

Parents Perspective on the Benefits of Hippotherapy For Children with Neurodevelopmental Disorders (NDD)

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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v13-i12/18736> DOI:10.6007/IJARBSS/v13-i12/18736

Published Date: 26 December 2023

Abstract

The use of horses as a treatment strategy has been utilized by various individuals with neurological disorders in the past. However, hippotherapy is an expensive form of treatment. Due to its costly price, hippotherapy is not within easy reach in Malaysia. Thus, to outweigh the cost of hippotherapy, the benefits of using horses as an alternative treatment should be addressed to promote the awareness and benefits of hippotherapy to the general public and health ministry in Malaysia. This qualitative study aimed to explore the perspectives of Malaysian parents of children with neurodevelopmental disorders (NDD) on the benefits of hippotherapy on their children. To meet the objectives of this study, a qualitative phenomenological approach was used. Semi-structured interviews were conducted on five Malaysian parents of children with NDD who were recruited through purposive sampling. Thematic analysis of the qualitative interviews identified three themes; improvements in function, benefits of hippotherapy's natural setting and challenges faced. Findings from this study provides an initial step for the Malaysian population to better understand the benefits of hippotherapy for children with NDD as well as provide another available form of rehabilitative treatment in Malaysia.

Keywords: Hippotherapy, Neurodevelopmental Disorder, Parent Perspectives, Rehabilitative Treatment

Introduction

The use of animals in therapies have been found to benefit children in the past (Morisson, 2007). The company of animals during therapy can produce feelings of peace and optimism in children (Koukourikos et al., 2019). According to Nimer and Lundahl (2007 as cited in O'Mahoney et al., 2019), animals have a unique likelihood to create a bond with individuals therefore using animals as a means for therapy may provide advantageous impacts for individuals. Nevertheless, the use of animals in therapy initiates the development of trust and bond between the client and therapists, thus, moving towards achieving the goals of therapy (Ogilvie, 2016 as cited in Koukourikos et al., 2019). Past research found that anxiety was highly reduced among individuals with mental disorders after engaging in Animal-Assisted Therapy (AAT) (Dimitrijević, 2009).

In recent times, using horses as a treatment tool in therapy is progressively being recognized globally (Koca & Ataseven, 2016). The term "hippo" originates from Greece which translates into "horse" in English (Heine & Benjamin, 2000 as cited in Macauley & Gutierrez, 2004). The use of horses as a treatment strategy has been utilized by various individuals with neurological disorders and disabilities such as stroke and spinal cord injury (Koca & Ataseven, 2015). This method of therapy utilizes three-dimensional movements of the horses' back that are channelled to the individual; hence the movements of the horse is used as a tool for treatment (Schwesig et al., 2009 as cited in Fizkova et al., 2013). The individual's sensory and motor skills will be activated to adapt to the momentum of the horse's walk. Therefore, the movements of the horse allow the child's sensory and motor to be engaged and occupied.

Past research has found numerous findings on positive physical outcomes of hippotherapy such as gaining better body control, posture (Beinotti et al., 2010; Fizkova et al., 2013) and gaining better body control, posture, and gait (Beinotti et al., 2010; Fizkova et al., 2013; Park et al., 2014). However, limited research focuses solely on the psychological effects of hippotherapy. In addition, past studies (Vermöhlen et al., 2018; Champagne et al., 2017 & Park et al., 2014) have addressed and focused on individuals with conditions such as multiple sclerosis and cerebral palsy. Therefore, this study chooses to address other range of disorders such as children with Neurodevelopmental Disorder (NDD). NDD includes ASD, Attention Deficit Hyperactivity Disorder (ADHD) and intellectual disabilities (APA, 2013; Reiss, 2009 as cited in Mullin et al., 2013).

