

The Most Types of Articulation Disorders Occuring in Mental Retarded Dyslogia Children

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Abstract

Background: When we speak, we pronounce sound symbols or symbols through the mouth, which is called articulation, whether the spoken words are produced clearly or not, this ability is influenced by the use of movements of the articulatory organs.

Objective: The aim of the research is to find out what form of articulation failure is most visible in Dyslogia Mental Retardation clients.

Method: Articulation examination uses an examination format consisting of 69 words consisting of phonemes: bilabial, apico alveolar, dorsovelar, laminate palatal, labio dental, sibilant, glottal, roll, semi vowel and cluster, which are used by imitating the examiner's speech by noting which letters or consonants have failed speech or articulation.

Results: Children who have abnormalities or failure in articulatory production can be caused by disorders in the form of mental retardation, meaning they have mental retardation and have speech disorders, known as dyslogia. Mental retardation, the main difficulty is difficulty thinking and understanding. Life skills that can have an influence are certain conceptual, social and practical skills.

Conclusion: The research that analyzed 10 (ten) samples was secondary data, by knowing the forms of articulation failure in the form of substitutions, omissions, distortions and additions which are also known as (SODA).

Keywords: Articulation Errors, Dyslogia, Mental Retardation.

INTRODUCTION

Humans need tools to communicate with other people, the communication tools are in the form of symbols that have been agreed upon by a group of people or certain social groups. The symbols used can be in the form of codes, signals, certain codes, diagrams, pictures, or in the form of sounds, or sounds from human speech organs. This sound is further referred to as the sound of language (fone). In its development, the sounds of language become differentiators of meaning (phonemes), which are arranged in the form of words and sentences. The series of words in this sentence are able to represent human ideas, thoughts and feelings. This communication tool is then referred to as language. Child is an individual who is the next generation of offspring. According to WHO, the age limit for children is from the time the child is in the womb until the child is 19 years old. A child born into the world is the responsibility of both parents. Parents must be able to introduce children to something that they just got in their environment. Parents also have to make themselves role models to be used as examples and pay attention to every process at the stages of development that every child goes through. A child experiences development in language, speech, and motor, and social emotions which are closely related to mental. The theory states that an important period of brain formation begins in the womb, namely the second week of pregnancy or the age of 8 (eight) days to the end of the 7th (seventh) week and continues into adulthood. During the 10th (tenth) week of pregnancy, brain nerve cells can grow rapidly, reaching 250,000 new nerve cells per minute. This means that the prenatal period (the time between conception and birth) is a critical time for shaping each part of the brain and building the foundation for its future potential. Your little one's brain can already receive and send messages, and the fetus can already receive and perform reflex movements.

At week 19 the fetal brain has millions of nerves. At 25 weeks the fetal brain begins to have a wrinkled

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texture. The acceleration of the fetal brain occurs until the 3rd (three) trimester until the child is born until the age of 5 (five) years. The ability to speak and speak is an initial ability that must be owned or passed by every child, from the moment of birth into the world to start the body from days to weeks to months and years. When a child is born, if they experience the process of crying, then this is the initial capital for speaking to be able to interact and communicate with people around them or their environment.

We need to know the stages of speech language development that children must go through from babbling to being able to speak clearly, in the early stages, namely the reflex vocalization stage (age 0-1.5 months) in the form of crying which can mean the child is hungry/thirsty, or uncomfortable because pee / defecate. Another term for this stage is pre- linguistics. Next is the Babbling stage (age 1.5-3 months) where the child begins to have smiling interactions, making sounds like vowels /a,I, u,e,o/ and consonants /p,b,m/, Lalling stage (age 3- 6 months) the hearing sensor begins to function, if you hear a loud/loud sound or voice there is a startled or surprised reaction while sleeping, and the child starts making sounds that contain back consonants such as /k,g, ng/, Echolalia stage (age 6-9 months) begins to be able to imitate, babble the words /mamama, papapa/ and the last is called the True speech stage (age 12-18 months), starts to utter words that are meaningful or have meaning, according to his wishes such as saying /eating by saying maem, milk by saying granddaughter, drink by saying mimi/. Another term for this stage is called the linguistic stage. However, in reality not all children go through the speech language stages in accordance with the theory or these stages, some experience delays at certain stages, or do not go through these stages in full/completely so they are not according to the age they should be according to theory. , there are children who experience speech language development but stop at other stages, and there are also children who go through all the stages but experience delays or the age is not right or appropriate. Childhood is the basis for the formation of physical and personality in the next period. In other words, childhood is a golden period to prepare an individual to face the demands of the times according to their potential. If there is a

