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Equine-Assisted Therapy as a Treatment Method
for Children with Autism Spectrum Disorders
- a qualitative study

Ridterapi som behandlingsmetod för
barn med autismspektrumstörningar
- en kvalitativ studie

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Abstract

Background: Autism Spectrum Disorders (ASD) are a group of developmental disorders characterized by impairments in communication, social interaction and imagination; deficits in gross and fine motor skill functioning are also common. Previous research has indicated that animals are well suited for treating children with ASD, although little research has been done to investigate Equine-assisted therapy (EAT) as a treatment method for children with these types of disabilities. EAT has been used to promote health for centuries. Today there is much clinical experience regarding the benefits of EAT, but despite the increasing demand for evidence-based treatment methods, there is still a scarcity of research to support it.

Purpose: To explore and describe how EAT as a treatment method for children with ASD is experienced by their parents and caregivers.

Method: A qualitative study was conducted with semi-structured interviews as the data collection method. Four parents and one caregiver were interviewed. A content analysis was then carried out to analyze the interviews.

Results: EAT was seen as a chance for children with ASD to have fun and have experiences that normally would be out of reach. Physical, social and psychological developments were experienced. The results also highlight aspects believed to be necessary to create a successful session. Cost and availability was also discussed.

Conclusion: The results of this study indicate that EAT may have a wide range of therapeutic benefits for children with ASD.

Key words: autism spectrum disorders, content analysis, equine-assisted therapy, interview, qualitative.



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Sammanfattning

Bakgrund: Autismspektrumstörningar karakteriseras av nedsättningar i förmågan till kommunikation, socialt samspel, fantasi samt motorik. Tidigare forskning har visat att det är gynnsamt att använda sig av djur vid behandling av barn med autismspektrumstörningar, trots detta har få studier gjorts för att undersöka ridterapi som en behandlingsmetod för barn med dessa typer av handikapp. Ridterapi har använts i hälsofrämjande syfte sedan lång tid tillbaka. Idag finns det mycket klinisk erfarenhet gällande ridterapi, trots detta finns det en påtaglig brist på forskning inom området.

Syfte: Att beskriva hur ridterapi som behandlingsmetod för barn med autismspektrumstörningar uppfattas av deras föräldrar och assistenter.

Metod: Studien har en kvalitativ ansats med semistrukturerade intervjuer som datainsamlingsmetod. Fyra föräldrar och en assistent intervjuades. Materialet analyserades med hjälp av kvalitativ innehållsanalys.

Resultat: Ridterapi upplevdes som en chans för de autistiska barnen att ha roligt och uppleva saker som annars var utom räckhåll för dem. Informanterna upplevde att barnen utvecklades fysiskt, socialt och psykologiskt. Resultaten belyser även några aspekter av terapin som informanterna upplevde som nödvändiga för att skapa en lyckad ridterapisession. Kostnaden och tillgängligheten diskuterades också.

Konklusion: Studiens resultat visar att ridterapi kan ge flera olika terapeutiska vinster för barn med autismspektrumstörningar.

Nyckelord: autismspektrumstörning, innehållsanalys, intervju, kvalitativ, ridterapi.

Hästar motiverar autistiska barn till träning

Barn och ungdomar med autism tycker att ridterapi är roligt; terapin utvecklas därför för många till en hobby och därmed tränar barnen utan att tänka på att det är träning.

En autismspektrumstörning innebär nedsättningar i sociala förmågor, kommunikation och fantasi. Detta innebär att barn och ungdomar med autismspektrumstörningar ofta har svårt med ömsesidig kontakt, att samtala med andra och att de är begränsade i sina intressen, lekar och i sitt beteende. Ofta finns också en motorisk påverkan. Speciella insatser blir därför ofta nödvändiga, det kan dock vara svårt att motivera autistiska barn till att delta i träning och behandling.

I en studie utförd vid Karolinska Institutet intervjuades föräldrar och assistenter till barn med autismspektrumstörningar om sina upplevelser av ridterapi som behandlingsmetod. Det framkom att en av de viktigaste aspekterna med ridterapi var att det blev ett tillfälle för barnen att ha roligt och få göra något som de faktiskt tyckte om. De föräldrar som följde med sitt barn till ridterapi uppfattade det som värdefullt att få chansen att göra något roligt tillsammans med sitt barn. – jag tror att det spelar fruktansvärt stor roll att hitta nåt som är positivt att göra tillsammans, säger en av mammorna.

Ridterapi blev också ett sätt att få uppleva saker som annars var utom räckhåll för barnen. Att få komma ut i naturen och få visuell, sensorisk såväl som emotionell och



'Livet var lite grann smått ... det är ett sånt lyft att få komma ut.'

social stimulans är viktigt för att upprätthålla en god livskvalitet.

Samtliga intervjupersoner hade också upplevt förbättringar i barnens förmågor; bland de fysiska förmågor som nämndes fanns förbättringar i motorik, gång, hållning och balans. Barnens motivation, kommunikation och sociala förmågor hade också förbättrats enligt föräldrar och assistenter. Föräldrarna uttryckte att ridterapi var en behandlingsform som fungerade när konventionella behandlingar inte gjorde det, då barnen saknade motivation för dessa. Genom nyvunna förmågor öppnade sig även nya möjligheter. – Hon har ju blivit så himla mycket bättre och duktigare motoriskt. I och med att hon har blivit det så har man också kunnat göra nya saker och nya utmaningar, berättar en av föräldrarna som deltog i studien.

Ridterapi erbjuds av vissa habiliteringscenter men platserna är begränsade; de flesta platser idag går till barn med rent motoriska problem, få platser går till barn med autismspektrumstörningar. Betalar man privat är ridterapi dyrt och för många är det inte ekonomiskt möjligt att betala själva. Föräldrarna uttryckte också önskemål om att göra ridterapi som behandling mer tillgängligt för barn med dessa typer av problem.

