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## Reading, Writing, and Learning Disorders in Dyslexic Patients in Pematang Siantar city

Trastornos de lectura, escritura y aprendizaje en pacientes disléxicos en la ciudad de Pematang Siantar

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### RESUMEN:

Este artículo trata sobre pacientes con dislexia que no saben hablar, leer y escribir. El desarrollo de la dislexia es innato y se debe a factores genéticos o hereditarios. Las personas con dislexia llevarán este trastorno por el resto de sus vidas y no podrán curarse. No solo tienen dificultades para leer, también experimentan barreras para la ortografía, la escritura y algunos otros aspectos del lenguaje. Sin embargo, los niños disléxicos tienen niveles de inteligencia normales o incluso superiores al promedio. Con un manejo especial, los obstáculos que experimentan pueden minimizarse y la dislexia adquirida es debido a la interferencia o los cambios en la lectura del hemisferio izquierdo del cerebro.

**PALABRAS CLAVE:** Escritura, lectura, pacientes disléxicos, Pematang Siantar, trastornos del aprendizaje..

### ABSTRACT:

This paper is about dyslexia patients who cannot read, write, and speak. Developmental dyslexia is innate and due to genetic or hereditary factors. People with dyslexia will carry this disorder for the rest of their lives and cannot be cured. Not only do they have difficulties at reading, they also experience barriers to spell, write, and some other language aspects. However, dyslexic children have normal or even above average levels of intelligence. With special handling, the obstacles they experience can be minimized and acquired dyslexia occur due to interference or changes in the left brain hemisphere.

**KEYWORDS:** Dyslexic patients, learning disorder, Pematang Siantar, reading, writing..

### INTRODUCTION

This research is motivated by the presence of children aged 8-10 years who are unable to read and learning difficulties and are often scolded by their parents. This child is often rebuked by his mother by saying "you are stupid, I cannot be proud of, you moron, you haven't been in class for two years". This event is very tragic and touched my instincts as a mother to see a mother rebuking her own biological child with the statement "stupid". Though the mother's words as a "prayer".

The child who cannot read above, after being investigated turns out that the child not only cannot read, but also cannot write. The strangest thing is that the child is reading upside down, like to read a balloon read on Payom. Large read flat, market read fence. Likewise also happens when told to write. These reading and

writing deviations result in learning disruptions, the child becomes cranky going to school, lazy and annoys his classmates. This deviation is known as dyslexia.

Dyslexia usually occurs in children with normal vision and intelligence. Children with dyslexia usually speak normally, but have difficulty interpreting "spoken language" and writing. Dyslexia tends to be lowered and more common in boys. Dyslexia is mainly caused by brain abnormalities that affect sound processing and spoken language. This disorder is a congenital abnormality, which can affect the decomposition of words as well as impaired spelling and writing. (Gustianingsih: 2015, p. 12). Dyslexia comes from the Greek word "dys" which means difficulty and "lexia" which means words. In other words, dyslexia means difficulty in processing words. Dyslexia is an abnormality with the basis of neurobiological abnormalities and is characterized by difficulty in recognizing the word precisely or accurately in spelling and in the ability to encode symbols. There are two kinds of dyslexia, developmental dyslexia and acquired dyslexia.

Developmental Dyslexia is innate and due to genetic or hereditary factors. People with dyslexia will carry this disorder for the rest of their lives or cannot be cured. Not only have difficulty reading, they also experience the barriers to spelling, writing, and some other language aspects. However, dyslexic children have normal or even above average levels of intelligence. With special handling, the obstacles they experience can be minimized. And acquired dyslexia is acquired due to interference or changes in the way the left brain reads. (Duff: 2008, p.2) . Some experts also define dyslexia as a condition of input processing or different information (from normal children) often characterized by reading difficulties that may affect the areas of cognition, such as memory, input processing speed, timing ability, coordination, and control motion.

