

# EQUINE THERAPY INTERVENTIONS IN IMPROVING LANGUAGE ASPECTS OF DYSLEXIC CHILDREN

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## ABSTRACT

*Animal-assisted therapies are being widely acknowledged for improving the needs of children with various difficulties. One of the many animal-assisted therapies that are known to be beneficial includes equine therapy. The primary aim of this research was to study the improved language aspects of dyslexic children after undergoing five equine therapy interventions. The five equine therapy interventions include friendly introduction to horses, auditory comprehension, phonological awareness, sentence mastery and spelling ability. A randomised study was done by selecting 16 dyslexic children from Malaysia Dyslexia Association in carrying out equine therapy. Results from the study done proved that the dyslexic children chosen has demonstrated vast improvement in the following aspects of language, namely comprehension, phonological, sentence mastery and spelling. The general assumption of this study is that every equine therapy intervention has its own unique objective and outcome on dyslexic children. Further research is required in this domain to study the long-term effects of equine therapy in other areas of special need children.*

**Key Words:** Intervention study, equine therapy, equine-assisted activities, dyslexia, language

## INTRODUCTION AND BACKGROUND

Equine therapy includes the utilization of a horse as an aiding tool for rehabilitation purposes. The term '*hippotherapy*' was first introduced by Hippocrates during the 1960s. Truly, the antiquated Greeks considered horseback riding as a method for transportation, in addition as a method for improving the wellbeing for the impaired (Hallberg, 2008). As indicated by the definition by Professional Association of Therapeutic Horsemanship International (2016), horse treatment is an equine-assisted action with the purpose of emphatically affecting the

psychological, physical, emotional and cognitive areas of people with exceptional needs. (Ward et.al, 2013). These advantages have prompted the utilization of horses in two primary kinds of intercessions: Animal-Assisted Activities (AAA) and Animal-Assisted Therapy (AAT) (Lentini and Knox 2009). Equine therapy falls into both of these sort of mediations, in particular equine-assisted psychotherapy (EAP), hippotherapy (HT), and therapeutic horseback riding (THR). In any case, equine therapy was not broadly known until its implementation in Germany, Austria and Sweden during the 1980s. Preceding the acknowledgement of equine therapy in European nations, customary traditional interventions was favoured locally. Studies carried out by The American Hippotherapy Association (AHA) have demonstrated that equine therapy can improve physical, social, intellectual, mental, and learning aspects.

Dyslexia is a specific learning difficulty and the causes are still being wildly debated worldwide (Bull, 2007). The term '*dyslexia*' begins from the combination of two Greek words '*dys*' which signifies 'difficulty' and '*lexis*' which signifies 'language'. In other words, dyslexia signifies language problems (Ott, 1997). This language difficulty is also in line to issues in identifying letters, sounds, and words. The meaning of dyslexia was first introduced by the World Federation of Neurology (1968). Dyslexics face difficulties to master the language aptitudes unlike normal people. Also, the majority of dyslexics have low confidence due to their language learning difficulty. This is on the grounds that their degree of language ability in both the oral and written aspects have issues. Other challenges in relevance to dyslexia also include psychomotor, psychological, emotional and cognitive areas. As indicated by Kuruvilla, Murdoch and Goozee (2007), equine therapy affects the tactile recuperation of the psychomotor domain which will straightforwardly influence one's verbal discourse.

Meanwhile, most experts and researchers in the field of dyslexia in Malaysia only study dyslexia learning problems in terms of reading, writing, arithmetic and so on, but do not focus on the use of effective modern therapy to overcome their language difficulties as a whole. The lack of extensive studies in this field provided a loophole for the researchers to study equine therapy in terms of language aspects among dyslexic children. Equine therapy through various interventions with dyslexic children is a more holistic approach compared to traditional therapies.

