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Early Intervention of Preschoolers with Speech and Language Impairments by Parents as First Teachers: A Case Study on Four Families in Kuching, Sarawak

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ABSTRACT

Parental involvement during early childhood development is important especially when the child has learning disabilities. This research aims to study the effectiveness of parental-based speech training programs for preschoolers with Speech Language Impairments (SLI) in a localized setting. The method used was qualitative and data was collected from selected preschoolers (N = 5) with different types of SLI symptoms. Each participant was assessed using a standardized assessment protocol to measure his/her language scale. The participants were given the intervention program by their own parents using the Hanen's It Takes Two to Talk program. The progress of each subject and observations from these sessions were documented. The participants were assessed again once the intervention had been implemented. Substantial results were achieved when all subjects showed improvements in language comprehension and production skills. These results highlight the importance of parental involvement as first teachers in the early intervention of children with SLI.

Keywords: Early intervention; speech language impairments; preschoolers; parents as first teacher

INTRODUCTION

Language is a cognition that truly makes us human. Unlike other species, humans can express infinite ideas with one another through sets of symbols in the form of words, speech and writings. Speech and language impairments (SLI) is defined as a communication disorder such as stuttering, impaired articulation, a language impairment, or a voice impairment that adversely affects a child's educational performance (Individuals with Disabilities Act [IDEA], 2004). SLI is a learning disorder faced by many children around the world and it is a major concern among parents. Traditionally, these disabilities or impairments are widely accepted by locals to be delays in learning development. Terms like "slow learner" come to mind and most parents

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would think that it is just a phase and their children will probably get better as they mature. Much to the dismay and frustrations of some concerned parents, they will do almost anything to treat their children from these disabilities. Those who can afford the services of private therapists would send their children to reader schools or private speech therapy clinics. However, for a majority of parents in Malaysia, many can only afford the speech language therapy services offered by the National Health Care Service.

According to the 2012 Annual Report by the Malaysian Ministry of Health, there are approximately 162 speech therapists employed in the ministry. In another report, the Director of Family Health Development, Toh Puan Dr. Safurah (2015) stated that the Malaysian ratio between therapists and patients is still low that is 1 therapist to 100,000 patients (Lee, 2016). It was reported that there were 32,590 patients aged 0-12 years (MOH, 2007) receiving rehabilitation from multiple disabilities ranging from cerebral palsy, blindness to speech and hearing impairments. A speech therapist at the Petrajaya Health Clinic revealed that there are only 4 speech therapists available for the public health services for the whole of Sarawak (E. H. Tan, personal communication, October 4, 2016). Therapy sessions would last for an hour and done once every 3 to 5 months. The reasons for the gap are that the services are still new and the demand is on an increase. Having a one-hour therapy every 3-5 months is insufficient because by receiving only one session every 3-5 months, the child would have received an extremely low frequency of intervention in contrast to the recommended intervention intensity according to findings on evidence-based research on speech and language intervention (Justice, Logan, Schmitt, & Jiang, 2016). Therefore, the parents themselves must be more proactive to provide any form of support they can give during the crucial time of early childhood development between the ages 1 and 3.

METHOD

Participants

Potential participants were chosen selectively from the Kuching district in the state of Sarawak, Malaysia. This research concentrated on children encountering problems with speech and language development. The number of participants involved in this study was 5 preschoolers aged three years to seven years and six months with speech and language impairment (SLI). The samples were previously diagnosed using guidelines based on protocols set by the Ministry of Health of Malaysia (Ismail et al, 2012). The following are a brief background of the subjects. The study was conducted at the participants' residence.

Assessment

All the subjects were administered a pretest and posttest using The New Reynell Development Language Scale (NRLDS). The assessment measures language and speech competency on two scales, which are the Comprehension Scales and the Production Scales. The

Comprehension Scales measures the child's understanding of words and relations between two words. The Production Scales, on the other hand, test the child's ability to produce words based on what he/she saw and asked to do in the task given. These tasks tap the use of salient prepositions as common two word utterances focusing on semantic relations and locatives (Letts, Sinka, & Edwards, 2011)

Treatment

The parents were given a session to watch the Hanen's It Takes Two to Talk DVD with the researcher. It Takes Two to Talk by Ayala Hanen Manolsen (Pepper & Weitzman, 2004) is a guidebook created for parents who are keen to do interventions in their child's speech impairments. It now includes a self-help DVD which helps the parents understand the methods used to help communicate with their child. After the session, the parents were briefed on the methods used for intervention and any questions regarding the program were answered. The parents were required to spend at least an hour a day doing exercises from the guide book and observed by the researcher. A questionnaire was given to the parents to state their views on the methods used and on their personal feedback.