Furthermore, there are studies that have been conducted on the benefits of therapeutic horse riding in Malaysia. For instance, a study examined the advantages of therapeutic horse riding for children with learning disabilities in Malaysia in terms of their development in social and emotional skills (Santoso & Ahmad 2016). However, although therapeutic horse riding is a form of horse therapy, it differs to hippotherapy. Hippotherapy is carried out by a team which includes a licensed speech, physical and an occupational therapist working altogether. In contrast, therapeutic horse riding only requires a verified therapeutic horse-riding coach together with available volunteers to assist (American Hippotherapy Association, 2010).

Current Study

Hippotherapy is an expensive form of treatment as horses are costly animals (McGowan, 2013). Due to its costly price, hippotherapy is not within easy reach in Malaysia (The Edge, 2020). However, it is necessary to address this problem within the Malaysian context as the benefits of using horses for treatment have been well supported in existing research by other countries (Govender et al., 2016; Park et al., 2014; Ajzenmen et al., 2013; Guerino et al., 2015). Hence, to address the problem, the researcher needed to obtain the perspectives of

Malaysian parents who are aware of hippotherapy and have sent their children with NDD for hippotherapy. This may be the initial step to gain better understanding and spread the awareness on the benefits of hippotherapy for children with NDD within the Malaysian context. Obtaining parents' perspectives is important as parents themselves closely observe and monitor the existence of the changes and improvements made by their children from attending hippotherapy (Vertes et al., 2018). In addition, if more research-based evidence regarding hippotherapy grows into positive light in Malaysia, it could convince the health ministry and health care providers to set up additional hippotherapy centres and make it easily accessible and affordable to the public from all social classes in Malaysia.

Therefore, this study aims to examine the physical benefits of hippotherapy, the psychological benefits of hippotherapy and the cognitive benefits of hippotherapy as perceived by Malaysian parents with children with NDD. The significance of study is so that parents of children with various disabilities or disorders can look into hippotherapy as an alternative method of treatment. Also, with findings from this study, Malaysia's Health Ministry can implement hippotherapy programs using ministry resources to set up hippotherapy centres. This may benefit the general public especially those who are unable to afford private hippotherapy sessions.

Methodology

Method and design

To meet the objectives of this research, a qualitative with phenomenological approach was used. A phenomenological approach is used to investigate the perspectives of individuals who have experienced a particular phenomenon (Teherani et al., 2015 as cited in Neubauer et al., 2019). Hall et al. (2016) stated that phenomenological approach is used to report the event experienced by a particular group of individuals and to understand a phenomenon. Therefore, phenomenological approach was an appropriate approach to be used in this study as it would like to explore the perspectives of parents with children with NDD who have engaged in hippotherapy in Malaysia. Thus, the researcher has gained insights from the parents' perspectives on the hippotherapy as parents see the progress of the child first-hand.

Sample and location

A total of five parents of children with NDD who have undergone or are currently undergoing hippotherapy were recruited through purposive sampling technique as a phenomenological approach requires a minimum of three and a maximum of 10 participants (Creswell & Creswell, 2018, p. 262). Moreover, purposive sampling only involves a few number of participants that can provide the utmost applicable information about the specific phenomena which this study aimed to explore (Teddie & Yu, 2007 as cited in O'Mahoney, 2019, p. 45). Thus, the participants were recruited using the inclusion criteria such as Malaysian parent whose child is diagnosed with NDD and performs hippotherapy in Malaysia. The participants' children were aged between 8 to 15 years old, consisting of both sons ($n = 3$) and daughters ($n = 2$). All of the children are currently still undergoing hippotherapy sessions except for one participant who have decided to discontinue her child's sessions. The participants' children were diagnosed with different NDD diagnosis. Table 1 below describes the children's demographic in details.

