The Search for the Cure: Exploring the mystery behind the importance of animal therapy, music therapy, and weighted vests on children who have autism.

A Thesis Submitted to the University Honors Program In Partial Fulfillment of the Requirements of the Baccalaureate Degree With Upper Division Honors

Department of Allied Health and Human Sciences

By: Hailey Paver
DeKalb, Illinois
May 14, 2011
Always
Unique
Totally
Interesting
Sometimes
Mysterious
I built a bridge
out of nowhere, across nothingness
and wondered if there would be something on the other side.
I built a bridge
out of fog, across darkness
and hoped that there would be light on the other side.
I built a bridge out of helplessness, across chaos
and trusted that there would be strength on the other side.
I built a bridge
out of hell, across terror
and it was a good bridge, a strong bridge.
a beautiful bridge.
It was a bridge I built myself,
with only my hands for tools, my obstinacy for supports
my faith for spans, and my blood for rivets.
I built a bridge, and crossed it,
but there was no one there to meet me on the other side.

(Cesaroni and Garber 1991, 311-12)
Capstone Title: (print or type):

The Search for the Cure: Exploring the mystery behind the importance of animal therapy, music therapy, and weighted vests on children who have autism.

Student Name (print or type): Hailey Paver

Faculty Supervisor (print or type): Nancy Castle

Faculty Approval Signature: Nancy Castle

Department of (print or type): Allied Health & Optometry

Date of Approval (print or type): 5/1/2011
HONORS THESIS ABSTRACT
THESIS SUBMISSION FORM

AUTHOR: Hailey Raver

THESIS TITLE: The search for the cure: Exploring the mystery behind the importance of animal therapy, music therapy, and weighted vests on children who have autism.

ADVISOR: Nancy Castle

ADVISOR’S DEPARTMENT: Allied Health and Communicative Disorders

DISCIPLINE: Rehabilitation Counseling

YEAR: 2011

PAGE LENGTH: 25

BIBLIOGRAPHY: Yes / enclosed

ILLUSTRATED: No

PUBLISHED (YES OR NO):

LIST PUBLICATION: N/A

COPIES AVAILABLE (HARD COPY, MICROFILM, DISKETTE):

ABSTRACT (100-200 WORDS):
ABSTRACT

The number of people diagnosed with autism has been dramatically increasing over the last ten years. It is estimated that in the next decade there will be more than four million people on the autism spectrum. There is a mystery surrounding autism in the world today, and that is because the cause and cure remain unknown and the symptoms seen are variable. New treatment approaches have been created to alleviate the debilitating symptoms of autism, but many treatments lack scientific evidence. My goal for this project was to investigate autism and the recently popular therapy approaches attached with the condition. The main focus of this effort was on animal therapy, music therapy, and weighted jackets. Information was gathered via journal articles, books, and related literature. I also viewed videos to examine the different therapy approaches in action and to gain a better understanding on how autism appears differently in every child.
**Meeting Autism:**

Perhaps the best introduction comes from a popularly read newspaper-The Chicago Tribune, which on April 3, 2011 featured autism in the Parade supplement and told the story of Dana. “Dana Eisman can’t hold a conversation, cross the street by herself, or be left alone. Diagnosed with autism at age 4, she turns 21 this week, graduating from a special-needs school and into the unknown. Who will care for Dana and the hundreds of thousands of other young adults like her?” (Chen, 2011, p1). Autism has recently captured the attention of the media and has been a story subject on broadcasted news shows. Information about autism has been included in newspapers and magazines, and even public service announcements that appear during commercials on popular shows like “American Idol.” Autism raises the attention of the media because of the mysterious elements surrounding the condition. Recently, there has been a drastic increase in the number of children being diagnosed with autism. The condition has been around for 60 years, but the etiology and the cure continue to remain unknown. Autism is a difficult disorder to live with because it impacts core areas of communication and often people with autism may appear like they’re in their own little world. Many people who have autism use an alien metaphor when they try to convey the experiences that are faced by individuals on the autism spectrum.

**What is Autism?**

Autism is a neurological disorder that affects approximately 1.5 million people worldwide. Autism is characterized by a triad of symptoms according to the DSM-IV-TR. These symptoms include: impaired social interaction, impaired communication, and repetitive behavior and restricted interests (Cohen, 2006). Symptoms generally occur
before the child is three years old and some researchers argue that symptoms of autism can be detectable when the child is 12 months.

The Autism Spectrum

Autism is the most widely diagnosed disorder in the world. It covers a broad spectrum that includes: autistic disorder (general autism), asperger syndrome (high functioning autism), childhood disintegrative disorder, rett’s disorder, and pervasive developmental disorders not otherwise specified (Cohen, 2006).

