and other complications, problems that are often encountered such as pelo or cedal and the mouth is slanted or asymmetrical, but the provision of AIUEO therapy can help improve pronunciation or communicate well and can be understood by others.

AIUEO therapy is also an easy therapy to imitate in pronouncing vowels such as A, I, U, E, O making it easier for patients to imitate vocal formation. The implementation of AIUEO therapy exercises in stroke patients who experience communication disorders is carried out intextively, regularly, and directed so that it can affect the patient's ability to communicate well and clearly.

Conclusion

After reviewing several articles, it can be concluded that the provision of AIUEO therapy in non-hemorrhagic stroke patients can improve speech. This intervention can be carried out twice a day for seven days in order to be more optimal in overcoming verbal communication disorders.

Acknowledgement

The authors would like to express their gratitude for the support in completing the literature review study in this research.

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