Table 1:*Demographic details of children*

Participant of participating in	Participant's gender	Child's age	Child's gender	Child's diagnosis	Initial age for participating in hippotherapy	Years of hippotherapy
1	Mother	9	M	ASD	6	3
2	Mother	8	F	ASD & GDD	8	2
3	Mother	8	F	ADHD	5	6 months
4	Mother	11	M	ASD	9	3
5	Mother	15	M	ASD	7	8

Note: *ASD (Autism Spectrum Disorder), GDD (Global Developmental Delay), ADHD (Attention Deficit Hyperactivity Disorder)*

Data collection

The participants were scouted from tagged photos by the Hippotherapy centre's Instagram accounts in areas of Kuala Lumpur and Selangor. The participants were contacted through their respective Instagram profiles as the researcher sent a direct message to their accounts regarding the aim of the study. Interested participants were emailed an information letter as well as an informed consent form. Prior to the online interview, the participants were required to sign the consent form as a form of evidence that they have agreed to participate in the study.

The study implemented a semi-structured interview which permits the relationship between the interviewer and interviewee to be reciprocal (Galleta, 2012 as cited in Kallio et al., 2016). For instance, the interviewer was allowed to probe questions from interviewees initial responses and the interviewee had the freedom to voice out their opinions (Robert Wood Johnson Foundation, 2008 as cited in Kallio et al., 2016). Moreover, the researcher administered open-ended questions during the interview as it gave opportunities for participants to respond with a broader range of responses (Allen, 2017).

In total, the interview consisted of two sections. The first section was to obtain demographic information about participant's children with NDD. The second section was to obtain the parents' perspectives on the benefits of hippotherapy on their children with NDD. The interview questions with regards to the physical benefits of hippotherapy in the present study was based on a theme formulated in a study by Scotland-Coogan et al. (2020).

One of the themes formed were parents' opinion on the physical improvements of hippotherapy. With regards to the psychological benefits of hippotherapy, the interview question was based on a theme formulated in a study by Scotland-Coogan et al. (2020) such as, parents' opinion on their child's quality of life after engaging in hippotherapy. Next, the interview questions with regards to the cognitive benefits of hippotherapy was based on a theme generated in a study by Kunasegran and Subramaniam (2020) such as parents' opinion on their children's cognitive improvements after engaging in hippotherapy.

Data analysis

Thematic analysis was used to analyse the data collected from participants as this study aimed to explore parents' perceptions on hippotherapy which was interpreted and categorized into appropriate themes by the researcher. Thematic analysis is a procedure that involves examining, categorizing and providing insight to the established patterns of data into meaningful themes (Braun & Clarke, 2012). Therefore, familiarization with the data by rereading the transcripts, being cautious as to not miss out key terms or information that was useful to meet the study's objectives was taken into precaution.

Results

This study found three themes such as improvements in function; natural setting of hippotherapy; and challenges faced in regards to sending their children to hippotherapy. See Table 2 below for the summary of these themes.

Improvements in function

All participants disclosed that hippotherapy resulted in physical improvements in their children in general. Specifically, one participant mentioned that one of the noticeable physical improvements was the change in posture. Participants mentioned prior to hippotherapy, their children often used to slouch. Additionally, participants reported that they saw improvements in their child's strength whereby they have gained strength in their hands and core muscles. According to the mother, it was a result from engaging in hippotherapy. Next, participants reported that they observed improvements in their child's gross and fine skills as a result from engaging in hippotherapy. Finally, majority of mothers reported that they saw improvements in their child's balancing abilities.

"You can see her posture has improved compared to when she first started". (P1)

"After a while I can see the core strengthening up and he started to carry himself better in that sense". (P5)

With regards to the psychological benefits of hippotherapy, participants mentioned that their child's self-confidence blossom after engaging in hippotherapy. Mothers expressed their belief that as their children's self-confidence developed, they became braver. The mothers highlighted that their children are able to participate in daily living tasks more independently. Finally, the mothers also reported that they observed the positive change in mood of their children after attending hippotherapy sessions. The mothers mentioned that happiness and calmness was expressed by their children after hippotherapy sessions.

"He is starting to, you know, wash his clothes himself, make his own bed...he is learning how to cook simple stuff, scramble eggs chicken." - (P5)

"His mood is absolutely different after the session, you know um his level of anxiousness, the anxiety level and things like that oh you see he's so calm." - (P5)

Furthermore, with regards to the cognitive benefits of hippotherapy, participants mentioned that their children's receptive language has improved, where they were able to listen and follow instructions directed to them better. Additionally, the mothers mentioned that their

children have improved their ability to focus on a task for a longer period of time. Finally, two out of five mothers highlighted that their children are becoming better with communication.