The spectrum covers a broad range of characteristics and abilities and in general is called Autism Spectrum Disorders (ASD). Since the Autism Spectrum has a variety of abilities associated with it, the complexity makes it hard to make generalizations about autism.

Many parents of children who have been diagnosed with asperger syndrome argue that general autism and asperger syndrome are drastically different and therefore, should not fall under the same spectrum. There have been speculations that general autism and asperger syndrome might even have different underlying factors. It is unclear even today if they are different conditions or different intensities of the same disorder (Cohen, 2006).

Family Experiences

A child diagnosed with ASD can be a terrifying experience for a parent. Having a child with ASD or another serious developmental disability is a lifetime commitment, because there is no cure. It is not unusual for parents who have a child who has an Autism Spectrum Disorder to worry about what will happen to their child when they are no longer around. Independence for their child is a major concern for parents. Parents
with kids who have ASD also worry about their child’s education, social life, and employment opportunities. One mother who had a child on the autism spectrum stated:

“Oh, my god. Who is going to take care of Ryan if something happens to me? Are we going to have enough money to take care of him as he gets older? I mean, I can’t even let myself think too long about whether or not he’ll ever have a date for the prom or have his first job. I can’t take it right now” (Hillman, Snyder, & Neubrander, 2007, p44).

There is a tremendous amount of grief and loss that occurs when parents find out that their child has ASD. This is because parents have huge dreams and aspirations for their child, and a diagnosis of ASD can hinder those dreams. Many parents with children who have ASD suffer depression. It is theorized that parents of children with ASD have a greater incidence of experiencing depression than parents of children with terminal cancer (Hillman, 2007). The reason for this theory could be because it is thought that parents with children who have ASD experience more stress due to the fact that ASD is a lifelong commitment. Parents also sometimes experience the painful lack of connection between parent and child. This is because in some instances the child does not like to be touched, doesn’t talk, and rarely gives eye contact.

Having a child with ASD can also put a strain on a marriage, due to the stressors mentioned above as well as the huge financial burden of treatment and doctor visits. A study conducted at Harvard University estimated that a family of a child with ASD will have paid over 3.2 million dollars before the child is eighteen years old, and a child who does not have ASD will cost approximately $222,360. The difference between having a “normal” child and having a child with ASD is three million dollars (Chen, 2011).
The nature of ASD can also be extremely stressful for a parent as the child may be obsessed with routine, have frequent outbursts, hate loud noises, hate being touched, have impaired social interactions, etc. A parent reported at the mall feeling like people were judging him because his child had frequent outbursts (Cohen, 2006). Sometimes it is hard for a parent to take a child with ASD in public because of the stimuli that the child could be introduced to that might lead to an undesirable outcome. This type of stimuli could be strange odors, loud noises, or even bright lights.

Many times the lives of family members focus around the child who has ASD. Siblings might feel like they are less important and their needs don’t matter as much as their brother or sister with ASD. ASD is a difficult condition for any family to be subjected to, and as a result, some families fall apart and some families manage to cope and deal with the disorder in a positive manner. The divorce rate for parents who have a child with ASD is significantly higher than the national 50% average (Cohen, 2006).

The Drastic Increase

According to the Autism Speaks Foundation, ASD is more common than pediatric aids, juvenile diabetes, and childhood cancer combined. ASD used to be a low-incidence disorder. Unfortunately, the number of children being diagnosed with ASD has drastically increased over the years. In the 1980’s about 1 in 5,000 children were diagnosed with ASD. During the turn of the century, 1 in 500 were diagnosed, and as of today, it is estimated that 1 in 110 children are diagnosed with ASD (Hillman, 2007). Boys have a higher chance at being diagnosed with ASD. It is estimated that 1 in 70 boys are diagnosed with ASD. ASD is rising about 10-17% a year. It is predicted that in the next decade there will be 4 million Americans that will have some form of autism.
(Autism Speaks, 2011). According to “The Autism Book,” approximately 55 families every day learn that their child has ASD (Robledo & Ham-Kucharski, 2005). There are numerous debates if there is an increase in the number of cases with ASD or if the criteria to be on the spectrum is too broad and diagnoses people with ASD who do not contain the major deficits at all.