## **METHODOLOGY**

This study involved 16 dyslexic children from Bangi Dyslexia Center, Malaysia Dyslexia Association as the sample of this study. The children participated in equine therapy activities for 4 months and were divided into two sessions per month. Each session involved a total of 8 dyslexic children. Each session was conducted for 75 minutes. The equine therapy activities were conducted at the Equine Center, Universiti Putra Malaysia. Equine Center, UPM has an international standard sand paddock and covers an area of four hectares covering two stable buildings. In addition, it also

provides 12 horses obtained from Australia and has seven qualified horse keepers. UPM Equine Center provides various horse riding services such as horse riding classes, horse rental for riding and filming, horse riding track rental and stable rentals.

Prior to conducting the equine therapy activities for dyslexic children, the researchers consulted with dyslexia specialists, equine therapists and psychologists to obtain their views and feedback on the intervention. It was conducted to ensure that the activities carried out were suitable for dyslexic children. Besides that, the equine therapy activities carried out had to be structured to answer the questions and objectives of the study. The following is the feedback from the following experts:

**Table 1: Feedback on equine therapy activities by experts**

<b>Dyslexia specialists</b>	
1.	Equine therapy activities should emphasize known vocabulary for dyslexic children.
2.	Equine therapy activities should apply creative, engaging, and 'hands on' approach.
<b>Equine therapists</b>	
1.	Equine therapy activities should focus on a variety of skills to be improved.
2.	Instructions and procedures for equine therapy activities should be clear and easily understood by dyslexic children.
<b>Psychologists</b>	
1.	Equine therapy activities should challenge the abilities of dyslexic children.
2.	Equine therapy activities must instil positive values in dyslexic children.

## DISCUSSION

This study focuses on equine therapy in the social skills aspects of dyslexic children. As explained in methodology, the researcher applied Equine-Assisted Learning approach, American Hippotherapy Association (AHA) in this study. The equine therapy activities conducted for dyslexic children was focused on the four aspects highlighted in the approach, namely psychomotor, behavioural, speech and neurological.

### **Study One: Friendly Introduction to Horses**

The aim of study one is to provide the exposure of horses to the dyslexic children. Study one adapted the psychomotor domain from the Equine-Assisted Learning, American Hippotherapy Association, AHA approach. Subjects were divided into three groups and each group was led by a horse keeper. Horse keepers then brought the dyslexic children to the horse stables for acquaintance activities. With the permission of dyslexic teachers, the dyslexic children were able to touch the horses, brush their manes and feed them carrots. Study one resulted in changes from various aspects. Sensory activities that involve dyslexic children in contact with horses can build positive relationships as a whole. The sensory activities that were carried out in study one were able to develop their confidence in trying something new in a different environment. (Aydin, S., 2008 and Nagahashi, 2007). The majority of dyslexic children were more comfortable with the horses and were able to express their feelings more expressively after the activity. They were excited and more confident in speaking when relaying their experience to their friends and teachers. Besides that, study one supported the development of psychomotor aspects. They use their fine motor skills in this activity such as holding, touching, rubbing and feeling. Sensory activities can improve their memory abilities because dyslexic children are more likely to learn something new by experience and not solely by conventional methods. The impact of this equine therapy activity is in line with the findings of a study by Kuruvilla, Murdoch & Goozee (2007) which proved that equine therapy has an impact on the motor sensory directly. Based on the study, the two domains of motor articulation and speech are interrelated. According to Path International (2016), equine therapy helps dyslexic children to improve the development of cognitive, emotional, social and psychomotor functions as a whole.