FINDINGS

After watching the DVD with the parents, the parents were required to identify the stage of communication in their child. After a few discussions, the stage of each child was identified as shown in Table 1.

NRDLS Comprehension Pretest and Posttest Scores

The pretest assessment was done on each child to obtain the initial comprehension score prior to the treatment. After a month, a post-test assessment was done on each child to obtain the final score preceding the treatment. Results are presented in Table 2 to 5, along with current developments through observation, and findings from data collection, which were collected using questionnaires. The results show the equivalent age of each child.

Table 1: Identified Stage of Communication

Participant	*Stage of Communication*
Participant A	Discoverer
Participant B	First word user
Participant C	Combiner
Participant D	Combiner
Participant E	Combiner

Table 2: NRDLS Pretest Comprehension Scores

Participants	Raw Score	Standard Score	Standard Score confidence band	Percentile rank	Age equivalent	Age equivalent confidence band
Participant A	7/72	69	2.00 to 2.11	1	**<2.00**	<2.00 to 2.03
Participant B	6/72	69	6.09 to 6.11	1	**<2.00**	<2.00 to 2.03
Participant C	58/72	77	6.03 to 6.05	6	**4.06**	3.10 to 5.00
Participant D	68/72	120	6.06 to 6.08	91	**7.04**	5.07 to 7.06
Participant E	66/72	108	6.06 to 6.08	70	**7.04**	5.07 to 7.06

Table 3: NRDLS Posttest Comprehension Scores

Participants	Raw Score	Standard Score	Standard Score confidence band	Percentile rank	Age equivalent	Age equivalent confidence band
Participant A	15/72	69	3.00 to 3.02	1	**<2.00**	<2.00 to 2.03
Participant B	27/72	69	7.00 to 7.02	1	**2.04**	2.02 to 2.04
Participant C	71/72	131	6.03 to 6.05	98	**7.04**	5.07 to 7.06
Participant D	67/72	114	6.06 to 6.08	82	**7.04**	5.07 to 7.06
Participant E	69/72	124	6.06 to 6.08	94	**7.04**	5.07 to 7.06

Table 4: NRDLS Pretest Production Scores

Participants	Raw Score	Standard Score	Standard Score confidence band	Percentile rank	Age equivalent	Age equivalent confidence band
Participant A	0/64	69	2.00 to 2.11	1	**<2.00**	<2.00 to 2.03
Participant B	11/64	69	6.09 to 6.11	1	**<2.00**	<2.00 to 2.03
Participant C	43/64	73	6.03 to 6.05	4	**4.01**	3.08 to 4.03
Participant D	40/64	69	6.06 to 6.08	1	**<3.09**	3.05 to 4.02
Participant E	40/64	69	6.06 to 6.08	1	**<3.09**	3.05 to 4.02

NRDLS Production Pretest and Posttest Scores

The pretest assessment was done on each child to obtain the initial language production score prior to the treatment. After a month, a posttest assessment was

Table 5: NRDLS Posttest Production Scores

Participants	Raw Score	Standard Score	Standard Score confidence band	Percentile rank	Age equivalent	Age equivalent confidence band
Participant A	10/64	73	3.00 to 3.02	3	**2.00**	<2.00 to 2.03
Participant B	18/64	69	7.00 to 7.02	1	**2.07**	2.04 to 2.09
Participant C	57/64	102	6.03 to 6.05	55	**6.01**	5.07 to 7.06
Participant D	54/64	90	6.06 to 6.08	26	**5.10**	5.01 to 6.10
Participant E	55/64	90	6.06 to 6.08	26	**6.01**	5.03 to 7.01

done on each child to obtain the final score proceeding to the treatment. Results are as shown in Table 5 along with latest development through observation and data collection through questionnaires. The results show the equivalent age of each child.

Effectiveness

As shown in Figure 1 and Figure 2, the raw score of each subject was influenced by the degree of speech impairments. However, during the one month period, the results were significant with the increase in performance of each child. The comprehension or word acquisition in all but one participant increased.