There can also be visual and phonological difficulties, and there is usually a difference in ability in various aspects of development. (Gustianingsih: 2014). Dyslexia usually occurs in children with normal vision and intelligence. Children with dyslexia can usually talk normally, but have difficulty interpreting "spoken language" and writing. Dyslexia tends to be lowered and more common in boys (Ridge: 2012, p.4). Dyslexia is primarily caused by brain abnormalities that affect sound processing and spoken language. This disorder is a congenital disorder, which can affect the decomposition of words as well as spelling and writing disorder ([http:// www.dyslexia-indonesia.org](http://www.dyslexia-indonesia.org))

## THE ORETICAL STUDY

### Concept of language disorder

Neuropsycholinguistics utilizes clinical data found to reveal the physiological and neurophysiological mechanisms that underlie language disorders / "language disorders" and this mechanism has provided a method for studying the internal structure of language and speech as well as the mechanism of the cerebrum underlying it. (Luria: 2007; 2015). Disorders of spoken language and written language caused by fractures of the brain cortex have caused problems that must be addressed by neurolinguistics and neuropsycholinguistics. Intensive collaboration between the two disciplines has succeeded in examining specific aphasia problems by linking them to related linguistic frameworks. Additionally this collaboration has tried to link physiological evidence directly to determine localization of language functions obtained experimentally from a functioning brain. These neuropsycholinguistic findings have contributed knowledge about the nature of aphasia phenomena and implicit language knowledge as described by generative linguistic experts (TG) (Weigl and Bierwisch: 2013). This knowledge has indicated something about the psychological reality of the linguistic assumptions that can manifest certain language grammar.

De Saussure (2013) in a revised edition of the language book known as a linguistic figure from Sweden revealed that language as a communication tool between humans and a social case is always the main product conveying basic ideas between people to interact, while speaking is an individual communication , has special forms of speech. These two properties are interconnected. Language is in the brain and is social in the sense of ontogenesis (developmental history) and from the point of view of its acquisition and learning. The relationships between auditory shadows and concepts are obtained by the individual as the role of objects

and people around the individual. Everyone who learns language gets it this way. Language learning is social in the sense of synchronous while speaking is idiosynchronous, because it is determined individually.

Language is natural, because it is abstract and hidden in the brain, while speaking is not natural, because it depends on the will of the speaker and is intellectual. Language is passive, while speaking is active. As a social production, language is synchronous passive and is a social bond in the form of a warehouse filled by members of a society by actively speaking, so that this social bond or warehouse is a grammatical system that has a potential existence in each brain each member of the community, in other words, in the brain of all members of society. Language is not complete in the brain of a speaker, but only in the perfect state in the brain of the community. So linguistics, according to de Saussure, must examine language, because language is a social fact, while speaking is an individual behavior and is only an embryo of speech (utterance). In other words, what comes out of the mouth of the speaker in the form of a sentence is always changing and is idiosyncratic and is therefore very suitable for linguistic study, while among the members of the community which are connected with each other by language something will be created with the same standard ('average'), which is a sign or symbol-1. the same symbol and patterned.

### **Speech perceptions in reading, writing, and learning disorder**

This theory told that the early stage of visual language processing during reading was related by writing and learning perception. Reading, clearly, is a multifaceted and complex process, and we cannot do full justice to this complexity here. Rather, our approach will be selective in attempting to identify points of similarity and difference with the early stages of auditory language processing. Visual processing of larger units of language, such as phonemes, words, group of words effected to reading, writing, and speech.(Elman Mc.Clelland: 1988).

In reading and writing words, group of words, and sentence are a method of mapping the sounds of a language into a set of written symbols. Languages differ in their spelling. Chinese characters are composed of individual strokes, with the most frequent characters usually consisting of about six strokes (Hoosain: 1991). Characters contain information regarding both meaning and pronunciation. In general, strokes related to meaning, referred to as the radical, are on the top or left of the character,. Radicals may exist on their own or as parts of characters.

A syllabary takes the syllable as the linguistic unit and associates it with some visual representation. If Indonesia were written syllabically, the word makaroni would be represented by four symbols, one for each syllable: ma, ka, ro, and ni. Modern Japanese mixes logographic characters borrowed from Chinese (called kanji) with syllabic symbols (called kana). Kanji are used for content or open-class word and kana for function words, particles, and particles, and inflectional endings, as well as foreign loanwords (Shibatani: 1987).