Yrsa Weber och Kim Westmoquette

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1. BACKGROUND

1.1. Autism Spectrum Disorders

Autism Spectrum Disorders (ASD) is a group of developmental disorders characterized by impairments in communication, social interaction, imagination and motivation. This means that individuals with ASD often have problems with reciprocal contact with other people and that they are limited in their interests, play and behavior. Deficits in gross and fine motor skill functioning are also common, these include abnormalities in gait and posture, often characterised by clumsiness and an immaturity in movement patterns. Stereotyped movements such as finger flicking, head rolling, rocking while standing up, and flapping of arms and hands, are also common. Individuals with ASD also often have difficulties in imitating movements, which is an important part of normal development of social behaviour and motor skills; clinical signs are usually present by the age of 3. (Wing, 2002; Levy et al. 2009)

ASD is a "spectrum disorder" meaning that it affects individuals differently and to varying degrees. Disorders within the autistic spectrum include Kanner's syndrome, Asperger's syndrome, atypical autism/other pervasive developmental disorder and childhood disintegrative disorder. (Wing, 2002; Levy et al. 2009) Defining specific sub-groups of autistic spectrum disorders is difficult due to the considerable overlap among the syndromes. (Wing, 2002) According to previous research, prevalence of ASD in children in Sweden and Norway is between 1.21-2.7% (Kadesjo et al. 1999; Posserud et al. 2006). There are a wide variety of treatment strategies available for children with ASD including behavioural or relationship interventions, interventions based on diets and supplements or on medicines and drugs, physical or alternative therapies are but to name a few (Levi et al. 2009). There is however no consensus as to which treatment is most effective (Lord et al. 2001).

1.2. Animal-assisted therapy for treating children with ASD

Previous research has indicated that integrating animals into therapy can be beneficial when treating children with ASD. Impairments in motivation and attention are common traits in children with autism. (Wing, 2005) Furthermore, children or the mentally disabled may not always understand the purpose of training and therefore lack the motivation for conventional forms of therapy. Previous research suggests that children with autism respond positively to the presence of animals and that there is a natural tendency for the children to be interested in and to interact with animals (Sams 2006; Martin & Farnum, 2002; Redefers & Goodman, 1989). Incorporating animals in therapy could encourage children with autism to become active partners in their therapeutic processes and might thus be beneficial for motivating the child (Koegel et al. 2003). The recreational nature of riding may also reduce any negative connotations towards therapy as the child feels they are having fun (Scott, 2005). Furthermore, animal-assisted therapy has been found to decrease stereotypical behaviors and self-absorption as well as a significantly increase social behavior in autistic children (Redefers & Goodman, 1989). In another study, children with an ASD exhibited a more playful mood and were more focused and aware of their social environments when in the presence of a therapy dog (Martin & Farnum, 2002). Children with autism have also been found to demonstrate significantly greater use of language and significantly greater social interaction in occupational therapy sessions incorporating animals when compared to sessions using standard occupational therapy techniques. It has also been discussed that using animals in therapy for children with ASD might help to teach the children to interpret and respond to the simpler social and behavioral cues of animals, which would then provide a stepping stone in learning to interpret the more complex

behavior of humans. (Sams, 2006) Equine-assisted Therapy is an animal-assisted therapy and stimulates many areas of functioning. It may therefore be particularly applicable for children with disorders that present a combination of motor, cognitive, and social disabilities (Pauw 2000).

1.3. Equine-assisted therapy

‘Equine-assisted therapy’ can be described as treatment with the help of a horse, today it is used within the realms of psychotherapy, speech or physical therapy. The therapeutic benefits of horseback riding were recognised some 400 years B.C by the Greek physician Hippocrates, he noticed that it was muscle strengthening and promoted cardiovascular fitness (Scott, 2005; Von Arbin, 1994). Horseback riding was recommended for establishing and maintaining health during the 16th century, and it was noticed that it not only promoted physical health, but also positively affected the mind (Von Arbin, 1994). Riding captured the attention of medical professionals in 1952 when a rider with Post Polio Syndrome won the Olympic Silver Medal in dressage in competition with the able-bodied. This accomplishment and is generally considered to be the origin of riding within the context of modern physical therapy. (Scott, 2005)

Three commonly used terms within the field of physical therapy are; 1) ‘Hippotherapy’¹, usually referring to physiotherapeutic treatment using the horse’s movement as a tool to manipulate the movements of the patient and hereby improving neuromuscular function. 2) ‘Horseback Riding Therapy’ usually refers to the riding itself being used as a habilitation or rehabilitation method, usually administrated by a physiotherapist or other rehabilitation professional. Treatment goals can be to improve physical, psychological and/or social health. 3) ‘Riding for the Disabled’ or ‘Recreational Riding’ is the third category whereby the disabled person is led sitting on a horse or riding independently, with the objective of promoting quality of life through physical and emotional stimulation, or with the goal of learning how to ride. (Von Arbin, 1994; Scott, 2005) Within this study the term ‘equine-assisted therapy’ (EAT) will be used as an umbrella term for all therapeutic interventions assisted with the use of a horse.

The horse is a unique tool in physiotherapy; the three-dimensional movements transmitted from the horse’s back produce trunk movements in the rider that simulate those of human gait. The movements have been found to be far more complex than just a side-to-side rocking and require an increased demand on the rider’s postural responses. (MacPhail et al. 1998) Co-ordination and balance reactions are thus improved as the rider is challenged to adapt to this continuous flow of unpredictable movements. Ascending nerve pathways are stimulated due to the rich sensory and proprioceptive input that the movements and warmth of the horse’s back provides. In addition, the rider also has access to a sitting position whereby the back and pelvis hold the same position as in standing, with a lumbar lordosis and a neutral position of the pelvis. (Von Arbin, 1994)

Living with a disability often means that the range of experiences and activities that are available or possible to participate in are limited; this can lead to a decreased quality of life. EAT offers much more than just functional training: working in the stables, grooming the horse, and learning to tack up are just a few of the tasks that can be involved. Furthermore riders have the opportunity to socialise with instructors and fellow-riders in a stimulating environment as well as developing a relationship

¹ Greek Hippos = horse

with the horses. These different features of EAT will offer the opportunity to train gross and fine motor skills, concentration, perception and social skills. (Scott, 2005; Von Arbin, 1994)

1.4. Previous research regarding EAT

There is much clinical experience regarding the benefits of EAT, but despite the increasing demand for evidence-based treatment methods (SBU), there is still a scarcity of research to support it. According to database searches carried out by the authors, research investigating the effects of EAT has mainly focused on the physical functional outcomes in patients with neurological disabilities such as cerebral palsy (CP), multiple sclerosis (MS) and spinal cord injuries.