### **Study Two: Auditory Comprehension**

The goal of the second study is to listen and repeat the story presented and answer questions about the story. Study two adapted the speech domain from the Equine-Assisted Learning, American Hippotherapy Association, AHA approach. While riding a horse, the subject will listen to a story told by the equine therapist. After listening to the story, the subject will then repeat the said story to the therapist. Stable cones are arranged in the sand paddock area before the activity begins. When the subject reaches a stable cone while riding a horse, the subject will continue the story based on his/her own creativity or thoughts. Next, the therapist will then ask relevant questions about the story presented by the subject. They will ride a horse and repeat this activity for 15 minutes. As proven by extensive studies on the field of dyslexia, dyslexic children will reinforce sound identification when listening to a story. This is better known as auditory comprehension. Activities that enforces comprehension and understanding through auditory means help dyslexic students learn better. Furthermore, study two also tests the articulation abilities of dyslexic children. Speech articulation is

clearly important in the ability to speak or communicate with each other (Mahzan, 2012). This activity was conducted to identify the extent to which dyslexic students can remember things, information and particulars shared during this activity. Due to their learning disabilities, dyslexic children sometimes forget and do not have a strong memory (Vijayaletchumy Subramaniam & Kavenia Kunasegran, 2019). According to a study conducted by Shurtleff (2009), children with learning difficulties face challenges in motor sensory aspects that have a relationship with neurological function, which is the foundation of speech. Dyslexic children are often silent and have difficulty communicating with people without any difficulty. While riding a horse in study two, they are attracted to the story being told and their focus span remains satisfactory. Most of them were able to repeat the story. When asked to continue the story, they looked confident and happy while telling the story on horseback. When asked questions related to the story, they did not seem afraid or anxious to speak out. They were able to focus more because of the new environment. Their curiosity was peaked and they were thinking more out of the box. The results of this study are in line with the findings of the study Limond et al. (1997) whose study subjects were more responsive to people and their environment after undergoing 4 weeks of equine therapy. Not only that, the researchers found that the advantages and impact of equestrian therapy on dyslexic children are more or less the same for children with disorders such as autism and ADHD in the field of speech.

### **Study Three: Phonological Awareness**

The aim of study three is to identify the first, middle and last sounds of a word. Study two adapted the speech and neurobiological domains from the Equine-Assisted Learning, American Hippotherapy Association, AHA approach. As for the procedures, the subject will ride a horse for 15 minutes on the track. While riding a horse, the subject will hear 10 words spoken by the therapist. Before the word is given to the subject, the therapist will state either the "first, middle and last sounds". After listening to the word delivered by the therapist, the subject will write the letter that gives the sound to the word in the whiteboard given on the subject's lap. Study three demonstrated benefits in both speech and neurobiological aspects. Dyslexic children will strengthen their understanding of both visual and auditory aspects. Sound identification should be determined by dyslexic children while the therapist gives specific words. When they identify the sound auditory, they will write the sound to the word on the whiteboard. Early literacy skills in the learning process have certain components as in communication skills (Kavenia Kunasegran & Vijayaletchumy Subramaniam, 2020) Communication skills involve aspects of listening, speaking, reading, and writing in general (Beaty, 2013). However, components in early literacy skills use more specific terms, namely language and communication. Thus, sound plays a high function in the language and speech domain. This equine therapy activity is able to help dyslexic children to spell, read and write better. In addition, study three stimulates visual and auditory phonological awareness. Language structure covers several levels and among them is the identification of syllable sounds (Siti Az Zaharah Ismail, 2017). In identifying the sounds of the first,

middle or last syllable of a given word, this activity can enhance these early literacy abilities in the learning process. Equine therapy trains dyslexic children in terms of their psychology, speech and language (Tuba Tulay & Hilmi Atasevan, 2015). The occurrence of this equine therapy activity is in line with the findings of a study from researchers Tuba Tulay & Hilmi Atasevan (2015) who studied the benefits of equine therapy from a social aspect. The results show that children show improvements in terms of behaviour, communication and language.

