

LANGUAGE DISORDERS FACED BY DOWN SYNDROME SUFFERERS AT SLB – C MUZDALIFAH MEDAN : A PSYCHOLINGUISTIC ANALYSIS

RIZKA FAUZA PASARIBU¹, SYAHRON LUBIS², ELY HAYATI NASUTION³

^{1,2,3} UNIVERSITAS SUMATERA UTARA

Abstract

This research is a psycholinguistic study which includes an understanding of the language disorders experienced by DS sufferers. This research aimed to find language problems and language disorders experienced by DS sufferers at SLB C Muzdalifah, By using Carroll's theory and the American Speech – Language – Hearing Association. This research used descriptive qualitative methods to answer research problems. The data sources are four students with DS and several teachers at SLB C Muzdalifah Medan. The data in this study was obtained based on the speech of DS sufferers. Based on the analysis conducted it was found that DS sufferers experience two language problems: expressive and receptive language problems, they experience difficulty in constructing sentences, expressing thoughts, limited vocabulary, and understanding complex verbal instructions. Several types of language disorders experienced by DS sufferers are phonological disorders, morphological disorders, syntax disorders, semantic disorders, and pragmatic disorders. Language problems and language disorders cause DS sufferers to experience difficulties in two-way communication.

Keywords: *psycholinguistics, language disorders, down syndrome*

INTRODUCTION

Language is the ability that humans must communicate with other humans. Language is used to interact and identify oneself. Language is something that cannot be separated from life because language is a supporter of all human activities. According to Pinker (1994), language is a complex and specialized skill that develops in a child spontaneously, without conscious effort or formal instruction and is used without awareness of the underlying logic. It is also qualitatively the same for everyone. Language is a state acquired by a naturally developing mental computing system whose precise parameters are determined by the environment to which the individual is exposed as a child. Chomsky (2006) suggests that language acquisition occurs spontaneously in humans from birth, regardless of the complexity of the language. It is a natural process that does not require memorizing grammar rules, vocabulary, or social applications.

A child's grammar skills are developed through listening to what they hear, while language is organized organically in their brain without needing theory. Therefore, the first mother tongue a child acquires greatly influences the child's language development. Language development is key to a child's overall growth and development. A child's educational progress and social relationships will be affected if they have language problems or poor language development. Baihaqi (2011) states that normal language development requires comprehensive things, namely that the child concerned must: (a) Have intact hearing from birth. (b) has an intact nervous system. (c) has a physical structure and physiological control that allows for fast, integrated, and complex motor activities; (d) has an environment that always encourages him to develop verbal skills. Even normal children may not have the comprehensive characteristics above and may have several factors that cause language disorders and development. When someone has difficulty using or understanding language in a way that is appropriate for their age group's language development, they are said to have a language disorder. Language acquisition, language development, and language disorders are studies in psycholinguistics. Psycholinguistics is a scientific discipline that aims to understand all aspects of human language use, starting from how humans acquire language, how language is produced and developed, and how language can be understood and transmitted.

According to the American Speech-Language-Hearing Association (1993), language disorder is when a person cannot understand or use words in everyday communication, either through speaking or writing. Language disorders may be caused by trauma or brain disease. Down Syndrome (DS) sufferers faced language disorder from birth. DS is a condition where a person has retarded physical and mental development. DS was first discovered by a British doctor named Langdon Haydon Down. (Cantwell et al. 1987 ; Yousif, 2018), DS is considered

one of the most frequently identified genetic syndromes, resulting in various developmental learning problems. Therefore, DS learning development is not like that of normal children because they experience mental and physical delays.

Abbeduto et al. (2003, p.156) suggest that delays in early vocabulary development are a symptom of general cognitive abnormalities. DS sufferers exhibit cognitive impairment, meaning they develop awareness and understanding of the world, reasoning, and memory more slowly. Developmental language problems may contribute to these cognitive delays. Since language is an effective instrument for learning, thinking, reasoning, and remembering, severe language deficiencies will inevitably lead to significant cognitive delays. Two types of dissociation of language and cognitive skills affect child development: 1. expressive language disorders of a specific nature; 2. specific expressive and receptive language problems.

Soriano et al. (2020, p.14) state that DS sufferers tend to experience expressive language problems, especially in syntax and vocabulary diversity. DS sufferers have very limited capacity for reception and expression (delay or slowness), often accompanied by nonverbal abnormalities and perceived mental retardation. Speech and linguistic comprehension are completely invisible. Apart from expressive and receptive language difficulties, DS sufferers also experience language disorders, such as phonology, morphology, syntax, semantics, and pragmatic disorders in communication. However, the most prominent language disorder in DS sufferers is phonological disorder. They make many deviations in phonemes, such as deleting, adding, and replacing phonemes. It is the most common disorder in people with DS.