Lechner et al. (2003, 2007) found that one of the short term effects of EAT was reduced spasticity in the lower extremities of children with CP and in adults with spinal cord injuries. In other studies of EAT, researchers found improved gross motor function (Snider et al. 2007; McGibbon et al. 2009), as well as improved head and trunk stability and posture among children with CP (Shurtleff et al. 2009; MacKinnon et al. 1995a; Land et al. 2001). Hammer et al. (2005) and MacPhail et al. (1998) found improvements in balance and equilibrium reactions, as a result of treatment with EAT, in children with CP and adults with MS. Some improvements were also seen in pain, muscle tension and activities of daily living in adults with MS (Hammer et al. 2005). Numerous studies have indicated positive effects of EAT in psychosocial areas; in a review of studies, MacKinnon et al. (1995b) found that EAT may positively affect attention span, spatial awareness, concentration, listening skills, interest in learning and verbal skills in people with various disabilities. It was also found that EAT may facilitate the development of relationships between rider and horse, rider and therapist, and rider and other riders. These relationships may promote the improvement of the riders' social skills. (MacKinnon et al. 1995b)

There is a general lack of research regarding EAT as a treatment method for patients with other types of disabilities including ASDs. After conducting searches in Cinahl, PubMed and PEDro databases, only one article was found regarding EAT as a treatment method for patients with ASD. This was a randomized controlled trial with 34 children who participated in a 12-week intervention. The study concluded that autistic children exposed to EAT exhibited increased sensory seeking, sensitivity and social motivation. The children in the intervention group also displayed less inattention, distractibility and sedentary behaviours than those in the control group. (Bass et al. 2009) However one of the problems experienced in research regarding EAT, according to Pauw (2000), is "the discrepancy between the results from the statistical tests and the qualitative results from parents, riders and health professionals". Experiences seem to vouch for EAT as a beneficial treatment method, yet much previous quantitative research has failed to measure significant results (Pauw 2000). To describe the treatment effects of EAT as experienced by parents and caregivers of children with ASD participating in EAT was therefore considered to be an interesting means of approaching the subject.

2. PURPOSE

To explore and describe how EAT as a treatment method for children with ASD is experienced by their parents and caregivers.

3. MATERIAL & METHOD

3.1. Theoretical perspective

A qualitative approach will be applied in this study. Qualitative research methods are used to describe, analyse and understand a certain phenomenon or experiences thereof, they can also open up areas for research where current knowledge is lacking (Malterud, 2009).

3.2. Recruitment

Interviewees were recruited according to 'purposeful sampling'. This method was chosen with the purpose of recruiting interviewees with a wide range of experiences in order to reflect a larger group. Within this sampling method interviewees were selected by 'opportunistic sampling', which involves following new leads during fieldwork and taking advantage of opportunities as they present themselves. (Carpenter, 2008)

Seven centres in the Stockholm area that offered EAT were contacted. Enquiries were made as to whether the centres had patients (children) who fitted into the study's criteria. The inclusion criteria for the children were that they were aged from 6 to 20 years, had a diagnosis within the autism spectrum and had taken part in 6 or more EAT sessions. The centres with children who matched this study's criteria were identified as: Ridterapi Novalis, Stockholm's Ridterapicenter, Nacka Habilitation Centre and Lunk i Kring Ridförening. Parents or caregivers of the children in question were then recruited for interviewing. Potential interviewees were contacted by the physiotherapist at the centre and given an information letter (attachment 1). Seven interviewees expressed an interest in participating in this study; their details were forwarded to the authors who then contacted them by telephone or email. All identified interviewees fitted this study's inclusion criteria as someone who spends a significant amount of time with the rider per week and has known the patient at least 3 months before treatment with EAT. Of those interested, five were interviewed, two cancelled due to personal reasons.

3.3. Interviewees

The age of the interviewees ranged between 43-55, within the group there were mothers, fathers and an assistant. The interviewees had different preconceived ideas about EAT, some were positive and some were negative before starting EAT. They also had different previous experiences of horses; some with no experience at all and one was scared of horses. None of the interviewees had any personal experience of horseback riding. Among the interviewees some had often attended the EAT sessions whilst others only accompanied their child on rare occasions; all interviewees had attended at least one EAT session. The interviewees were all educated to a higher level although within different subjects.

3.4. Children

Children were aged between 6-19 years. Within the group there were males and females with a range of diagnoses and severity of symptoms within the autistic spectrum, some had additional diagnoses such as mental retardation and epilepsy. All of the children, although to varying degrees, had the ability to walk. One of the children used a wheelchair as his main means of transportation. The children had different speech capabilities, some had no speech or verbal understanding, whereas others could understand and express themselves verbally. However, all of the children had some form of communication difficulty due to their diagnosis. Children within the group had different amounts of experience of EAT, from 12 sessions up to 70, ranging over different time spans from 3 months to 6 years. The children had different previous experiences of animals before

starting with EAT. Living situations also varied, the children's family nucleus ranged from small to larger families or living in a care home during the week.

3.5. Data collection

Between 24th January and 2nd March 2010 five semi-structured interviews were carried out. The author Y.W. carried out three interviews; the author K.W was present at two of these. The author K.W. carried out two interviews; the author Y.W was present at one of these. The interviews were carried out in Swedish. One test interview was carried out with the purpose of gaining experience of an interview situation as well as to develop the interview guide. As the test interview fulfilled the criteria for this study it was also included in the data material. The interviews were carried out at a place chosen by the interviewees; two took place in the homes of the interviewees, two at cafés and one at the interviewee's workplace. Interviews varied in length from approximately 20 to 40 minutes and were recorded with a dictaphone.