Finally, the alphabet is a system in which each letter is supposed to represent a phoneme. Any schoolchild knows that there are many exceptions to a one-to-one association between phonemes and letters. Some words, such as know, contain silent letters. It is thought that the evolution of linear writing systems began with logographies and then moved to syllabaries and finally to alphabets (Rozin & Gleitman: 1977).

### **Definition of dyslexia symptoms**

The symptoms of dyslexia may be difficult to recognize before the child enters school, but some early symptoms may identify the problem, such as irregularities perceiving other people's speech delivered to the patient, distortion of vision when looking at pictures around the patient, hearing aberrations of the songs that are heard in the sufferer and when the child reaches school age, the teacher of the child may be the first to be aware of the problem. (Ridge: 2012; Rohaty: 2011; Vandenberg B and Emery D: 2009).

Actually, dyslexic people have signs and symptoms that have a high risk such as talking, adding vocabulary after being able to speak very slowly, experiencing difficulty "rhyming" (rhyme) when the child has not attended school. When the child has entered school the signs and symptoms have become more visible: (1) Reading at the level below what is expected for the child's age, (2) experiencing a disturbance in processing and understanding something that the child hears, (3) (4) experiencing interruptions in following

instructions more than one at the same time, (5) experiencing interruptions to recite pronunciation of unfamiliar words, (6) experiencing hearing impairment (when at certain moments of hearing) cannot make similarities and differences in the singing of words that are almost the same as "put" for "put", (7) experiencing impaired vision (see writing on the signboard for words in reverse ( b for d or "birth" to "dead"). (8) Under 8 years of age, dyslexic children will continue to look reversed after their age, and difficult to learn a foreign language. (Bentzen, F: 2006).

### METHODOLOGY

This research applies research and development methods (research & development). Borg & Call (1984), Huitema (1990), Fraenkal & Wallen (1990) state that research and development is oriented to a cycle that begins with gathering information that is followed up with the development process of a product and its development process. Product development was tested and revised the results of the trial, and finally obtained a model that can be used to improve the process and learning outcomes. Relationship of acquisition, learning Indonesian language with reading and cognitive behavioral therapy and perception, and writing therapy, social behavior of long and short term memory of dislexed patients in this development research was carried out starting from designing and testing the results of reading and writing deviations (phonological aspects (phonemes for phonemes), morphological aspects (phrases or groups of words, and syntactic aspects (simple sentences in order of words for words in forming simple sentences), done in the first year.

How the influence of cognitive areas, such as memory, input processing speed, ability to manage time, aspects of coordination, and control of motion, and visual difficulties when reading and writing, is also done in the first year. In the second year of work "Strategic / Manual Reading and Writing Model for Dyslexic Patients theoretically, procedurally, as well as empirically (doing treatment, and testing tests (Guidelines / Cognitive, Affective, Psychomotor Models in Reading and Writing for Dyslexic Patients). The steps of this research are as follows:

1. Planning Planning includes goal setting activities, finding deviations in reading and writing dyslexic patients in the form of visual, auditory, cognitive, affective, and psychomotor deviations in terms of reading and writing and strategic steps to read and write that are fun and full of confidence. Furthermore, a limited feasibility test will be carried out on the design to be developed.
2. Model Development and Testing

This management can be done in earnest and high accuracy in order to obtain maximum results, according to the field of study. This research is a collaboration between linguistics (linguistics which includes reading and writing deviations by a psychiatric physician). This doctor will be the factors that cause dyslexia suffered by the patient, clinical examination and neuropsychological therapy. This collaboration will produce a standard model of competence, competence basic, the design model reads and writes CALISDIS.

North Sumatra, in this case the City of Medan, Coal, and Pematangsiantar as a city that stands many extraordinary schools, but the management of dyslexic patients is still not optimal and requires special treatment from linguists for language therapy, psychiatrists or experts psychiatric for neuropsychological therapy. The therapy program especially in the field of language needs to be refined using the right methods and theories. The Government of North Sumatra needs to know in full the handling of language disorder sufferers.