Meanwhile, semantic (taste) and pragmatic (usage) language difficulties generally begin with echolalia; DS sufferers, including fluency disorders or stuttering, sometimes show central mutism, namely the inability to communicate in certain contexts. Most of them also suffer from speech development problems and language articulation problems. Articulation disorders usually occur between the mouth and nasal cavity, and the short tongue does not touch the roof of the mouth, so the pronunciation of the vocabulary could be clearer.

According to Roizen (2007, cited in Martin 2009, p.4), about two-thirds of children with DS experience conductive hearing loss, sensorineural hearing loss, or both. Hearing loss can affect one or both ears, ranging from mild to severe. So, DS sufferers experience difficulty producing words due to hearing problems, which makes them unable to carry out two-way communication well.

This research was conducted to discover what problems and types of language disorders DS sufferers experience. In this research, the researcher focused on and apply linguistic analysis, especially psycholinguistics, to analyze any language disorders experienced by DS sufferers. This research was conducted at Special School (SLB)-C *Muzdalifah* Medan. In SLB,

students with special needs are grouped according to their understanding and abilities, making it easier for researchers to conduct observations. the researcher chose this SLB to be the location for the research object and involved four students who are DS sufferers at that SLB to become the research subjects. The research subjects are one male and three female students aged 9 - 13. DS was capable of performing two-way communication at this age, so the researcher can analyze any disturbances and problems they experienced. And the researcher chose mostly female sufferers from male sufferer because during the pre-survey it was observed that female DS sufferers were more able to communicate in two directions than male DS sufferers.

Previous research also conveys the same thing. For example, the research by Sukmawulan (2018) titled "Language Disorders Analysis of Down Syndrome Sufferer: A Case Study." In this study, the author analyzed the subjects' characteristics and possible causes of language disorders. The author found that the subjects had phonological, morphological, syntactic, semantic, and pragmatic disorders. The author found 66 data related to the five language disorders. The difference between these two studies is that the researcher explained the language problems experienced by DS sufferers (expressive and receptive), four research objects, and different research locations. These two studies had something in common: they both discuss language disorders that occur in DS sufferers and use theory from the American Speech-Language-Hearing Association (1993).

In this research, the researcher examined two language problems experienced by DS sufferers, namely : expressive and receptive language problem, and analyzes five language disorders often experienced by DS: phonology, morphology, syntax, semantic, and pragmatic disorders, by using theory of American Speech-Language-Hearing Association (1993) and Carroll (1985).

METHODOLOGY

This research was conducted using qualitative methods. Qualitative method aims to obtain a contextual understanding of a particular phenomenon or problem. In this study, researchers used qualitative methods to analyze Down syndrome speech in words, phrases, clauses, and sentences. A descriptive approach was used to collect data about the communication experiences of children with Down syndrome at *SLB C Muzdalifah* Medan.

In conducting the research, the data must be empirical. The data observed in this research are the speech of the four DS sufferers at SLB C Muzdalifah Medan. Two Teachers (homeroom teacher) help researcher to communicate with subjects. The teachers also provided some information about how subjects communicate with each other, how they respond to questions or remarks in two-way communication, and how teachers provide understanding and teach DS

sufferers at *SLB C Muzdalifah* Medan.

Data Collection Procedure

The following are the stages of research:

1. Selecting the subjects and observing the subjects about how they interact with each other, how they respond to commands given by teachers, how they answer questions asked, and the pronunciation of words, and sentences they say.
2. Conducting several conversations with the subjects (orally).
3. Recording all the data obtained from the subjects.
4. Identifying language problems and types of language disorders that produced by the subject
5. Classifying language problems and types of language disorders are faced by the subjects.
6. Displaying and considering what language problems faced by those subjects.

Data Analysis

According to Sugiyono (2008), there are three interactive data analysis models: data reduction, data display, and conclusion.

1 Data Reduction

The data reduction process was carried out from the beginning to the end of the research. In this research, the researcher obtained quite a lot of data after conducting research. Researcher recorded every language disorder phenomenon that occurred in DS sufferers at *SLB C Muzdalifah* Medan. However, the more researcher observe, the greater the amount of data that was discovered. Data reduction means that researchers analyze or categorize data based on research problems, namely focusing on finding language problems and the types of language disorders faced by DS sufferers.

2 Data Display

After reducing the data or categorizing the data based on the research object, the researcher presents the data analysis in the form of a description and put the data into the table. That way readers can easily understand the data analysis found in this research.