The interviewees filled in a fact sheet (attachment 3) to give background information about themselves and the child in question, as well as contact details so that the final report could be sent to them. Only information that the authors considered relevant in order to describe the interviewees/children was used in this study.

Creating a rapport with the interviewee is important as it allows the person in question to feel comfortable to talk freely about feelings and experiences with a stranger (Kvale, 2009). Therefore the opening question in the interview was "Would you like to describe your child so that I can gain a picture of him/her", this also provided valuable background information. The next open question steered the interview toward its purpose and was "What do you think about EAT as a treatment for your child?" The interview guide formed a basis for the interview but the exact form of the questions was flexible depending on the individual conversation as suggested by Kvale (2009). Follow-up questions were asked to ensure that the questions were fully investigated and the interviewer summarised what had been said from time to time to ensure that the meaning was understood. See attachment 4 for the full interview guide.

3.6. Data analysis

Content Analysis was chosen to explore the variation of experiences amongst parents of children with ASD participating in EAT (Graneheim et al. 2004); this analysis method allows interesting information to be explored with the least loss of facts from the original material (Bogdan, 1984).

The five interviews, which were conducted and transcribed in Swedish, formed the 'units of analysis' in this study. The analysis began by reading through the interviews to gain an overview of the material. Meaning-units were then extracted; these units were words, sentences or paragraphs of text that concern the interviewees' experiences of EAT as a treatment method for children with ASD. The units were then condensed to a shorter form, after which they were coded. The meaning units and condensed meaning units remained in Swedish during this process, the codes themselves were then written in English. Of the two authors one has the mother tongue of English, the other Swedish. Both authors, to ensure that the essence of the meaning had not been lost in translation, checked the codes. An example of the coding process is shown below:

Meaning unit	Condensed meaning unit	Code	
Vi gör så mycket annat med henne ändå så det känns kul att hon får göra en sån aktivitet mitt på dagen.	Vi gör mycket med barnet, det känns kul att barnet få göra en sån aktivitet utan oss.	Parents think its good that child does EAT as her own activity without them	C15
<i>Intervjuare:</i> vad tycker ni om ridterapi.. i allmänhet och för ert barn? <i>Informant:</i> bra.. jag har väl inget.. bara bra saker att säga om det.	Jag har bara bra saker att säga om Ridterapi.	Parent thinks EAT is good	C16
sen vet vi ju inte vilken utveckling hon hade haft utan ridning, så vi har inget att jämföra med,	Jag vet inte vilken utveckling barnet skulle ha haft utan ridningen, vi har inget att jämföra med.	Parent doesn't know what development child would have had without EAT.	C17

Table 1: Excerpt from the coding process.

The coded material was arranged in categories and sub-categories that were then presented in themes to understand the content of the interviews. This method was suggested by Graneheim et al. (2004) and Malterud (2009).

3.7. Ethical aspects

Written information about the study's background and purpose was given in advance to the potential interviewees (attachment 1). This information included how the interview process would be carried out and stated that participation is voluntary; that whether choosing to participate or not, the future treatment of their child would not be affected. It was also stated that information would be treated confidentially and that the interviewee has the right, at any time, to discontinue. Only after the potential interviewee had expressed the wish to participate and approved of their contact details being forwarded to the authors was this information disclosed by the EAT centre. Before being interviewed, interviewees were required to sign an informed consent that included a copy of the written information that had been distributed earlier (attachment 2).

In the interview situation the consequences for the interviewees needs to be taken into account (Kvale, 2009). It was considered that interview subject in this study was relatively neutral and therefore did not pose a large risk for emotional stress. The interview does however investigate individuals' personal lives and asking parents to talk about their disabled children could bring emotions to the surface; this was kept in mind during interviewing.

When transcribing, the confidentiality of the interviewees and the children was ensured by coding the material and excluding names. The recorded and written material was stored in a safe way. To ensure that the transcription remained loyal to the interviewees' oral statements it was noted when there was laughter, tears and/or any particular emphases so as not to lose meaning. The issue of confidentiality was also taken into consideration when reporting results (Kvale, 2009).

4. RESULTS

The analysis of the material resulted in the identification of four categories, two of these categories deal with experiences of the therapeutic aspects of EAT on a physical, psychological and social level. The other two deal with experiences regarding the more practical aspects of EAT; the building blocks of the session itself. Each category is thoroughly described and illustrated with excerpts from the original interview. Excerpts from the interviews are indicated with quotation marks, indented and written in italic text. It is stated within parenthesis after each excerpt from which interview it has been taken. Abbreviations and symbols within excerpts are as follows: (...) = removed text, (word) = clarification of text.

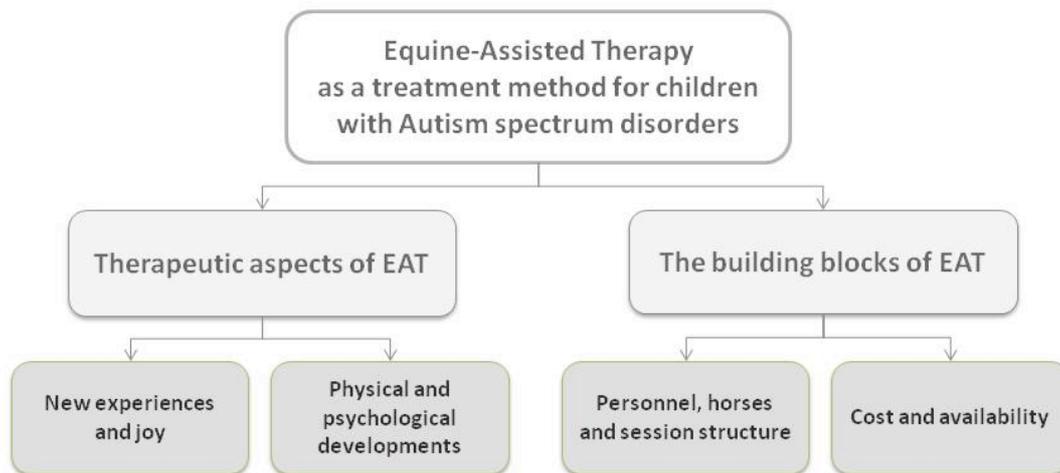


Figure 1: Interviewees experiences of EAT for children with ASD illustrated with themes and categories.

