

Speech Delay Intervention through Milieu Teaching Approach in Reading and Singing Activities: A Single-Case Study

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Abstract: This study aims to provide interventions to parents about understanding milieu teaching methods in reading and singing activities, as well as encouraging the child to produce new vocabulary. Participants in this study were one boy aged 2 years and 5 months who was diagnosed with speech delay and his parent. This research design is a case study with psychoeducational for subjects. The intervention design was carried out in three stages, baseline, psychoeducational, and maintain. As a result, this study has succeeded in providing parents with an understanding of milieu teaching approach technique in reading and singing activities. This implies that the approach is appropriately applied for the parents in this study. On the other hand, by the end of the intervention session, the subject had not been able to produce words. Several factors such as physical condition, environment, and time management, influence the intervention in this case. Intervention results will reach the maximum and comprehensive point if carried out consistently and continuously.

Keywords: Milieu Teaching, Psychoeducation, Speech Delay, Story Book, Singing

1 INTRODUCTION

Speech delay is a general term that refers to impaired speech and language in children. A speech delay is when a child's conversation is more inherent than expected, characterized by a pattern of voice or speech errors that do not match his age (Shriberg L. D., 1993). The milestones of language development in children have something in common. But there is a slight difference in the number of words as well as the mention of phonemes. This happens because each language in the world has a different level of uniqueness. In this study, the developmental milestones used referred to the Indonesian Pediatric Association (IDAI). According to IDAI (2019), by the age of two, 50% of a child's speech should be understandable to others. If there is no two-word phrase that can be understood at the age of 2 years, parents are advised to see medical personnel therefore detection and intervention can be carried out. If there is a delay in speech, the child still can develop optimally. Delay in speech is something to be watched out for. A 29-year longitudinal study using secondary data conducted by Law et al. (2009) said that children who had language developmental delays were at higher risk of experiencing social, emotional, behavioral, and cognitive problems in adulthood. In terms of delays, intervention plays a significant role. Morgan (2007) says that 40% of children who have a speech delay and do not do any treatment will have a persistent delay until three years later. Therefore, it is necessary to intervene in order to catch up the child's developmental language delay.

In the study, the intervention focused on MR, a 2-year-old, 5-month-old boy who could only say the word "ayah". Prior detection has been carried out by psychologists and MR is stated to have a speech delay. The results of the assessment carried out at the beginning revealed that MR awareness levels are low, eye contact is weak, and focus is very easily distracted. The oral motor organs also appear stiff, and MR is not flexible in moving the mouth and producing sounds. MR's pregnancy history is also quite risky. MR's mother often bleeds, and she was hospitalized five times during pregnancy. The interventions carried out in this study are complementary to the prior interventions carried out by psychologists. This intervention study is not the main intervention however it is in line with what psychologists have done.

The main approach in this intervention is milieu teaching (MT). MT is a naturalistic intervention approach that uses conversation-based strategies to improve language and communication skills in children (Kaiser, Hancock, and Nietfeld, 2010). MT has been studied for more than 20 years as part of speech delay interventions and is indicated to improve children's vocabulary (Robert & Kaiser, 2012) as well as increase the frequency of child communication (Kaiser et al., 1993). In this study, MT practice was carried out through two activities, singing, and reading, because these two things are effortless for parents to do. According to Setiowati

(2018), singing can have a considerable influence on children's language development. In addition, singing is increase word proficiency in children with speech delay (Ardianti, 2021). Reading activities were also chosen as part of the implementation of the intervention because reading makes parents pronounce certain sentences repeatedly to stimulate children to imitate them (Senechal, M., & LeFevre, J., 2001). Several studies that have been carried out have shown that children who actively participate when read a book produce more words, have a richer vocabulary, and can catch up with speech developmental delays (Senechal et al., 1995; Senechal, 1997; Hargrave and Senecal, 2000). The main objective of the intervention in this study is to get parents actively involved in the intervention by providing an understanding of the milieu teaching method as part of the intervention, as well as encouraging MR to be able to produce new vocabulary.

2 MATERIALS AND METHODS

Design study & participant

This study was conducted in the form of psychoeducational on one family, parents with a child who is diagnosed with speech delay. Primary data were obtained from the results of semi-structured interviews with the mother to dig up information at the beginning and at the end of the intervention to find out the development of intervention outcomes. Secondary data were obtained from the observations of psychologists who had handled the child.