developmental disorder, whatever its form, early detection is an important key to the success of an intervention program or correction of the disturbance that occurs. The earlier developmental disorders are detected, the higher the possibility of achieving intervention goals. When a child is born, parents are obliged to provide both religious and worldly education to their child from an early age. This is the provision for children when they grow up to have a handle on life from the direction of their parents. Children's education is very important. Education from school will help a child not only understand the theory of the subjects being taught, but most importantly a structured and good way of learning. However, education does not only come from school but first education starts from parents, because children begin to learn from the start of hearing function, so that children can get to know their mother tongue.. In the early childhood development stage, of course there are many problems that accompany each process. However, not all children's problems have a negative impact, but can also be one of the benchmarks to help the development process. child. One of them is the problem of speech and articulation. Speech and articulation problems are a condition where children experience unclear speech, so that their words are difficult for others to catch and understand.

The term mental retardation refers to specific explanations for children who have below average intelligence. There are several other terms for this mental retardation, such as: mentally retarded, mentally defective, and so on. Mental retardation is characterized by the presence of below average mental retardation. This occurs during the period of growth and development of the child since he was still in the womb. Mental retardation also occurs due to weaknesses in the process of adaptation to the environment during the growth and development period (Jurnal of Movement and Education ISSN 2808-5205 Volume 2 number 1, July 2021). According to M. Basavana, the definition of Dislogia is, "*Dyslogia is impairment to speech due to mental retardation*". (M. Basavana. 2007. 118) Meaning: "*Dyslogia is a speech disorder due to mental retardation*". normal, and it also seems funny if his speech sounds slurred, but as it develops, if articulation disorders still occur then this can already be considered as a disorder or disease. Although articulation disorders in children do not hinder them in communicating, at school age they usually became the laughing stock of his friends.

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Mental Retardation According to Patricia Ainsworth & Pamela C. Barker definition of Mental Retardation: “*Mental retardation is a syndrome of delayed or disordered brain development evident before age 18 years that result in difficulty learning information and skills needed to adapt quickly and adequately to environmental changes*”. (Patricia Ainsworth & Pamela C. Barker.2004.3). Delay in language acquisition is the most common problem in childhood, especially during preschool. Based on information from *kompas.com* in 2014, it was estimated that around 6% of children had speech disorders, but there were also those who reported the figure was up to 19%. Usually this disorder is more often experienced by boys in Indonesia. Data collected from 7 teaching hospitals throughout Indonesia in 2007 showed that speech and language disorders ranked first in forms of child development disorders. The majority of child development disorders originate from the perinatal and neonatal periods. Because of that, every parent must assume that their child is at risk of experiencing interference so that they actively monitor their growth and development. If there is even the slightest problem, it can be quickly identified and dealt with more quickly.

According to data from the RSCM Medical Rehabilitation in 2006, out of 1125 visits to pediatric patients, 10.13% of children were diagnosed with speech and language delays. The Central Bureau of National Statistics in 2007, there were 30,460 children with mental retardation (Kemenkes RI, 2014). This number is not small, therefore children with mental retardation need special attention to continue to get their rights just like other normal children. So the child has the right to get a proper education such as school, therapy and others. Children's speech delay can be judged by the child's speech ability that does not match their chronological age. The age of development is where children acquire language and develop their language skills in everyday life, with the appropriate phone placement on a symbol. Meanwhile, one of the components of speech behavior is articulation. Articulation requires maturity in organ function and how to pronounce phone units into a phonemic must be based on POA and MOA so that the sound produced is appropriate without any articulation errors (SODA). The importance of speaking and speaking to everyone to be able to communicate in

everyday life is of course, we must help to create good environmental conditions, so that a person can develop his speech or catch up on his abilities. In addition, the existence of authorized professionals is expected to provide recovery to patients who experience communication disorders.

Articulation is the process of forming sounds, syllables and words. A person has problems in articulation if he produces sounds, syllables and words incorrectly/correctly so that listeners find it difficult to understand what he is saying or require more attention to understand what he is saying. Thus what is meant by articulation disorders are difficulties in forming sounds, syllables and words so that they are difficult to understand.

Articulation disorders include several types:

- a. Substitution which means the replacement of sound, such as: /p-/ papa becomes mapa.
- b. Omisi, which means the occurrence of loss of sound, such as: /-l/ mobil becomes mobi.
- c. Distortion, which means the occurrence of sound disturbance, such as: /b-/ buku becomes b'uku.
- d. Addition, which means the addition of sound, such as: /b-/ kata bola becomes mbola.

Rhea Paul who stated that:

- a. Articulation errors were more common in children with MR than in nonretarded children, and errors were likely to be inconsistent.
- b. Consonant deletions to be the most common type of error

In accordance with the regulation of the Minister of Health of the Republic of Indonesia number 81 of 2014 concerning speech therapy health service standards article 1 paragraph 2 that Speech Therapy is a form of professional health service based on science, technology in the fields of language, speech, voice, smooth rhythm (communication), and swallowing which addressed to individuals, families, and/or groups to improve health efforts caused by anatomical, physiological, psychological, and sociological disorders/abnormalities.