“She’s getting really good at taking instruction, we see that after 2 years, she’s progressing very well.” - (P2)

“I think about 6 months or 1 year, we could see that his attention span has improved a lot and he is slowly getting better in communicating with us.” - (P4)

Participants mentioned that their child’s confidence grew from engaging in hippotherapy, thus the children now have the confidence to approach and socialize with strangers at the centre and other public places.

“We didn’t actually notice this but when we went to his school, at the year-end assessment the teacher said that ever since Z started hippotherapy he seems more confident in making friends..it might not be a direct correlation but before this Z tends to make friends with only one person and he sticks to that one person...and then when we started hippotherapy, his teacher was telling us she sees improvement in his social skills..like he now mixes and plays with other children too.” – (P1)

Natural setting of hippotherapy

Four mothers discussed the benefits of the outdoor setting in which hippotherapy is conducted.

Participants have mentioned that the setting of hippotherapy has positively contributed to the benefits of hippotherapy besides improvements in daily functioning. Mothers mentioned how natural exposure is different and beneficial in comparison to an enclosed therapy setting. Mothers have mentioned that being in nature, they observed their children were better at being able to process visual and auditory information.

“He is so calm and he starts noticing trees outside and the birds and the air you know and he becomes much more of a compassionate person towards animals.. so I see that as being very significant.” – (P1)

“Being outdoor definitely influences his progression, because being in nature as opposed to being in a classroom setting, you are being stimulated much more to what’s out there you know... instead of when you have four walls.. I think it is the most natural and one of the best, most effective way to treat a child with disabilities.” – (P5)

Challenges faced in regards to sending their children with NDD to hippotherapy

Despite participants reporting the benefits of hippotherapy on their children, a couple of participants have also highlighted challenges they faced. The challenges the mothers reported varied from one another. A mother reported she struggled to bring her son to his hippotherapy sessions during the beginning stage. Two mothers discussed the cost of hippotherapy as being one of the challenges they experienced, which led one of the mothers to discontinue her son’s hippotherapy sessions. Another mother found the location of the therapy centre a logistic challenge as they lived far from the centre.

“I stopped because number one it was due to the cost.” - (P4)

“At the moment, we are living in Shah Alam and it is not easy for us to access to the location because it is far from us.” - (P2)

Table 2:*Themes and Codes Identified*

Theme	Sub-theme	Codes
Improvements in function coordination	Physical benefits	Improved posture Increase in strength Improved motor
	Psychological benefits	Improved confidence Improved independence Mood enhancement
	Cognitive benefits	Receptive language Increased focus span Increased communication
Natural setting of hippotherapy	Benefits of nature	Tactile stimulation
Challenges faced	Lack of motivation	Persuasion
	Finance	Expensive
	Location of centre	Uneasy access

Discussion

The aim of this study was to explore the benefits of hippotherapy from the perspectives of Malaysian parents of children with NDD. The study's findings are parallel to previous research findings that have found hippotherapy provides physical, psychological and cognitive benefits to its participants (Ajzenmen et al., 2013; Krejci et al., 2015; Thompson et al., 2014).

Parents notice a huge range of improvements made by children while engaging in hippotherapy. These improvements include physical, psychological and cognitive benefits. Physical gains were seen in the increase in strength in the children's core muscles, allowing them to have a better posture when sitting. The participants reported improvements in both fine and gross motor skills such as better at cutting paper with scissors and walking. The children's balance was also said to be improved which may be due to the child adapting to different speed or direction of the horse. Psychological gains include increased confidence, mood enhancement and self-competence. The parents also noticed their children were capable of doing daily tasks at home more independently compared to before they engaged in hippotherapy. Some examples include: dressing themselves, taking care of personal hygiene, preparing meals on their own and being able to use utensils with both hands. These accomplishments were associated with the children's physical improvements. Children's mood was seen to be uplifted after their hippotherapy sessions by their parents. Cognitive gains were seen in improvements in receptive language, where the children were better with