Table 1. Subject Characteristic

Subject Characteristic	
Child's name	MR
Child's Age in Months	29
Child's Gender	Male
Mother's Age in Years	39
Number of Siblings	2
Disability	Speech delay
Speaking Ability	1 word

Procedure

Materials

To support the ongoing intervention process, researchers provided intervention booklets, informed consent, and intervention evaluation sheets. The intervention booklet contains the aim of this study, theoretical description based on scientific journal, and applicable step to do intervention. At the beginning of the meeting, the researcher explained the method and gave directions to prepare a special room to practice milieu teaching. Furthermore, the researcher provided three suitable books to support the practice of milieu teaching in reading activities. For singing activities, the researcher suggested several songs along with how to apply them to MR.

Intervention Methods

This study uses a psychoeducational intervention design for subjects with an Enhanced Milieu Teaching (EMT) approach in reading and singing activities. The following are the steps given to the subject's parents to make them more actively involved in the intervention process.

Proceedings of The International Conference on Psychology and Education (ICPE)

Vol. 1 (2023)

The principal of Enhanced Milieu Teaching (EMT):

1. Take at least 45 minutes a day
2. Parents provide a special place to study
3. Actively communicate with children (two-way and alternately) during the learning process
4. Seeing and responding to every form of child's reaction, expanding child's communication skills by repeating and adding 1-2 words.
5. The crucial point in the EMT method is "wait, ask questions, give choices, encourage talk".

EMT in Reading Activities

1. Inviting children to read in a special place (where the EMT is held)
2. Children choose books of their own choice. For example: "Which book do you want? This or that one?"
3. Parents point to each picture and talk to the child clearly. For example: "This is a picture of an elephant, this is a horse".
4. Waiting for the child to speak and responding according to the child's words or babbling.
5. Encourage children to pronounce words.
6. Provide one book per week for easy recall.
7. Saying thank you for your child's participation in learning.

EMT in Singing activity

1. Applying songs every day for children.
2. Singing with instruments.
3. Using one song and repeated every day.
4. Encourage the child to finish the song.
5. Separation and emphasis per syllable can help children understand and remember words, so it can stimulate children to pronounce words.

3. RESULTS

Baseline observation

The subject of this study was MR, 2 years 5 months boy, the youngest of three siblings, who had a speech delay. The results of the interview showed that MR conditions while in the womb classified as risky, because the mother often bleeds thus, she had to hospitalized five times during pregnancy. The amniotic fluid ruptured 2 weeks before the due date and MR was born by cesarean section.

MR's mother started to suspect MR's delay since she saw his child had different language development than his peers. MR has not been able to speak, tends to be silent and does not respond to commands given to him. When he wants something, the way MR communicates is only by pointing to the desired object and crying. At the current age, MR can only produce the words "ayah" with unclear articulation. The pronunciation is likened to swallowing something stuck in the throat, which is heavy, and vaguely it sounds like it is muttering. Seeing that condition, his mother was encouraged to do several consultations with professionals such as psychologists, therapists, and doctors.

The results of the assessment carried out by psychologists stated that the level of MR awareness is low so that eye contact is weak. He is not good at responding to the given stimulus and the focus was easily distracted. Physical assessment showed that his response to sounds is weak, the motor oral organs appear stiff, it seems not flexible to moving the mouth. On the other hand, proprioceptive sensory is observed well enough to control his gestures. With these results, the psychologist suggests doing a medical check-up to see the function of hearing.

The data obtained are a reference in preparing follow-up interventions for mothers and MR. Periodic evaluations are carried out in four meetings, during which the intervention process took place the researchers paid attention to its development. The interventions carried out not only focused on the child, but also the mother, because the orientation of this study as follow-up intervention was helping parents to be able to do therapy independently to overcome MR's speech delay.

Intervention for Parents

Proceedings of The International Conference on Psychology and Education (ICPE)

Vol. 1 (2023)

The intervention given to parents is carried out in conjunction with the child intervention. At the first meeting, the researcher explains the concepts and procedures to the parents for how to conduct therapy. As for the following meeting to the end, intervention activities are carried out by directly practicing therapy to the child under researcher's supervision and guidance. At the second meeting, in carrying out therapy, the parent's teaching method is still inaccurate and not as systematic as in the guidance. For example, at the beginning of the activity, parents should inform and invite the child to participate in the learning process. However, MR's mother deliver the activity directly, such as singing and reading without precaution, so MR looks confused and mostly silent during the activity. But, after some correction and modification from the researcher, at the third and fourth meetings, significant changes were seen in parents. They are proficient in carrying out therapy with the milieu teaching method in reading and singing activities well.