Speech therapists provide preventive services to patients with communication disorders by

developing their language, speech and speech organ functions so that they can communicate as other social beings. Regulation of the Minister of Health of the Republic of Indonesia Number 81 of 2004 Chapter 1 Concerning Speech Therapy Service Standards states that the contribution of speech therapy services to the implementation of health efforts starts from services that are promotive, preventive, curative to those that are rehabilitative. These services are carried out in various types and levels of health service facilities carried out by the government, local government, and/or the community. Based on the regulations above, speech therapy is required to provide services to everyone who has problems with language, speech, voice, smooth rhythm (communication), and swallowing..

1. Articulation Test

Examination of articulation using an examination format consisting of 69 words consisting of phonemes: bilabial, apico alveolar, dorsovelar, laminateto palatal, labio dental, sibilant, glottal, roll, semi vowel and cluster, which is used by imitating the examiner's speech by noting letters or what consonant has failed speech or articulation.

Table 1. Articulation Test Results

Phoneme	Stimulus	Response	N	S	O	D	A
A. BILABIAL							
/p-/	Paku	Patu	√				
/-p-/	Kapak	Pak			√		
/-p/	Atap	Atap	√				
/b-/	Baju	Baju	√				
/-b-/	Abu	Abu	√				
/-b/	Lembab	Aba			√		
/m-/	Muka	TR					
/-m-/	Lampu	Ampu	√				
/-m/	Selam	Am	√				
B. APICO ALVEOLAR							
/t-/	tangan	Ngan			√		
/-t-/	Tutup	Tutup	√				
/-t/	Kabut	Abut	√				
/d-/	Daun	Aun			√		
/-d-/	Dada	Dada	√				
/-d/	Ahad	Ah'a			√		
/n-/	Nangka	Ka			√		

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/-n-/	Nanas	Nanas	√				
/-n/	Makan	Aca			√		
/l-/	Lari	Kaki		√			
/-l-/	Palu	Pa'u			√		
/-l/	Kapal	Apal	√				
C. DORSO VELAR							
/k-/	Kayu	A'u			√		
/-k-/	Paku	Patu		√			
/-k/	Katak	A				√	
/g-/	Gula	U'a			√		
/-g-/	Gagak	Adak		√			
/-g/	Bedug	Dug	√				
/n-/	Ngilu	Ngil'u	√				
/-n-/	Tangga	Ta			√		
/-n/	Pedang	Dang	√				
D. LAMINATO PALATAL							
/c-/	cangkir	Akil			√		
/-c-/	Kacang	Atah				√	
/j-/	Jalan	A'ang				√	
/-j-/	Rujak	Aca				√	
/-j/	Bajaj	Ajah				√	
/ny-/	Nyala	A				√	
/-ny-/	Nyanyi	A'i			√		
E. LABIODENTAL							
/f-/	Film	A'u				√	
/-f-/	Kafan	Apa		√			
/-f/	Arif	Ahip		√			
/v-/	Visa	Asta		√			
/-v-/	Teve	TR					
F. SIBILANT							
/s-/	Sapu	TR					
/-s-/	Susu	TR					
/-s/	Bekas	Akas	√				
/z-/	Zat	Da		√			
/-z-/	Zamzam	Atay				√	
G. GLOTAL							
/h-/	Hangat	Angat			√		
/-h-/	Ahad	Akat		√			
/-h/	Basah	Aca			√		
H. ROLL/APICOAL VEOLAR							
/r-/	Radio	Adio			√		
/-r-/	Koran	Oan			√		
/-r/	Bakar	Baal			√		
I. SEMI VOWEL							
/w-/	Waduk	Wadu	√				
/-w-/	Pawai	Paai			√		
/-w/	Dancow	Dancow	√				
/y-/	Yakin	Yakin	√				

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/-y-/	Payung	Paun			√		
/-y-/	Cowboy	Cobou			√		
J. KONSONAN KLUSTER (KONSONAN DOBEL)							
/br/	Brosur	Bosul			√		
/dw/	Dwiwarna	Wiwana			√		
/fr/	Fraksi	Fasi			√		
/gr/	Gratis	Atis				√	
/kl/	Klinik	Kini			√		
/pr/	Program	Ogam				√	
/sk/	Skema	Sema			√		
/sp/	Spasi	Spasi	√				
/st/	Stabil	Cabi			√		
/sw/	Swasta	Casa			√		
Jumlah	19	18	23	8	0		