4.1. Therapeutic aspects of EAT

The following two categories describe parents' and caregivers' experiences of the therapeutic aspects of EAT.

4.1.1. New experiences and joy

It was discovered that the interviewees believed the children enjoyed EAT. It was expressed that being with the horses was a positive experience and above all that it was fun. Interviewees described that EAT had become a hobby and also that it gave the child the feeling of a daytrip or an excursion. EAT is a form of physical exercise and was considered by the interviewees to train many things simultaneously and give the child "a proper workout". Since the therapy form is enjoyable the interviewees believed the child trained without it feeling like it was a specific training or physiotherapy session. The child's improved riding-skills were also mentioned which interviewees felt contributed to the fact that riding was a rewarding activity.

"She has become a 'horsy girl'. She often talks about horses and has her own riding trousers and helmet (...) it (EAT) has become a hobby (...) It is a fun day in the week, it becomes like an excursion and she thinks it's really fun (...) so if it is something one enjoys, then it is playful, a fun way of training." (C)

Interviewees expressed that they felt that EAT was important for their child's wellbeing. One interviewee felt that the fact that the child enjoyed EAT was the most important thing and that possible treatment effects were less important. The interviewees believed that the children had become generally happier since starting EAT.

"Regardless of what EAT has accomplished, he thinks it's really fun and that would have actually been enough. Because he gets to do something that he really wants to do and enjoys (...) He feels like he is safe in some way (...) and he feels good with the horse." (B)

Interviewees talked about the fact that it was difficult to find activities that interested the child. EAT however, was something that had won the interest of these children. What interested the child seemed to be the riding itself as it was described that most of the children were not interested in stroking or feeding the horse.

"She doesn't cuddle the horses in the same way as the riding instructors do (...) she doesn't think that's so much fun, she just wants to ride, that's the thing for her." (E)

It was described that the children were able to experience things during the EAT sessions that were otherwise out of reach for them in their everyday life. It was described how the everyday life of the children was quite limited, often consisting of only a few standard components such as spending time in school and being at home. In this context, EAT was perceived as a way for the child gain new experiences. Interviewees talked about the child's experience of independence, both during as well as traveling to and from the session. Interviewees considered EAT to be an emotional and proud experience for the child.

"It is such a gain for her to get to come out. It (her life) is a little bit small, she's at home, she goes for her walks on the weekends (...) she sits in her room and she watches movies. And then I feel that she gets to come out and do something more than just sit at home or be in school (...) She's very concentrated when she rides and she looks very proud (...) I wave and then, a little bit embarrassed but a little bit proud she waves back and you can see that she grows as a person when she's sitting on the horse (...) and she feels proud and I believe she grows within." (E)

Parents felt that EAT was an opportunity to share an experience together, this was considered to be important and meaningful and described to positively affect the relationship and communication between the parent and the child; it was something "to talk about without having to talk about yourself". The experiences that the parents themselves gained from EAT and how it affected the rest of the family in a positive way was also described. They talked about feelings of being moved and happy for their child, as well as their own feelings of enjoying the EAT sessions.

"It is so much fun, to get to do something so very positive together. Of course that affects me most of all, I would say, in my relationship with my child (...) I think it makes a huge difference to find something that is so positive to do together." (B)

4.1.2. Physical and psychological developments

Interviewees described many physical and psychological developments they had seen in their child since starting EAT. Interviewees described developments in activities in daily living, such as being able to drink from a cup independently. Improvements were also seen in motor skills, walking, balance and posture. Interviewees discussed the importance of the child having good motor skills and the benefits of the child being able to walk and do things by themselves. It was described how this decreased the need for special help, aids and equipment. These developments made life easier and opened up new possibilities such as participating in other new activities.

"I clearly noticed that he could slow down on his own when walking downhill, because we have always had to help him slow down if he's walking, and things like he can straighten up his body and in different ways control, yes, master his motor skills (...) I feel it is so important to have motor skills. Just something like getting in the car, what a difference it makes in life, if you have to have special equipment to get in, then you have to have a special car (...) things like that can also become a burden for others. And of course you have more fun in life if you can manage things on your own, and don't have someone else doing it for you. So because of that motor skills are crucial." (B)

Positive developments were seen in verbal communication as well as a greater understanding of non-verbal communication. The interviewees considered EAT to be a beneficial place for the child to train and develop communication skills and social stimulation, the horse being an important part in that stimulation.

"I believe that this wordless communication that he has with the horse (...) is fantastic. Because these children (with ASD) have a different way of communicating (...) I think it is very comfortable for them to not have to cope with the difficult social interplay; there're so many different aspects –you have to have eye contact, you have to figure out what to say, you have to listen. Here there's a communication that is direct. (...) I think that EAT (...) has helped him to communicate much better. He can hold a conversation. There's a tremendous difference in him, you couldn't talk to him at all before." (D)

Presence and awareness was seen to have improved in the children, one parent described EAT as being the key in helping the child to "come out of his bubble". Children were described as exhibiting a greater interest in their surroundings and having an improved understanding of what was going on around them. They were also noticed to have developed a greater interest for other people.

"He has a much greater interest in other people. Even those he doesn't know, he can seek contact and in different ways touch them, look them in the eyes and be happy. But the difference from before is that he didn't at all take in other people the same way." (B)

Interviewees had experienced developments in self-confidence and motivation levels in the children. This was mentioned in the context of the child daring to try new things, for example having the confidence to sleep on their own or to walk independently. They described that the child experienced a feeling of success in their improved riding skills that led to an improved self-confidence. It was also believed that EAT helped the child "grow as a person".