The Complexity of the Disorder

Autism Spectrum disorders are difficult to treat because degrees of symptoms vary from child to child. Symptoms range from mild to severe. Some children with autism enjoy being cuddled and some children with autism hate the thought of being touched and report feeling tortured by tight or binding clothes. Children can also be violent and loud or passive and quiet. They can be verbal or nonverbal. They can also be mentally disabled or high functioning individuals. Some children with ASD understand that their behavior is different from others around them, whereas, other kids seem oblivious (Hillman, 2006). Every child on the spectrum is different, which makes addressing ASD complicated. The complexity and high incidence rate of this disorder baffles scientists and leaves behind a series of unanswered questions because the degrees of the symptoms vary between each individual with the disorder and the cause and the cure remain unknown.

A literature review conducted in 2010 and published in the Issues in Comprehensive Pediatric Nursing stated that when a group of parents were asked what they believed caused their child’s autism topics included: immunizations, genetics, birth complications and environmental factors (Hebert & Koulouglioti, 2010). The results of this research showed that parents who believed their child was born with ASD blamed
genetics and parents who believed their child acquired ASD overtime and regressed in developmental skills after a period of normal development blamed immunizations (Hebert & Koulouglioti, 2010).

There have been numerous stories about ASD in the news. One hugely debated topic involves vaccinations/immunizations. Jenny McCarthy, a popular celebrity is active in promoting the awareness of ASD. She firmly believes that her son acquired autism when he was exposed to vaccines. McCarthy researched causes of autism after her son was diagnosed and found a study performed by Dr. Samy Suissa at McGill University. This study stated that the rate of autism “increased to a high of 27.3 cases for every 100,000 kids two years after vaccinations, whereas in unvaccinated kids only 1.45 cases of autism were found” (McCarthy, 2007). McCarthy believes that the government should make sure a child’s immune system can handle vaccines, before being exposed to them. In her book “Louder than Words” she frequently states that a parent should never stop looking for answers about how to treat and how their child acquired autism (McCarthy, 2007).

Prior to March 2010, thimerosal, the mercury-containing additive in vaccines was believed to cause the high rise in ASD. The Food and Drug Administration stated that no harm had taken place because of vaccines with thimerosal, but thimerosal was reduced or eliminated from products. Parents claim that the mercury in the thimerosal far exceeded safety standards. Medical groups have said that there is no evidence to back up the hypothesis that there is a causal relationship between vaccines and ASD (Cohen, 2006).
Treatment

Due to the high incidence rate of ASD, treatment ideas are rapidly increasing when it comes to helping treat and minimize symptoms in regards to ASD. Treatment can include behavioral analysis therapy, restricted diets, hyperbaric oxygen, chelation, acupuncture, and animal therapy just to name a few. Parents need to be cautious because some treatment methods are expensive and do not have scientific evidence to back up their claims. The placebo effect can also be powerful as well. Alternative medical interventions have been created to minimize the symptoms but there is still a lack of agreement on which strategies or combinations of strategies are most beneficial with children who have ASD (Cohen, 2006).

The purpose of my research was to examine three popular alternative treatment modalities for children who have ASD. The goal was to explore the philosophy and research behind three different sensory integration therapy treatments. Sensory integration is important to examine with children who have ASD because that is one of the most significant areas that children with ASD have difficulty with. The three different treatment approaches I investigated have been gaining recent popularity and recent attention in the news. The therapy approaches researched were animal therapy, music therapy, and weighted vests.

Animal Therapy

Animal therapy has been around for hundreds of years. It became popular in the 1990's. Animals are favorable in therapy because animals have patience, loyalty, and a particular way of listening that is significantly different than humans (Dingman, 2008).
Animal assisted therapy has been known to benefit psychological, cognitive, and social domains (Bass, Duchowny, & Llabre, 2009).

Individuals with ASD struggle with social cues and as a result, have deficits in social communication. Children with ASD also have a hard time relating to and understanding emotions of another individual. Animals have more predictable social cues than humans; therefore, animal therapy is useful because it facilitates communication between a person with autism and another living being. Animal therapy also allows a child to form an emotional bond with a nonhuman being, which indirectly allows a child to better understand the emotions and needs of another living creature.

Animal therapy is widely advocated because children have a natural interest towards animals. Temple Grandin, a PhD professor in animal science, has autism. In her book, “Thinking in Pictures: And Other Reports from My Life with Autism,” she states: “Being autistic has helped me to understand how they (animals) feel….People often fail to observe animals” (Sams, Fortney, & Willenbring, 2006, p269). Grandin learned empathy through interacting with animals. Studies have indicated that children who are more attached to their pets often show more empathy towards people (Sams, 2006).