The parent carries out therapy with a procedure corresponding to the previously prescribed one, however, from the final evaluation form, there are some points that they missed. Form 21 evaluation points, 18 points were ticked by parents. The other three points that have not been carried out are the beheading of words in singing shorter or per word, the emphasis of words to stimulate the child to perfect the word, and to provide a special room for therapy. The three points are not carried out for several reasons. First, the input from the therapist to the parents to not beheading words when singing to the child, this input is given because this will make the child harder to do and respond to the activity. Second, they are not having the opportunity to provide a special room for therapy due to the busy daily activities, there is a lack of time to be able to prepare it in a brief time and they decide to take advantage of something that is available at home. But in general, what parents have done is enough to describe the achievements that desired and planned in the beginning of intervention, to be able to become independent therapists has been fulfilled properly.

Intervention in Children

Independent therapy carried out by parents using the milieu teaching method has not brought significant changes in adding vocabulary to children. The child still has difficulty in getting the words out. Even though at the fourth meeting, the children began to try to pronounce the word "nen" the articulation was still not clear.

Interventions are carried out in the morning for one hour every day. The activities given are reading and singing alternately during the therapy. However, several times, MR are only interested in reading, so they do sing activity infrequently. During intervention time, MR showed feelings of pleasure, enjoyment, and enthusiasm. In the reading activity, three books were provided with three different themes, animals, colors, and toilet training. The children's favorite books were books with toilet training, while the least desirable were books with color themes.

In carrying out singing activities, MR also feels happy and enthusiastic, even though he is not focused on his mother. The songs only tend to be listened to without asking MR to follow or continue the sentences of the songs being sung. In addition, there are differences between the methods provided by researchers and those requested by psychologists. In the method given by the researcher, the song is sung by breaking the sentence into several words and giving emphasis to the syllable. But it was not recommended by psychologists because it would make children feel confused. The song that is often sung is "Dua Mata Saya" dan "Satu Satu Aku Sayang Ibu."

Evaluation

During the intervention process, it is necessary to carry out supervision and observation to evaluate all therapeutic activities, so that the obstacles encountered during the intervention process can be taken into consideration for future studies. As an evaluation, the researcher has provided a sheet for filling out intervention and evaluation activities in the form of a daily journal, and a final evaluation sheet.

However, in practice, this method cannot be done properly due to the condition and situation of parents who are busy and coincide with Eid. Then the evaluation media switched to using WhatsApp, and this method also has not been realized properly. Finally, the researcher provides an evaluation sheet in the form of thickening box for entire and overall intervention, without breaking it down to daily section, as it the easily way to carried out by the mother. This method is the most effective and efficient evaluation method for parents who are busy with daily activities such as MR mothers.

Another obstacle found during the intervention process was inconsistencies in the implementation of therapy by parents. Then, the intervention process was also temporarily paused because it coincided with Eid Al-

Fitri with the condition of the family being busy gathering at home making it difficult to condition the implementation of therapy. In this intervention, the available time is quite short, only 3-4 weeks.

4 DISCUSSIONS

According to the theory of the Bioecological Model of Development (Bronfenbrenner and Morris, 2006), parents play an important role in the development of their children's speech and language. Parents are considered as intermediate factors in interaction between nature factors (biological, genetic, innate) and nurture factors. Parents with speech delay children, who are involved in interventions, either directly or indirectly, will form a mutually supportive relationship with the speech therapist. It can improve children's speech and language development (Goodall and Montgomery, 2014).

At the time of the intervention process, at least parents have three roles (Davies et al., 2017). The first is an advocacy role where parents can seek help and guidance regarding their child's condition and development. The second role is the role of the intervener in which the parent can learn and adapt the intervention of the therapist so that he can become a supportive intervener for his child. The third is to divide the responsibility regarding the child's language development with the therapist. Parents cannot simply give the responsibility to the therapist completely thus if the child's language development seems stagnant, the therapist is not the one who can be criticize. Parents must be actively involved in assisting, evaluating, and implementing interventions so that children's language skills can develop optimally.