Participant A and B demonstrated increase in language comprehension despite still scoring below average score. An increase in performance shows that with more parental interaction between parent and child, the child begins to respond to the attention given and begins to learn more. Participant D had a slight decrease in performance in the assessment scores but his score was still on par

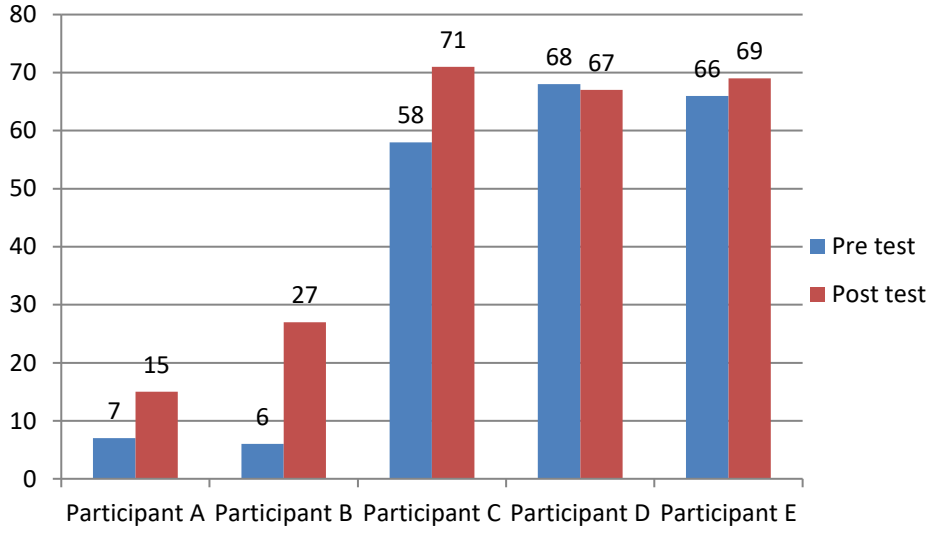

Figure 1: NRDLS Comprehension Raw Score Comparison Scores

Table 6: Percentage (%) Performance in Language Comprehension Scale

Participant	Pre test	Post test	% Performance
Participant A	7	15	11.11
Participant B	6	27	29.17
Participant C	58	71	18.05
Participant D	68	67	-1.39
Participant E	66	69	4.17

with his equivalent age level as with participant C and participant E. All three participants obtained score average which is equivalent to their age. The language production score also increased for all participants as shown in Table 7.

Table 7 shows significant increase in language production scale. Participant C and D demonstrated a phenomenal increase of 21.87% in production scale. Participant C was given the opportunity to voice out her opinions. She had begun to speak out more and interacted with her parents especially her mother. Based on the assessment observation on Subject C, it was noted that she was more cheerful with the attention given and was more cooperative in her interactions. Participant D also received more attention from the parents, and was also more cooperative during the assessment process. Participants D and E results were almost identical, most likely because they shared a similar social and environment setting.

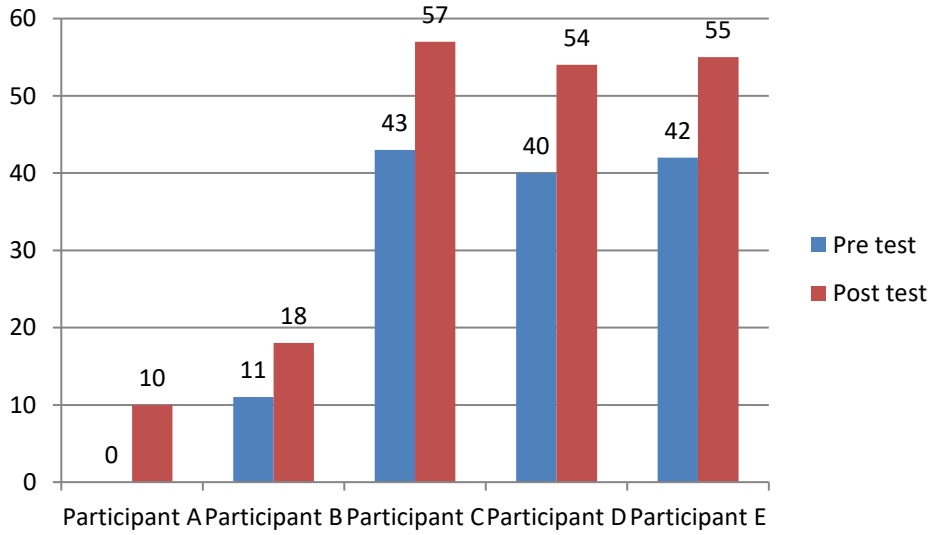

Figure 2: NRDLS Production Raw Score Comparison Scores

Table 7: Percentage (%) Performance in Language Production Scale

Participant	Subject	Pre test	Post test	% Performance
Participant A	Subject A	0	10	15.63
Participant B	Subject B	11	18	10.94
Participant C	Subject C	43	57	21.87
Participant D	Subject D	40	54	21.87
Participant E	Subject E	42	55	20.31

Challenges and Solutions

Findings in the questionnaires and feedback from the parents show that all of them are satisfied with the tools especially the DVD as it helps them identify to the child's stage of communication. The DVD also explains how to proceed with the necessary interventions. The DVD highlights the different stages of Language acquisition of each child. With each stage identified during early stages, the methods of interventions according to these stages are explained in the guide. Thus, having the DVD eases the process of parent training. Parents of participant C suggested that the guidebook should be in Bahasa Melayu so it could be understood easily and shared with other parents who cannot understand English. She further explained that her methods were purely based on the guidebook but using the local language. Having to converse in Malay can ensure that her child develops her mother tongue. Parents of participants D and E also voiced their opinions with regards to their second and tertiary language which was Malay and Bidayuh. They suggested that methods be translated to other languages too to benefit other non-Malay or English speaking community and ensure that their culture can be preserved for future generations.