3 Drawing and Verifying Conclusions

The final step in qualitative descriptive data analysis is drawing conclusions. The conclusions are drawn based on the data that has been analyzed, namely regarding language problems and types of language disorders in DS sufferers at *SLB C Muzdalifah* Medan. This was done to answer the questions formulated in this research.

FINDINGS

This chapter, discusses the data found related to research problems to determine language problems based on Carroll's theory and language disorders are experienced by DS sufferers, based on theory of the American Speech-Language-Hearing Association (1993).

Language Problem of Down Syndrome Sufferer

People with DS experience several problems with language. Martin (2009, p.29) argues that DS sufferers often experience expressive (language production) and receptive (language comprehension) language problems.

a. Expressive Language Disorder

According to the American Speech Language-Hearing- Association (2014), an expressive language disorder is when a person has problems sharing thoughts, ideas, and feelings. DS sufferers experience expressive language disorders because sometimes they find it difficult to express their thoughts and ideas to other people.

Table 1. Expressive Language Problem Faced by DS sufferers

Data	Subject's Utterance	Description
Data 1	"Mama mak mi "	Word finding difficulties and limited vocabulary mastery
Data 2	"Makhma es es tu "	Difficulty in "coming to the point"
Data 3	"Ayah ayah eji "	Difficulty in "coming to the point" and limited vocabulary mastery.
Data 4	"Kit... kit.... "	Limited vocabulary mastery
Data 5	Tch: " Andre kenapa itu bajunya kotor? " (Ibu guru bertanya pada murid lain) L: <i>bauk ... bauk</i> (menunjuk baju temannya)	Word finding difficulties and limited vocabulary mastery
Data 6	Rch: " Rumah adik dimana? S: <i>solah abib</i> (sekolah abib)	Word finding difficulties

In data 1-6, DS sufferers experience expressive language problems. *In data 1*, experiences expressive disorders with the characteristics of "word finding difficulties and limited vocabulary mastery". He experiences difficulty in expressing what is on his mind due to limited vocabulary. *In data 2-4*, M experiences expressive disorders with the characteristic "difficulty in coming to the point and limited vocabulary mastery". *In data 5*, L has an expressive disorder with the characteristic "limited vocabulary mastery" which makes him say vocabulary that is not

appropriate to the context. In data 6, S is experiencing expressive disorders with the characteristic "word – finding difficulties" which makes S have difficulty expressing the contents of his thoughts, and only expressing what he understands. Expressive language problem that often occur in DS sufferers are word – finding difficulties and limited vocabulary mastery.

b. Receptive Language Disorder

Receptive language disorders are disorders in understanding spoken, written, gesture, and symbol systems. According to the American Speech- Language - Hearing - Association (2014), it is a receptive language disorder when someone has difficulty understanding what others say. Sufferers who experience this disorder have difficulty understanding verbal and non-verbal language.

Table 2. Receptive Language Problem faced by DS sufferers

Data	Subject's Utterance	Description
Data 7	<p>Rch : “ <i>Siapa tadi yang ngantar ke sekolah?</i> “</p> <p>K : (just nod)</p> <p>Rch : “ <i>Yang ngantar kamu tadi kesekolah siapa?</i> “</p> <p>(Mengulang pertanyaan)</p> <p>K: (not responding)</p>	Difficulty in understanding sentence and demonstrating lack of interest
Data 8	<p>Rch: “ <i>Nama adik siapa?</i> ”</p> <p>M: (not responding, just looked for a moment and went back to drawing)</p>	Not appearing to listen
Data 9	<p>Tch: “ <i>Makan pakai apa itu?</i> ”</p> <p>M: (not responding and keep eating)</p>	Not appearing to listen and Demonstrating lack of interest
Data 10	<p>Tch : “ <i>M pindah kedepan nak duduknya!</i> ”</p> <p>M: (silent and not responding)</p>	Difficulty in following verbal direction and demonstrating lack of interest.
Data 11	<p>Rch: “ <i>Coba perkenalkan diri adik</i> ”</p>	Difficulty in following verbal direction

	L: (just smiling)	
--	-------------------	--

In data 7-11, Ds sufferers in this study experienced receptive disorders. *In data 7*, K experienced a receptive disorder with the characteristics of "difficulty in understanding complex sentences and demonstrating lack of interest" as seen from his response of just being silent and nodding. *In data 8-10*, M has a receptive disorder with the characteristics "not appearing to listen, demonstrating lack of interest, and difficulty in following verbal direction. "It can be seen from his response that he did not respond to the person he was talking to. *In data 11*, L has a receptive language disorder with the characteristics of "difficulty in following verbal directions and difficulty in understanding complex sentences" as seen from his response which only smiles, because he does not understand verbal directions.