"I am entirely convinced that it is these animals that have helped him (...) this is the key to his confidence in daring to do things (...) after maybe 6 months he dared to canter and he has also dared to trot on his own. So it (EAT) has helped him a lot with his fears." (D)

It was also described that the child's fears and phobias of things such as other children and dogs had decreased; one child even exhibited less over-sensitivity to sounds. Interviewees described that the improvements in their child made life easier and opened up for new possibilities in life, the improvements also contributed to the possibility of living a more normal life.

The interviewees recognized that EAT was an important part of the child's development but felt it was difficult to know to what extent EAT was responsible for these changes. There are so many other factors that can affect a child such as natural development or other therapy forms they are receiving as the same time.

"It is difficult to say how much EAT has done. It has been a part of her development and it has been important for her and her wellbeing (...). But on the other hand how much it has helped her, if you say psychologically or physically, I think that's difficult to quantify, but it (EAT) has been beneficial." (E)

4.2. The building blocks of EAT

The following two categories describe parents' and caregivers' experiences of features they believed to be good or necessary in the EAT session, as well as experiences regarding cost and availability.

4.2.1. Personnel, horses and sessions structure

It was discovered that the interviewees did not believe that it was merely a horse that made EAT a good form of therapy. It was believed that the same quality of treatment could not be achieved by putting the child on just any horse, anywhere. Specific qualities in the therapist and the horses were described to be important. Interviewees described the therapist as knowledgeable and well educated, the personality and motivation of the therapist was especially considered to be important. It was also considered to be important for the child that the therapist was encouraging and acknowledged the child's successes. The horses were described to be well educated, well mannered and calm and this was believed this to be a contributing factor to the quality of the EAT session. The interviewees discussed that the horses and animals in general were important as therapeutic tools, they believed that exposure to animals was good for the children.

"I don't think that it's the horse that makes the whole difference, of course it is part of it, but 75% of the thing is the therapist who is motivating (...) You can't just take a horse and put the child on it and just walk around a bit."
(A)

One interviewee explained that children with ASD often have the need to repeat things in exactly the same way to be comfortable with a certain activity, so stability in session format and personnel was considered to be important in order for the child to feel safe.

"It has been a strength to be able to do the same things and feel secure with the horses and personnel." (E)

4.2.2. Cost and availability

A range of experiences was expressed regarding the cost of EAT. Some children received EAT free through the National Health Service² whereas others considered that they had not got any help from the society regarding advice or funding of therapy for their child. Some parents paid for the EAT privately and regarded it to be expensive. One parent reasoned that since it was a hobby for the child it was similar to other children with other expensive hobbies.

"It is like an expensive hobby, you could say, had he been like other children then he would have had expenses for hockey or whatever, which also costs a lot." (B)

The wish for increased availability of EAT was expressed by the interviewees. Experiences of a lack of availability of EAT included one parent who travelled to the other side of town to take his child to EAT. They had not found any EAT available closer to their home; all the spaces at the centres closer to them were full. One child who had received EAT from the National Health Service² had completed the allocated number of sessions. The parents were happy to have their child on the reserve list and hoping for their child to be able to continue EAT. It came across that the interviewees believed EAT should be more recognized as a treatment method so that the possibility for their child and others to ride could increase; it was also expressed that they wanted their child to be able to continue participating in EAT.

"EAT was a stroke of luck. There should be more (EAT centres), I think that would be really good." (E)

² Swedish: Landstinget

5. DISCUSSION

5.1. Result discussion

The results identified four categories; two of these categories dealt with experiences of the therapeutic aspects of EAT. Interviewees described EAT as a way for the child to gain new experiences and enjoyment, as well as a way for the child to develop physically and psychologically. The other two categories dealt with experiences regarding the more practical aspects of EAT; the building blocks of the session itself. Interviewees described features they believed to be good or necessary to create a successful EAT session, these included experiences regarding personnel, horses and the session structure. The cost and availability of EAT was also discussed.

One of the most interesting parts of the results according to the authors, were the descriptions of “*new experiences and joy*” that were made available for the children through the EAT sessions. EAT was seen as a chance for children with ASD to have fun and experience things that were otherwise out of reach for them. Previous literature has suggested that the recreational nature of riding might reduce negative connotations towards therapy that children might have (Scott, 2005), but the authors did not expect this to come across so strongly in the present study, especially since this was not the focus of the interview guide. The findings of this study are consistent with, and strengthen the results of previous research that have shown that animal-assisted therapy motivates children to become active partners in the therapy session (Koegel et al. 2003).

The authors believe that these new experiences and feelings of enjoyment enhance aspects of quality of life for children with ASD. The authors were positively surprised to find that EAT not only seemed to enhance the quality of life of the children but also of the parents. Previous research has shown that the quality of life in families with children diagnosed with an ASD is lower than that of unaffected controls (Lee et al. 2008) so the fact that EAT may have an influence in these areas is exciting. Having the opportunity to share the experience of EAT together was perceived to enhance the parent-child relationship. A better parent-child relationship has been seen to ease symptoms such as repetitive behaviours in children with ASD as well as improve communication skills, this, in turn has been associated with reduced parenting stress. (Ghanizadeh et al. 2009) There is research pertaining to the general increased stress-levels and decreased psychological wellbeing in parents of children with ASD (Estes et al. 2009), therefore the authors wonder if EAT can be developed in the future to actively integrate parents in the treatment process.