Parents of participants A and B both agreed that additional sessions must be implemented to achieve better results due to the severe conditions of their child but found the results satisfying as compared to previous efforts. Knowing the condition and stage of their child's communication level has given them a sense of relief and they are continuing with their sessions using methods from the guidebook.

Parents of participant A suggested that group sessions should be held among parents with SLI children where they could share ideas and experiences. Therapy exercises and classes can be held to help parents cope with the situation.

DISCUSSION

The increase in performance had far succeeded expectations of the parents participating in this research. The results had further improved the conditions of their children at a quicker rate as compared to before. Active participation by parents is greatly needed in early intervention and should made known to all those with similar problems. Support

groups among parents should be created in order for them to discuss and conduct practical therapy sessions. Despite the favorable results, there were a few limitations in regards to the execution of this study such as the size of sample group, the choice of the intervention instrument and the selection of the assessment instrument.

The research involved a limited number of samples (N=5), whereas it could be improved by adding more samples with a variety of variables such as sex, race, types of speech disabilities and age group. Comparisons between race and sex of the subjects could be done by seeing how interventions can be improved with these variables within the current population.

Another limitation in this study is that this research was only focused only on Hanen's It Takes Two to Talk guidebook and DVD as an SLI intervention tool without adding another SLI program tool for comparison. There were previous studies using the same material (Girolametto, Pearce, & Weitzman, 1996). They examined the effects of focused stimulation for promoting vocabulary in children with delays. However, they did not use the New Reynell Development Language Scale which has multi lingual features in its assessments.

Most self-help books in the market are catered for instructors and therapist. Hanen's It Takes Two to Talk was catered for parents and provides simple to understand literature and clear video DVD instructions as a complete package.

Another type of SLI interventions that can be used for comparative analysis is the LinguiSystems: Easy Does It for Articulation a Phonological Approach and LinguiSystems Take Home Preschool Language Development (Drake, 2013). This SLI tool was created by Martha Drake, an experienced speech pathologist who had developed these tools to be used by therapist and parents on SLI patients using phonetics and take-home exercises. A comparison study between these two programs would be interesting as it could mete out the methods of therapy play and linguistic exercises.

Another instrument to be considered to improve the findings would be the assessment kits. The MCHAT assessment provided in the health care booklet did not provide enough information on the results of their assessments unlike the NRDLS kit. It could be considered as a filtering assessment, to ease the process of intervention where the health departments involved will be referred to according to the findings of the assessments. Another assessment kit which can be considered is the Wechsler Preschool and Primary Scale of Intelligence (WPPSI), a well-known assessment kit used to measure a child's intellectual in verbal and cognition performance. Subtests included in the kit can provide additional results such as an assessment of general intellectual functioning, an assessment to identify intellectual giftedness and an assessment to identify cognitive delay and learning difficulties. WPPSI requires a certified language

pathologist to execute the assessments. Although it has been translated to multiple languages, it does not cater to indigenous languages unlike NRDLS which has a multilingual kit to assist language barriers. The improved version of the NRDLS kit does relate to this study in regards to its multilingual options which are hard to find in other types of assessments. Nevertheless additional information using theses assessments on a child's can be helpful in diagnosing their disabilities.

Summary

This present research suggests that with early intervention tools for SLI such as Hanen's It Takes Two to Talk guidebook and DVD, parents and guardians are able to take up the role as first teachers. Parents and caregivers can now lower their dependencies on SLI therapies implemented by the National Healthcare Service and make initiatives by doing SLI therapies at home. Involving parents as first teachers of children with SLI in the intervention activities has enabled the development of language to occur at a faster rate.

This study also shows that early intervention is not only a parent support intervention but also a family support effort as most of the subjects' family members such as siblings, cousins and even grandparents are also helping in the intervention. Active participation within the family will also help early intervention whereby therapy sessions can be constantly done every day not only by parents but also with the other family members.

This study also suggests that the tool used in this research is suitable for further development and improvisation to meet needs of the local population. Methods from the guidebook are found to be useful by parents for the intervention sessions, thus suggesting that the role of parents as first teachers in early intervention can improve preschoolers with SLI.

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