Types of Language Disorders of Down Syndrome Sufferers

According to the American Speech-language-Hearing Association (1993), language disorders are disorders of understanding and use of oral, written, and other communication systems. These disorders can involve:

a. Phonological Disorder

Phonological disorder is a language development disorder that includes articulation or sound production. Namely, problems when arranging and producing the right speech sounds.

Table 3. Phonological Disorder are Faced by DS sufferers

No.	Utterances by Normal Children	Utterances by DS Chidren	Analysis
1.	Sudah	Udah	A delition of phoneme /s/ in the beginning of words
2.	Tapi	Api	A delition of phoneme /t/ in the beginning of words
3.	Jatuh	Atuh	A delition of phoneme /j/ in the beginning of words
4.	Nasi	Asik	A delition of phoneme /s/ in the beginning of words and the addition of phoneme /k/ in the end of word.
5.	Gausah	Dausah	A substitution of phoneme /g/ into phoneme /d/ in the beginning of word.

6.	Awas	Was	A delition of phoneme /a/ in the beginning of words
7.	Banyak	Anyak	A delition of phoneme /b/ in the beginning of words
8.	Sekolah	Seolah	A delition of phoneme /k/ in the middle of words
9.	Kereta	Keeta	A delition of phoneme /r/ in the beginning of words
10.	Dua puluh	Tua puluh	A substitution of phoneme /d/ into phoneme /t/ in the beginning of word.
11.	Rahasia lah	Ahasia lah	A delition of phoneme /r/ in the beginning of words

It can be seen in data 1-10, that there are elements of phonological interference, namely substitutions, deletions and additions. These three processes that occur in the speech of DS children prove that normal pronunciation and the phonemes they express are not the same. Of course, this also proves that DS children's development in language is very slow considering their age. They still have difficulty naming several phonemes such as /r/, /s/, /k/, /b/, and so on. Of the 11 phonological disorders obtained, a deletion of phonemes was the problem most frequently experienced by DS sufferers in this research.

b. Morphological Disorder

Morphological disorder is a spoken language disorder that affects the system that regulates word structure and word form construction. The following are the characteristics of morphological disorders: Difficulty expressing plural forms, difficulty expressing tense, difficulty using correct word form, difficulty using correct prefixes or suffixes, limited use of grammatical marker, and difficulty repeating words.

Table 4. Morphological Disorder are Faced by DS Sufferers

Aspects of Morphology	Subject utterance	Correct word	English
Derivational morphemes	Damau	Ga mau	Don't want
	Mekambil	Mengambil	Take

	Hapusku	Penghapusku	My eraser
Reduplication	Pin – ipin – ipin	Upin – ipin	Upin – ipin

It can be seen from data 11-13 those DS sufferers experience morphological disorders. *In data 11*, there is a deletion of morpheme “ gamau “ to become “da mau” beginning of the word. Where this is a morphological disorder with the characteristic " difficulty using correct word form". *In data 12*, there is repetition of words, which is a morphological disorder with the characteristics of "difficulty using correct word form and difficulty repeating words". *In data 13*, there is a prefix change. "meng" into the prefix "me" and deletion of the prefix "peng". where this is a morphological disorder with the characteristics of "difficulty using correct prefixes or suffixes and limited use of grammatical markers"

c. Syntactic Disorders

Syntactic disorder is a spoken language disorder that affects the system that regulates the order and combination of words to form sentences and the relationships between elements in sentences. Syntactic disorders may make it look like a child cannot follow instructions or is purposefully ignoring directions.

Data of Syntactic Disorder

Researcher: *“Tolong duduk ya adik – adik, jangan ribut!”*

(Sit down please, be quiet)

L : *“Diam, ibu nanti marah nanti “* (mengingatkan ke teman – temannya)

(Shut up, teacher will get angry later) (she reminded her friends)

Based on data above, L has syntactic disorders. Where L has difficulty in forming words into sentences. L said "diam, ibu nanti marah nanti" she repeated the word "nanti" twice, resulting in an inappropriate sentence.

d. Semantic Disorder

Semantic disorders are disorders that affect the system that regulates the meaning of words and sentences, resulting in differences in meaning when communicating.

Data of Semantic Disorder

Researcher: *“Adik punya berapa adik dirumah?”*

(How many siblings do you have at home?)

K : *“ ini “* (sambil menyodorkan snacknya)

(this) (while handing her snack)

Teacher : *“Bukan nak, kakaknya nanya berapa adeknya kamu dirumah”*

(No, she asked how many siblings you have at home?)