The interviewees described many “*physical and psychological developments*” in their child since starting EAT. The results of this study indicate that there might be a wide range of therapeutic benefits for children with an ASD. The children in this study participated in EAT as a physiotherapeutic intervention; these usually have physical and/or psychological goals of improvement. As mentioned earlier, previous quantitative research has had difficulties in measuring the effects of EAT (Pauw, 2000). The interviewees expressed that they could not be sure as to what extent the developments in the child were due to EAT since there are so many other factors that influence the child. The authors believe this to shed light on why it has been difficult for previous research to measure the effects of EAT. MacKinnon et al (1995b), in a review of literature, found that many quantitative studies of EAT lacked an optimal research design or control group. Further quantitative research must therefore take this into consideration. Research designs need control groups and all efforts need to be made to eliminate confounders.

Previous studies have shown improvements in motor skills, balance and posture in children with other types of disabilities who participate in EAT (McGibbon et al. 2009; Shurtleff et al. 2009; Hammer et al. 2005), the results from this study suggest that children with ASD can gain similar effects. This study described improvements in communication and in presence and awareness in the children with ASD. This is also consistent with previous research of EAT as a treatment method for children with other types of disabilities (MacKinnon et al. 1995b). Animal-assisted therapy has also previously been seen to affect communication and presence and awareness in children with ASD (Sams 2006, Redefers & Goodman, 1989; Martin & Farnum, 2002). Unique to this study is that interviewees described that the children's self-confidence had improved, which the authors considered to be an interesting find.

A lack of motivation is a common trait of children with ASD (Wing, 2005). The interviewees of this study experienced improvements in motivation in their child. This is consistent with previous research that has shown improvements in motivation when incorporating animals in therapy for children with ASD (Sams, 2006; Redefers, 1989). Motivating a child with ASD to participate in therapy is sometimes difficult; how to improve motivation in children with these types of disabilities has been the focus of previous research (Koegel et al. 2003; 2005). The interviewees in the current study felt that EAT worked for these children when conventional forms of therapy did not. EAT captured the child's interest and above all, it was a source of enjoyment. The authors believe this to be a key in motivating children with ASD to actively participate in therapy. Since EAT seems to be successful in motivating children with ASD to participate in therapy further research regarding levels of willing compliance and motivation for EAT, compared with other therapies might be interesting.

The results point out some features regarding "*personnel, horses and session structure*" that interviewees believed to be good or necessary in the EAT session. The authors believe that these can be of particular interest for therapists in order for them to gain a greater understanding of what is considered to be important by parents or caregivers. These features included being well educated, having the right horses and acknowledging the child's successes. The importance of a stable session structure for children with ASD may also be of particular interest.

At present EAT is offered only at some habilitation centres in Stockholm and spaces are very limited. EAT is usually recommended as a physical intervention and for that reason often only offered to children with purely physical disabilities, hence not often available for children with ASD. There are a few private EAT centres in Stockholm but the costs are high; in the region of 800 Swedish kronor (approx. 75 British pounds) per hour. This situation was reflected in the descriptions in "*cost and availability*" where availability was considered to be lacking and the private costs high.

5.2. Method discussion and trustworthiness

The authors believe that the qualitative approach that was chosen has supported the possibility to investigate the purpose of the study.

Communication is typically difficult for children with ASD (Wing, 2002; Levy et al. 2009) and due to the ethical issues of including children in a study the children themselves could not be interviewed. It was considered that a person who spends a significant amount of time with the child per week and had known the child at least three months prior to the start of treatment with EAT

would be suitable for interviewing. Interviewees were selected via four different EAT centres so that the range of experiences would be as varied as possible. Interviewees varied in gender and social situation, the group was however quite homogenous with respect to age and education levels. The interviewees had different preconceived ideas about EAT as well as different previous experiences of horses. Among the interviewees some had often attended the EAT sessions whilst others only accompanied their child on rare occasions; all interviewees had attended at least one EAT session. These differences provided an opportunity to gain a wider range of experiences.

The children in question varied in gender, age, diagnosis and severity of symptoms. The children took part in EAT at different centres with different therapists and session structures; there was experiences from hippotherapy, horseback riding therapy and disabled riding (see 1.2. for definitions) represented amongst the interviewees. One of the inclusion criteria for this study was that the child in question had attended 6 or more EAT sessions, this meant that there were no interviewees with the experience of a child who may have tried EAT once and not had a good experience. A richer variation in material might have been achieved if interviewees who's children were not currently participating in EAT, had also been included. In accordance with the protocol for undergraduate dissertation only five interviewees were recruited, consequently saturation in the material (Carpenter, 2008) could not be reached.

Semi-structured interviews were considered to be suitable for the study's purpose and have lead to relevant and interesting results. The interview guide focused on the experienced positive and negative changes seen in the child since starting EAT, despite this focus, new lines of enquiry opened up during interviewing that lead to a richer range of experiences being described than expected.

The authors took turns in the carrying out the interviews and it varied as to whether both authors were present at the interview, which came about partly due to practical reasons. The roll division allowed for both authors to develop their skills as an interviewer. The fact that each author conducted the interview in their own style and that interviewees can react differently when two interviewers are present could have affected the results of this study. After those interviews where both authors were present, it was discussed between authors what was considered to be of particular interest and feedback was given to the interviewer. In this way the interview guide developed verbally, the original interview guide however remained unchanged and continued to form the basis for the main focus of the interview. The interviews could have been more consistent if these new lines of questions were put in to writing and the interview guide had been updated.

A content analysis (Graneheim et al. 2004; Malterud, 2009) was chosen to analyse the interviews, the authors consider this to have worked well and interesting results have emerged. Both authors carried out the analysis of the material. The sorting of the codes into categories and themes was discussed and agreed upon by both authors. The authors had a good knowledge of both the interviews and the coding procedure; original transcripts were consulted when there was uncertainty in the underlying meaning of a code. The authors were aware that they had preconceived ideas regarding EAT; both had previous positive experiences of horseback riding. To secure the study's trustworthiness the authors took the time during categorisation and creating themes to discuss how their own preconceptions were affecting this process. Every effort was made to avoid these preconceptions from influencing the study and to present the results without bias.