### RESULTS AND DISCUSSION

Returning to the perception of reading language in child and adults, the point to remember is that the Indonesian language is one of many alternative phonemes. Most of the research we will consider is based on Indonesian, and we will only occasionally be able to point to relevant work on other languages. Thus, further work is needed to determine whether to conclusions generalize to languages with different writing systems.

1. Researchers: Please read this word "kopiah" PSD-1: "aipok"

Researchers: Read the "kopiah hitam" PSD-2: "matiaipok"

Researchers: Read "koran harian" PSD-3: "nairanarok"

Researchers: Read the "melihat kambing lari" PSD-4: "iralimbangtahimel"

The above-mentioned PSD-1 reading events are very worrying for children with dyslexia. The words read do not match what is written. Some words are upside down, like [kopiah] are upside down to [aipok]. One word is also read one word, but all the phoneme can be changes from right to left. The groups of words are differently read by PSD-2. The group of words can be one word but in long utterances, like [kopiah hitam] upside down [matiaipok]. These words not completely read PSD-1. [kopiah] in first word completely read but upside down [aipok]. All phonemes present in the word are not omitted, but in the second word phoneme /h/ is omitted. [matiaipok] is read one word and have no meaning in Indonesian language. The other group of two words [kopiah hitam] can be read into [matiaipok]. This words also wrong read by PSD-2. [kopiah hitam] becomes [matiaipok]. Phoneme of /h/ and /a/ is omitted and be read [kopiah] and [hitam] becomes [matiaipok]. This one have no meaning in Indonesia Language. How about read three words? PSD-3 also read to one word [minum kopi pahit] can be read to [tihapimunum]. For the case of two words (group of words) PDS-3 apparently equates the sound of [i] in the first word position [pahit] to [tihap] into the first position, [kopi] can be read [pi] only, and [minum] can be read [munum]. All the words [minum kopi pahit] becomes [tihapimunum]. This language event can be phonologically traced into a progressive assimilation form. The front [i] sound affects the [u] for the [minum] to [munum]. [tihapimunum] have no meaning in Indonesian language.

In particular, which occurs in PDS-2, different cases of reading the child. Words that children read backwards, the composition of words is not systematically arranged, the way of reading there is at the lowest level and not in accordance with the age of children, children also disturbed hearing, so disturbed the process of language and language understanding, understand the instructions that very simple even disturbed let alone follow the instructions more than one at the same time, sight and hearing is also disturbed, so cannot distinguish and find the similarity between the word one with the other word cannot spell and cannot learn a foreign language. PDS-1 has difficulty distinguishing write "masam" with "balsem"; or they misunderstand words that sound almost identical, such as "minum" with "munum". This difficulty is not due to hearing problems, but is related to the processing of inputs in the brain. Here's an illustration below:

(2) Researchers: Please read and write this word "katak" and 'katarak'

PDS-2: [katak]

Peneliti: write the "katarak"

PDS-2: [karatak]

Researchers: read and write this words "balsem" and "basuh".

PDS-3: "mesam" and "usap"

Researchers: read and write "masam" and "balsem" (Gustianingsih, 2018)12)

PDS-3: [masam] and [masam]

When asked which "masam" for [orange] and "masam" for [balsem] reversed he pointed to it, and at all the PDS-3 did not understand the instruction. Besides the PDS-3 was unable to read, write, and speech two words and three words, PDS-3 also suffered from interference understanding. When associated with neurolinguistics, PDS-3 is impaired in both brain hemispheres. In the Wernicke field is the part of the brain located on the left hemisphere of the brain specially regulating the understanding of language, and the right hemisphere, governs the language of reading and writing skills (appeal, Gustianingsih: 2018, p. 32).

Uniqly phoneme [h] and [l] in the middle position always omitted in PDS-5, [e] always perceived as [a]. In producing the word is related how PDS reading and writing the word. Phoneme [o] perceived as [u], and [b] perceived as [t], and [r] also perceived as [t]. Here's an illustration below: [bolos] →

[sulut], [rumor] → [tumul], [robot] → [tutut], [koran] → [natuk]. Perception of the phoneme not always same, [b] is not always perceived as [t], this phoneme can be perceived as [s]. Lexical [bolos] perceived as [sulut], but [balsem] perceived as [masam] and [masam] regular [masam]. Consonant [b] in word [balsem] is perceived as [masam].