K : *“Ano, Ania “* (menyebutkan nama adiknya)

(Ano, ania) (mentioning her siblings)

Based on data above, K has semantic disorder. Where K did not understand the question asked. Because it is difficult to follow the conversation and understand vocabulary before repeating it again.

e. Pragmatic Disorders

Pragmatic disorders are disorders that affect the system that combines language components in communication. Pragmatic language disorder characteristics include speech and language delays, difficulty understanding what others mean when they speak, difficulty using language appropriately to interact with others, and difficulty using social language.

Data of Pragmatic Disorder

Researcher: "*Adik punya berapa adik dirumah?*"

(How many sisters do you have at home?)

L : "*Anyak kak*" (banyak kak), kiki, memei, mike.

(Lots, sis) (mention her siblings)

Researcher: "*tiga?*"

(Three?)

L : "*ini ikut ini, gausa ikut ini, ikut, ikut* "

(Follow, don't follow, follow...) (choosing her friend)

Based on the data above, L has pragmatic disorder because she has difficulty understanding what others mean when they speak. Where his words are out of the context of the conversation. What was initially an answer that was appropriate to the context, turned into an answer that did not match the question asked by the person she was speaking to.

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the research that has been carried out, two conclusions can be drawn from this research as follows:

1. DS sufferers have difficulty in expressive and receptive language. They face difficulties in arranging words into sentences, expressing thoughts correctly, and have difficulty following correct verbal instructions. Apart from that, there are problems in mastering vocabulary, difficulty in understanding complex sentences, and dependence on standard phrases.
2. Because of expressive and receptive language problems, DS sufferers also experience language disorders such as phonology, morphology, syntax, semantic and pragmatic disorders. This language disorder takes the form of speech sound errors, so they make many mistakes such as omitting phonemes, adding phonemes, and changing phonemes when

communicating. DS sufferers also experience difficulty in forming words, difficulty explaining what they are thinking, difficulty following conversations, and difficulty understanding the relationships between words.

Suggestion

For future research, the researcher suggests other researchers to conduct deeper research on language disorders such as phonological, morphological, syntax, semantic and pragmatic disorders by involving more subjects, to give contribution to studies about language disorder.

ACKNOWLEDGEMENTS

First and foremost, praise and gratitude to Allah Swt, who never ceases to give us the blessings of health, strength, patience, mercy and grace. Shalawat and Salam to the Prophet Muhammad Saw, who brought humanity from darkness to lightness. And to the university which has provided facilities and opportunities for us.

REFERENCES

- Abbeduto, L., Murphy, MM., Chawton, SW., Richmond, EK., Weissman, MD., & O'Brien, A. (2003). Receptive Language Skills of Adolescents and Young Adults with Down or Fragile X Syndrome. *American Journal on Mental Retardation*, 149-160
- American Speech-Language-Hearing Association (1993). *Definitions of communication disorders and variations*. Publication manual of American Speech-Language-Hearing Association. ASHA: <https://www.asha.org/policy/rp1993-00208/>
- American Speech-Language-Hearing Association (2014). *Spoken Language Disorder*. Publication manual of American Speech-Language-Hearing Association. ASHA: <https://www.asha.org/policy/rp1993-00208/>
- Baihaqi, M. L. (2011). Phonolical Competence of Childern with Down Syndrome At SLB C Negeri 1 Yogyakarta. *Kemendikbud.go.id*, 153-162.
- Carroll, D. W. (1985). *Psychology of Language*. California: Brook/Cole Publishing Company .
- Chomsky, N. (2006). *Language and Mind*. New York: Cambridge University Press.
- Martin, G., Klusek, J., Estigarribia, B., & Roberts, J. (2009). *Language Characteristics of Individuals with Down Syndrome*. University of North Carolina.
- Pinker, S. (1994). *The Language Instinct*.
- Soriano, LDH., Thurman, A., Harvey, D., & Abbeduto, L. (2020). Expressive Language Development in Adolescents with Down Syndrome and Fragile X Syndrome: change overtime and role of family-related factors. *Journal of Neurodevelopmental Disorders*, 1-18.
- Sugioyono. (2008). *Metode Penelitian Kuantitatif & Kualitatif dan R&D*. Bandung: Alfabeta Bandung.
- Sukmawulan, A. (2018). *Language Disorders Analysis of Down Syndrome Sufferer: A Case Study*. Universitas Brawijaya.
- Yousif, N. S. (2018). *Phonological Development in Childern with Down Syndrome: An Analysis of Patterns and Interventions Strategies*. University of Reading.