METHOD

Table 2. Description of Respondents

Name	Sex	Chronological Age	Mental Age
ZD	Laki-laki	8 Tahun	3 Tahun
NR	Laki-laki	13 Tahun	5 tahun 7 Bulan
AA	Laki-laki	11 Tahun	3 Tahun 5 Bulan
A	Perempuan	15 Tahun	3 Tahun 1 Bulan
BRS	Laki-laki	9 Tahun	3 Tahun
CR	Laki-laki	10 Tahun	4 Tahun 3 Bulan
NHA	Laki-laki	6 Tahun	2 Tahun
R	Laki-laki	6 Tahun	2 Tahun 2 Bulan
D	perempuan	7 Tahun	3 Tahun 2 Bulan
N.F	Perempuan	7 Tahun	3 Tahun 4 Bulan

Rhea Paul bahwa: *“Phonology : Articulation errors were common in children with MR than in nonretarded children, and errors were likely to be inconsistent. They found consonant deletions to be the most common type of error”*. (Paul 2007.111)

RESULT

Based on the results of articulation tests using ten (10) samples, it was found that the most common forms of errors that occur in children with mental retardation dyslogia are omissions, but there are also articulation errors in the form of substitutions and distortions. no articulation errors are additions (additions). As can be seen in the following table:

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Table 3. Correspondence Results

Name	RESPON			
	Substitution	Omission	Distortion	Addition
ZD	8	15	8	0
NR	12	14	9	0
AA	18	9	19	0
A	8	27	0	0
BRS	19	35	0	0
CR	0	30	4	0
NHA	11	14	0	0
R	25	13	0	0
D	3	9	0	0
NF	10	39	5	0

After the data is processed using SPSS, the following results are obtained:

Table 4. Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Subtitusi	.168	10	.200*	.969	10	.880
Omisi	.274	10	.032	.896	10	.200
Distorsi	.266	10	.043	.776	10	.007

Table 5. One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Subtitusi	10	11.40	7.545	2.386
Omisi	10	20.20	11.535	3.648
Distorsi	10	4.50	6.187	1.956
Adisi	10	.00	.000a	.000

Table 6. One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Subtitusi	4.778	9	.001	11.400	6.00	16.80
Omisi	5.538	9	.000	20.200	11.95	28.45
Distorsi	2.300	9	.047	4.500	.07	8.93

Table 7. Development of articulation (Kenneth G Shipley, 2009, 223)



Patricia Ainsworth, 2004: Common cause of Mental Retardation

Unknown	Large Category
Brain injury	Prenatal and postnatal; ex., cerebral hemorrhage, hypoxia, severe head injury
Infectious	Congenital and postnatal; ex., rubella, meningitis, encephalitis, congenital cytomegalovirus, congenital toxoplasmosis, HIV
Chromosomal abnormalities	Ex., errors in numbers of chromosomes or placement of genes on chromosomes, other defects in chromosomes
Gene abnormalities and inherited metabolic disorders	Ex., galactosemia, Tay-Sachs disease, phenylketonuria, Lesch-Nyhan syndrome, Rett syndrome, tuberous sclerosis
Metabolic	Ex., Reye's syndrome, congenital hypothyroidism, hypoglycemia
Toxic	Ex., intrauterine exposure to alcohol, cocaine, amphetamines, other drugs, methylmercury, lead
Nutritional	Ex., malnutrition

Environmental Ex., poverty, low socioeconomic status
(Ainsworth, et al. 2004. 4)

ANALYSIS

Looking at the results of the data above, it turns out that "Ha = 0.04 and Ho = 0.02". This means that there is a difference between the most common articulation disorders in children with mental retardation dyslogy, namely there is a significant difference, namely sg2 00.2. It can be concluded that Omission (disappearance), then Substitution (replacement) and finally Distortion (disorder).

Subtitusi	.001
Omisi	.000
Distorsi	.047

Looking at the results of the data above, it turns out that Ho is rejected and Ha = accepted. There are significant differences between articulation disorders in children with mental retardation dyslogy. The most significant of the three types of articulation abnormalities that occur in children with mental retardation dyslogy is the omission factor with sig. = 0.00 (<0.05), then the substitution factor with sig. = 0.001 (<0.05) and the third factor is distortion with sig. 0.047 (<0.05).

This is possibly due to:

- a. Giving test material to each individual is the same, namely in the form of an articulation test

This articulation test is given to find out all types of abnormalities that often occur in mentally retarded children

- b. Research Limitations

This study has limitations in terms of sample size, so that it can affect the results of this study. Therefore, a representative sample that can represent the population in Indonesia is needed for further studies. However, this could be an important early study in countries where research on this subject has traditionally been limited. Then, the suggestion for further research is to simultaneously identify three variables that can affect speech-language ability.

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