understanding and following instructions given by their parents or teachers in school. The improvement in receptive language in general may be due to children being attentive and accomplishing tasks instructed by the therapists during hippotherapy. Parents notice the improvements in their children with the ability to communicate in what they want and do not want. For instance, one participant mentioned that her son is better at being assertive and expressive towards what he likes and do not like. This was something the participant reported being very pleased with as she wanted her son to stand up for his own. Improvements in communication may be because the children were encouraged to communicate with therapists, volunteers as well as with the horses during hippotherapy as mentioned by the participants.

Apart from benefits of areas of functioning, parents noted the benefits of having done therapy outdoors; in a natural environment. The children enjoyed being able to be surrounded with animals at the centre. Parents considered being in nature caused their children to be stimulated differently. For instance, the children are surrounded by animals, fresh air and sunlight. Thus, the children's sensors were deeply stimulated during hippotherapy as they are exposed to many factors such as tactile, sight and smell. This suggests that hippotherapy may be a form of treatment that is beneficial due to its holistic account, compared to a traditional four-walled therapy room. As a whole, having experience with nature enhances behaviour modification positively (Roe & Aspinall, 2011 as cited in Mustapa et al., 2018).

Additionally, parents voiced the challenges of hippotherapy they experienced. A couple of parents faced challenges bringing their child to their hippotherapy sessions. According to Scott (2005), children who never had contact with horses or never experienced riding a horse may be afraid. Moreover, as there are autistic children who are hypersensitive to sensors, the smell and noises of the environment may be overly sensitive or discomforting to some. Thus, this explains why some of the children were reluctant or unmotivated to go for hippotherapy. To overcome this challenge, parents used positive reinforcements as a form of persuasion. Moreover, the cost of hippotherapy parents was a challenging factor faced by a parent. Hippotherapy may not be applicable for all types of socio-economic classes. A parent had decided to stop their child's hippotherapy sessions due to its cost. It is important to look into the factor of challenges such as financial burden as not only it affects the family as a whole, but it also affects the consistent progression of improvement for the child. For example, the child may not attend the sessions regularly as the parents find the struggle to pay for the sessions. Thus, this may affect the child's progress. In addition, journey time was also an issue brought up by the parents. The location of these centres was not nearby where the parents lived. Therefore, the centre's location can be inconvenient for a number of clients as these centres are typically located further away from where they lived.

Although parents noticed many positive outcome with this form of therapy, parents also highlighted that they believe hippotherapy alone is not the sole reason for the positive improvements that they observe in their children's functioning. However, parents do believe that hippotherapy is essential and is a beneficial form of treatment to supplement with other forms of therapy which the children go through.

It is important to highlight the limitations of the present study. The study's small sample size is not large enough to generalize the findings to all children with NDD who perform hippotherapy throughout Selangor and Putrajaya. In addition, as the participants recruited were from Selangor and Putrajaya, the findings may not be representative to the wider Malaysian population. Also, as this was a qualitative research, the researcher relied solely on

parents' perspective of how hippotherapy has benefited the functioning of their children with NDD.

Conclusion

The findings of this study revealed that hippotherapy was effective in improving a variety of aspects of functioning. Consequently, hippotherapy has the potential to be a distinctive alternative to traditional therapies. Furthermore, because the study discovered that the exposure to natural surroundings during hippotherapy provides additional benefits for children with NDD, hippotherapy can be considered a comprehensive form of rehabilitative therapy. The findings of this study support the need for horse therapy, specifically hippotherapy, which has been shown to improve physical, psychological, social, and cognitive functions in a variety of settings. In combination with these advantages, hippotherapy is effective in targeting specific areas that require improvement in individuals with varying needs, with the goal of benefiting all aspects of their lives through the use of hippotherapy.

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