On baseline conditions, MR parents, especially mother, are seen performing all three roles well. From the beginning of MR indicated speech delay, his parents were active in finding out and learning about the intervention methods suggested by the therapist. However, MR mothers find it difficult to synergize the therapy time. At first everything went well for two weeks but as it entered the fasting month, the daily routine changed so that the time for therapy at home became shifted and chaotic.

In this intervention study, MR parents were already very cooperative. Based on the self-report, she said that she followed all the rules and methods given in this intervention, but it is difficult to do daily reports due to her busy schedule. The consistency of interventions also experienced some disturbances because they were carried out ahead of Eid al-Fitr. Until the end of the intervention period, MR has not been able to add new vocabulary. The short and intermittent observation time of the intervention, regarding to the holy month of Ramadan and Eid al-Fitr, is the main inhibiting factor in the progress of the intervention of this case. According to Davies et al. (2017), consistency plays a significant role in speech therapy for children's language development.

In addition to the time factor, there are also biological and physical factors that are still not detected well. According to the psychologist who treats MR, he is indicated had hearing loss. However, at the time of the baseline interview until the end of the intervention time, the hearing examination (BERA) could not be carried out optimally because there was mucus that interfered with the examination. When this intervention took place, MR was in the treatment period to remove the mucus. In addition to hearing conditions, the motor oral organs also appear stiff. Physical and biological conditions are one of the risk factors that are quite high for children who experience speech delay. There are significant differences between children who have physical impairments and those who are not in language development. Children who have physical impairments are at risk of speech and language delay (Sunderajan & Kanhere, 2019).

In addition to the physical condition, the condition of the mother during pregnancy is also a concern for psychologists at the time of prior detection. This risky pregnancy condition has a significant correlation with developmental delays in children (Torabi et al., 2012).

The many limitations in this case study make the intervention goal of adding vocabulary has not been achieved. However, this intervention has a positive impact on domains other than vocabulary. MR showed his own interest in reading books, especially in toilet training book. MR often asks his mother to read him a book, even MR can do sequences of activities according to the instructions in the book, such as turning on the lights, opening the door, and washing hands after leaving the toilet. MR also often showed various objects in the book and asked his mother to show the original objects at home. For example, like soap. MR was able to point to the picture of soap in the book and led his mother to the bathroom to get soap like the one in the book.

The results of this study revealed that consistency and length of therapy are important things that must be considered when intervening. The method of intervention, which in an online way, is also considered to have

Proceedings of The International Conference on Psychology and Education (ICPE) Vol. 1 (2023)

a hand in the failure to achieve the objectives of the intervention related to the achievement of vocabulary, since these interventions tend to depend on the parents. Although the monitoring was carried out twice after understanding and briefing, it was considered insufficient. Researchers should be directly involved when parents practice milieu teaching so that researchers can see and correct whether the course of the intervention is in accordance with the directions and guidelines given.

After the evaluation, it was seen that the intervention target in the form of adding vocabulary was not appropriate. The outcome of this intervention was not decided by the researchers alone but through discussions with MR parents, especially mothers, who expected the addition of new vocabulary in the child, even though in the detection of psychologists, there is still attention disorder in MR. If this disorder has not been resolved, it will be difficult to intervene with methods that require a long span of time, such as reading a book.

The use of the milieu teaching as a method of speech delay intervention is appropriate, but its effectiveness depends on the individual child and the surrounding environment. The basis of the intervention, especially for follow-up interventions such as this case study, would be better to consider and discuss with the psychologist who handled the detection and carried out the initial intervention, so that the objectives of the intervention could reach its maximum potential.

5 CONCLUSIONS

Language development is a crucial factor in social, emotional, behavioral, and cognitive relationships in adulthood. If a child experiences a delay in this development, it is important to intervene. Interventions carried out with psychoeducational designs have a good impact on the knowledge and understanding of MR parents on milieu teaching approaches in reading and singing activities. This activity is quite easy for parents to implement and quite fun for children, so the intervention process is convenient to carry out. The results of the intervention showed that parents understood and were happy with the milieu teaching method as a means of intervention, but in this study, there was no addition of new vocabulary to MR. There were many factors such as the length of the intervention, the consistency of the intervention, physical disorders that had not been detected, that influenced the outcome of this study. The results of the intervention will reach the maximum and comprehensive if carried out in a consistent and continuous time.

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Proceedings of The International Conference on Psychology and Education (ICPE)
Vol. 1 (2023)

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