Assimilation of progressive in this word that [b] becomes [m] not [t]. Dislexic in this paper told about [o] perceived as [u] is different with Autistic that cannot produced [u] high vocal. Vocal [u] always perceived as [o]. (compare Gustianingsih: 2015)

#### **Difficulties of understanding long words of instruction in one short situation**

In this case the PDS-5 is incapable of understanding the instruction of long and many words at the same time.

The PDS very much regulates the words that have been delivered to him completely and perfectly. Here's an illustration when researchers see the mother PDS-5 send message to his son.

Mother: "Keep the bag in your room upstairs, change clothes, wash your feet and hands, then go down again for lunch with mom, but do not forget to take it too your math homework book !"

PDS-5: Mam .. this is my homework "basanesa" (bahasa Indonesia). School bag still on, uniform schools have not been replaced, hands and feet have not been washed.

Mother: your homework Bahasa Indonesia, taken mother. Mom told PDS-5 to come back with instructions the first "Save the bag in your room upstairs, change clothes, wash your feet and hands down, then down again for lunch with mom".

PDS-5: Climb again to the top of the stairs, up on it down again by saying "yok Maam" (meaning to take her mother to lunch), but the bag remains slung over the child's shoulders, hands and feet have not been washed.

Mother: Ouch nang ("dear" call a mother to the only child).

Yes, eat us yes, but keep your bag in your room, banging your bag who was carried his son, Son silently looked at his mother.

PDS-5: Son rises again to the 2nd floor and takes off his bag, then he drops back down. Mother: nice my son, your bag is stored in your study cabinet? Your hands and feet are washed? PDS-5: Shut up, bewildered. Climb again up and followed by his mother. Above the 2nd floor, Mom gave an example of putting a child's school bag into a study cabinet and bring the child to the bathroom to wash hands and feet.

From the above illustration on data (3), it is clear that this dyslexic child is incapable of understanding long and complex sentence instructions in the same situation, short time. The PDS-5 is only able to remember the last words of "eating with mom", after which the mother shakes the child's bag, the PDS-5 is able to remember the second message of his mother, PDS-5 always forgot the 3rd message and the 4th message. Refreshing on the above data, can be done positive handling in children, assessment, and positive therapy or treatment with great patience and affection.

#### **Dyslexia and Characteristics**

Also called a developmental disorder reading. Symptoms include:

(1) Difficulty in connecting letters with sounds, (2) Difficulties in forming syllable, (3) Reversal of letter positions, (4) Speech disorder, (5) Doubt in words, (6) Less understanding of the meaning of the sentence.

#### **Handling and Therapy**

Children with dyslexia require individual teaching and therapy or treatment for dyslexia often involves multisensory education programs. Moral support from parents is also an important part.

The best therapy or treatment is direct instruction, which incorporates a multisensory approach. This type of treatment consists of teaching sounds with different cues, usually separately and (if possible) part of the reading program. Indirect instructions can also be applied. It usually consists of training to speak a word or reading comprehension. The child is taught how to process sound by mixing sounds to form words, by separating words into letters and by recognizing the position of sounds in words. (eg in recognizing parts or

patterns and distinguishing different types of sounds) or problems with memories, conversations, thoughts and hearing.

Distractions that cause problems in speaking, listening, reading, writing or math skills, as well as specific developmental disorders. Learning difficulties are impairments in learning abilities including in terms of speaking, listening, reading, writing, or math skills. Children who experience learning difficulties can be seen from their academic ability a year or two under their age children with normal intelligence. Often these learning difficulties seem to coincide with other difficulties such as ADHD (Attention Deficit / hyperactivity disorder) caused by functional irregularities of certain parts of the brain. This is due to hereditary factors (Gustianingsih: 2015, p.33).

Learning difficulties are associated with brain dysfunction that affects basic skills such as perceptual sensory ability. In general, learning difficulties in the academic field include:

1) Assessment Assessment of learning difficulties can be done by one or more of the experts, such as psychologists, psychiatrists, and neurologists. Assessment that can be done is through IQ test to determine the ability of verbal and non-verbal child, test projective to evaluate the emotional level.