#### **Study Four: Sentence Mastery**

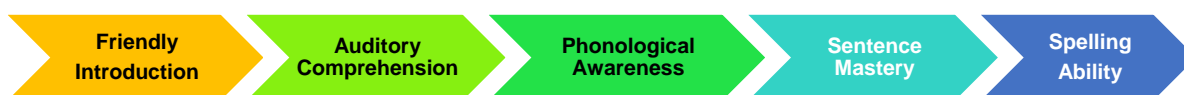
The goal of the fourth study is to form a sentence with three given words. Study four adapted the speech domain from the Equine-Assisted Learning, American Hippotherapy Association, AHA approach. While riding a horse, the subject will hear three words delivered by the therapist. After listening to the words, the subject will form and write a sentence using the three words given on a small whiteboard on the subject's lap. Next, the subject will read the sentence to the therapist. The subject will ride a horse and repeat this activity for 15 minutes. In the process of constructing sentences, dyslexic children will hear, understand and pronounce the sounds of the language, namely the alphabet, words, phrases and sentences correctly. They also use the correct language system in speech and writing. Both of these aspects are important in the learning process. In terms of writing, dyslexic children are weak in sentence construction (Vijayaletchumy Subramaniam & Kavenia Kunasegran, 2020). They produce sentences that are too simple and use the same style. Furthermore, they also have a relatively limited vocabulary. This causes their writing process to be of poor quality and less interesting (Knowles, 1975). Through study four, dyslexic children were able to construct and write words, phrases and sentences correctly. Furthermore, there was also a group of dyslexic children who can construct and write sentences creatively. Through exposure to new activities and environment, they become more creative in writing. They used newly learned words while constructing sentences. According to Davis (1992), dyslexic children have excellent long-term memory in the context of people's experiences, locations, and facial expressions. However, they have a short-term memory in remembering new sequences, facts and information. Furthermore, they are more likely to think using images and feelings, rather than with voices or words. However, there were significant changes in dyslexic children after undergoing equine therapy. Since this intervention allowed an opportunity to learn outside the classroom, they remember newly heard words and use them while communicating.

#### **Study Five: Spelling Ability**

The aim of the fifth study is to spell the word according to the specific instructions given. Study five adapted the speech domain from the Equine-Assisted Learning, American Hippotherapy Association, AHA approach. The subject will spell the words given by the therapist while riding a horse in the track. Ground poles will be provided in the track before the equine therapy activities begins. The

subject will give letters individually when stepping the poles provided. If the subject gives the wrong answer, the horse will stop and will not move forward with the control of the horse keeper and equine therapist. Dyslexic children have difficulty pronouncing spelled syllables (Vijayaletchumy Subramaniam & Kavenia Kunasegran, 2019). Sometimes, they will sound words phonetically and this hinders the reading process in their learning. According to Wan Muna Ruzanna (2013), spelling proficiency is very important in the learning process of dyslexic children. Her study shows the forms of letter confusion created by dyslexic children such as confusion with almost identical letters. Through this equine therapy activity, dyslexic children will give letters to the sound when stepping over the poles provided. This will help dyslexic children in sound segmentation as they have challenges in sound blending (Sariah Amirin, 2019). According to Braun (1997), dyslexic children have trouble remembering and getting the right combination of sounds for long words. The words that could be spoken are at the tip of his/her tongue, but they find it difficult to adjust the exact combination of sounds to produce the word. Study five in this research helps curb this problem in dyslexic children. As a whole, dyslexic children show a positive and open attitude when participating in the activity. Based on the researcher's observations during the activity, they feel excited and happy when they answer correctly. They enjoy learning to spell new words when on horseback in this activity.

**Diagram 1: Five Equine Therapy Interventions**



## CONCLUSION

In summary, this study reports that all five equine therapy interventions (Diagram 1) have shown significant improvement in the language aspects of dyslexic children. Through the activities carried out during equine therapy, the researchers found that dyslexic children were able to convey their thoughts more accurately. According to the dyslexia teachers at the centre, there were improvements in aspects of reading in the Malay language. Not only that, equine therapy has improved their speech articulation and the confidence of dyslexic children to read in the process of learning. This study has proved that equine therapy has beneficial impacts on the language aspect on dyslexic children, such as auditory comprehension, phonological awareness, sentence mastery and spelling ability. The most significant of impact of equine therapy on language aspects among these dyslexic children are improvements in phonological awareness and auditory comprehension.



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