Since the study was based in Sweden, the language of the interviews was Swedish. The extraction and condensation of meaning units was carried out in Swedish, and then a decision was taken to write the codes in English so that the formation of categories and themes could be done in the language of the article. In translation there is always a risk of losing meaning, both authors therefore checked the codes, one of which has English as their mother tongue and the other Swedish. Checks were also made in the original material if uncertainty remained about the meaning. The same procedure was followed when citations from the original material were translated.

6. CONCLUSION

The results of this study indicate that EAT may have a wide range of therapeutic benefits for children with ASD; the authors believe that EAT is a unique form of therapy as it can influence so many areas of physical and psychological functioning. The fact that the children gain experiences that are usually out of their reach is an essential therapeutic benefit of EAT. The positive influence on aspects of quality of life for both children and parents is an important finding. Another important aspect of EAT seen in this study is that it succeeds to motivate children with ASD to actively participate in therapy. The authors believe that some very interesting new avenues for future research have been opened up.

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KAROLINSKA INSTITUTET
Institutionen NVS
Sektionen för sjukgymnastik

Attachment 1

Information om studie 'Ridterapi som behandlingsmetod för barn med autismspektrumstörningar.'

Terapeutisk ridning har använts under drygt ett halvt århundrade som behandlingsform för personer med en rad olika sorters funktionshinder. Aktuell forskning har visat att ridning förbättrar fysisk funktion såsom kroppshållning och gångförmåga och även ger positiva effekter på livskvalitet och sociala förmågor. Men vad är effekten av ridterapi som behandlingsform för barn med autismspektrumstörningar? För att öka kunskapen inom detta område genomförs nu en intervju-baserad, kvalitativ studie av två sjukgymnaststudenter vid Karolinska Institutet, i samarbete med ett antal ridterapiinriktade behandlingscentrum i Stockholmsområdet.

För att kunna genomföra denna studie, behöver vi komma i kontakt med föräldrar vars barn för närvarande deltar i hästunderstödd terapi. Deltagandet i studien kommer att innebära att vi vill intervjua dig angående dina upplevelser av eventuella förändringar hos ditt barn sedan hon eller han började med ridterapi. Den person vi vill intervjua kan även vara en vårdnadshavare, personlig assistent eller annan person med likvärdig insikt i barnets liv. Det är viktigt att den person vi intervjuar har känt barnet under en längre tid, även innan behandlingen med ridterapi inleddes.

Om du väljer att delta kommer vi överens om en tid och plats för intervjun, som passar dig. Intervjun kommer äga rum under januari-februari 2010, kommer att ta cirka 45-90 minuter och utföras av någon utav oss. Resultaten kommer att presenteras i juni 2010, och självklart kommer alla som deltar i studien att få ta del utav dessa.

Att delta i denna studie är helt frivilligt. Du kan, om du väljer att delta, när som helst avbryta din medverkan utan att ange skäl och utan att detta i så fall påverkar övrig behandling av ditt barn. Svaren kommer att behandlas konfidentiellt och ingen enskild individ kommer att kunna identifieras då resultaten presenteras.

Vi hoppas att Ni vill delta i vår studie!

Med vänlig hälsning,
Kim Westmoquette och Yrsa Weber

Kontakta någon utav oss eller er sjukgymnast om du önskar delta, eller om du har frågor angående studien.

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Attachment 2

Informerat samtycke till att delta i studien 'Ridterapi som behandlingsmetod för barn med autismspektrumstörningar.'

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Att delta i denna studie är helt frivilligt. Du kan när som helst avbryta din medverkan utan att ange skäl och utan att detta i så fall påverkar övrig behandling av ditt barn. Svaren kommer att behandlas konfidentiellt och ingen enskild individ kommer att kunna identifieras då resultaten presenteras.

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Informant:

Jag har tagit del av informationen, förstått syftet med studien samt vad medverkan innebär och samtycker till att delta i denna studie

Namnteckning

Namnförtydligande

Datum och



Attachment 3

Faktablad till deltagare i studien: 'Ridterapi som behandlingsmetod för barn med autismspektrumstörningar.'

Om dig:

Namn _____ Tel. nr. _____
E-mail adress _____ Ålder _____

Relation till barnet _____ Kön _____
Arbete _____ Utbildning _____

Om ditt barn:

Namn _____ Ålder _____
Diagnos _____ Kön _____
Tidigare erfarenhet av djur/ridning _____

Hur länge har ditt barn behandlats med ridterapi?

Första tillfället (datum): _____ Senaste tillfället (datum): _____

Totalt antal tillfällen: _____ Ev. uppehåll: _____

Övriga kommentarer: _____

Familjmedlemmar – vem bor hemma med barnet? _____

Obs: All information behandlas konfidentiellt.



Attachment 4

Intervjuguide

Skulle du vilja beskriva ditt barn så att jag kan få en bild av honom/henne?

- Problem och resurser.

Please describe your child for me to get a picture of what he/she is like?

- *Problems and resources*

Vad tycker du om ridterapi som behandlingsform för ditt barn?

What do you think of Equine-Assisted Therapy as a treatment method for your child?

Hur kom det sig att barnet började rida?

How did your child come to participate in Equine-Assisted Therapy?

Har du närvarat eller brukar du närvara då barnet rider? Kan du berätta om det för mig.

Have you been or do you usually accompany your child when he/she participates in Equine-Assisted Therapy? Please tell me about that.

Har ditt barn på något sätt förändrats av ridterapin? Positivt och/eller negativt?

Has your child changed or developed in any way due to the Equine-Assisted Therapy?

- Fysiskt
Physically
- Kognitivt
Cognitively
- Socialt
Socially
- Emotionellt
Emotionally

Är det något annat du vill berätta för mig som inte har kommit fram under intervjun?

Is there something else that you want to tell me that we haven't talked about during the interview?



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Sektionen för sjukgymnastik



The therapy includes allowing the child time to relate to the horse. The physiotherapist helps the child to stroke the horse.



The physiotherapist helps the child to find a good sitting position on the horse's back.



Riding in the woods gives the child a wide range of experiences.



Exercises on the horseback trains social interaction between child and therapist while training balance and motor functions at the same time.