2) Treatment

Basically, the treatment for children learning difficulties is remedial education and psychotherapy. Both can be implemented simultaneously or one follows the other as needed. Remedial should be done individually with a tutor. The goal is to find and tear down the walls that cause learning difficulties. Basically, the most needed by children with learning difficulties is the affection, understanding and patience of the people around him, especially from parents. After that, proper handling can be done

If we compare with all researchers of another language, it will be same or different with this research. Dyslexia is a learning disorder, in which a person has difficulty reading, writing, or spelling. Dyslexic sufferers will have difficulty in identifying how spoken words should be changed into letters and sentences, and vice versa. Dyslexic, based on gender, male sex has memory memory disorders, knowledge, fine motor skills, body balance for a sample of 40 people from preschool shows 27.5% (11 adults) show symptoms at risk of dyslexia, but only 15% (6 people) indicates a very high risk of having a dyslexic symptom. Boys are more affected by dyslexia than girls. 40% more children fail to mention abaca / letters, 5% do not recognize rhymes / first letters, and 3% cannot distinguish language sounds). The Malaysian Education Ministry disclosed that since 2001 many preschool-aged children were exposed to dyslexia of 290,000 school pupils from 4.9 million total pupils (KPM, 2000). 4% of the world's population is significant to have dyslexic symptoms (Moses: 2002). These special needs children include dyslexic children who also need special education to be socially acceptable in a meaningful life. (Vandenberg: 2009, p.9)

Noorr Afzan, (2006) has budgeted 314,000 children who are studying in Malaysia Malaysia with dyslexia Setiausaha Parlimen, Ministry of Education in 2004 (Paris, S.G. 2005.) also reported that 5% of cases of dyslexia or one in 20 students are detected dyslexia compared with Down syndrome disease. which is about one in 600 people detected dyslexic disease and about one in 700 people increased sharply also reported by the President of the Malaysian Social Harmony Union (PSHM). Increasing dyslexia in Malaysia makes Malaysian government recommend to do research about dyslexia to be known early handling of dyslexia (Meier: 2007). According to studies conducted by Meier, Hammond and Hughes, and Spaafford and Grosser, there are two factors that cause the emergence of this disorder problem, among which are genetic factors or heredity and biological factors.

Studies have shown that dyslexia is caused by chromosomes 1, 15 and 16 that may be inherited from generation to generation. In most cases, there is a family expert having the same problem, the only thing that sets them apart is the stage of seriousness. While biological factors are an outcome factor that culminates with a preterm birth or an insufficient lunar birth, lack of oxygen at birth as well as birth complications. Damage to the brain during the birth process is also one of the impetus to the problems and disorders of the child in

the learning process. In fact, the child who faces this problem has a normal stage of intelligence and has no hearing and vision problems. Nor are they classified as weak and foolish.

This problem can be overcome if the parents and teachers can recognize this disorder. Umar, Rahman, et al., Says that the Malaysian kingdom expects its people to be able to master 100% literacy capability by 2020. Nevertheless, the proficiency of reading, writing and guessing (3M) principles may be difficult to obtain. According to Julina, about 40% of students are not capable and do not master 3M due to students facing severe cognitive problems such as dyslexia. Dyslexia has a high population and may lead to various problems of individuals, families, communities and countries. 10% -15% of the world's population has dyslexic problems. (Novianti: 2004, p.12).

### CONCLUSIONS

The conclusions that can be drawn from this paper are:

Difficulty in writing Indonesian to dyslexic patients, not just writing, reading, speaking word group, but reading one word also has difficulty. The words of a group of words are written and read in reverse. The composition of the words is not organized systematically; the way of reading is at the bottom and not in accordance with the age of the child. Children also disturbed hearing, so disturbed the process of language and language comprehension.

Understanding very simple instructions once disturbed let alone follow the instructions more than one at the same time, sight and hearing is also disturbed, so it cannot distinguish and find the similarity between words with one another. Children have difficulty distinguishing "masam for orange" from "masam for balsem"; or they misunderstand words that sound almost identical, such as "kata" with "katarak". This difficulty is not due to hearing problems, but is related to the processing of inputs in the brain.

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