Animals are beneficial for children because children often use animals as a source of support when they are in need of a companion. It is not uncommon for children with ASD to not have many friends because the child might come across as “odd” and be labeled “different” by their peers, therefore, animals provide the emotional support that children with ASD need. The book “Targeting Autism” quoted a man who grew up with Aspergers, named McDonnell, and he said that when he was growing up he always felt that there was a curse on him. He stated: “I always knew I was different from other kids,
I just didn’t know what the difference was. For years I guessed I was retarded, mildly retarded….That’s what kids always called me” (Cohen, 2006, p30). Growing up kids with ASD can feel inferior, abnormal and mentally impaired due to unfair labels that they are given by society. Children, adolescents, and even adults can be cruel and are not accepting to differences they do not understand. Animals do not care about labels, and therefore, create a safe and therapeutic environment for children on the autism spectrum.

A study that was conducted in Roanoke County Public Schools in Roanoke, Virginia had 22 children with ASD participating in the research project. The study consisted of each child attending one standard occupational therapy session and one therapy session incorporating an animal. During each session, language and social skills were assessed. The study found that children engaged in significantly greater social interaction and significantly greater use of language when an animal was presented in therapy. The results of this study showed that children with ASD responded positively to a nonhuman living creature (Sams, 2006).

Brenda Stone conducted an experiment with cockapoos in the classroom and noted that children with ASD had an increase in verbalizations and also improved eye contact and an increase in spontaneous conversation when the cockapoos were incorporated in therapy. During class, the children had to create a sentence using pictures to represent words in a sentence. After they created the sentence, they would verbalize the sentence and then they were allowed to brush the dog or walk the dog (Stone, 2010). The main goal of the experiment was to improve communication skills with children who had ASD.
Therapy using horses has been known to be an effective treatment for a variety of disabilities as well. Hippotherapy is the term that refers to therapies that involve horses. Some disorders that utilize hippotherapy include: spina bifida, cerebral palsy, Down syndrome, brain injuries, and now more recently, attention deficit disorders and autism-spectrum disorders. Hippotherapy is also used for people who have eating disorders, emotional disturbances, and veterans who suffer from Post-Traumatic Stress Disorder. Generally, children with ASD participate in equine therapy for 30 minutes every week for twelve weeks. Each session can range from $55 to $100 (Dingman, 2008).

One of the main focuses of animal therapy is to get children to develop relationships with creatures. Hippotherapy firmly supports this claim. The horses provide a benefit for children, but the relationship is mutual. The relationship between horses and humans has been compared to ballroom dancing and figure skating. It is looked upon as a teamwork approach. The horse encourages engagement in the child, and in return the horse requires care and patience from the horse’s rider, which gives the rider a sense of responsibility (Bass, 2009).

Hippotherapy is a widely accepted therapy technique for children who have ASD because children with autism struggle with sensory integration and riding a horse helps the child perceive sensory information and gain a better understanding on body awareness. It can also help with the child’s coordination because of the vestibular, kinesthetic, and proprioceptive inputs.

The Journal of Autism Developmental Disorders states that, “the kinesthetic stimulation that is provided by horseback riding is unique compared to the generic forms of physical therapy” (Bass, Duchowny, & Llabre, 2009). This is due to the fact that
Horseback riding requires a high level of physical engagement. Hippotherapy works on a child’s range of motion, their tactile senses, posture, and sitting balance. It is theorized that the rhythmic motion of a riding a horse allows a child to focus better because riding a horse has a calming effect on the rider (Bass, 2009).

Children with ASD who were selected to participate at the Good Hope Equestrian Training Center in Florida were required to listen to directions, verbalize commands to their horse, and identify horse anatomy. The main goal of the study was to increase the child’s focus. The intervention performed at the Good Hope Equestrian Training Center was the first of its kind to look at and quantify the results of hippotherapy in terms of social functioning. The study used the social responsiveness scale and examined participants on social awareness, social cognition, social communication, social motivation, and autistic mannerism. The therapy occurred one hour per week over the course of twelve weeks. The children who had ASD in the experimental group improved in the areas of sensory integration and directed attention. The children in the experimental group also had improved sensory sensitivity and sensory motivation (Bass, 2009).

Unfortunately, animal therapy is a relatively new concept for treating children with ASD. The main objective for animal assisted therapy is to form relationships with creatures using the same skills and behaviors that children need to use when interacting with their peers. It serves as a foundation and facilitator to ease children with disabilities into developing successful relationships with other human beings. Social skills such as greeting people, making eye contact, waiting for a turn, and listening to others are all important skills for a child with autism to learn. Hippotherapy has been known to help
with social skills, coordination, balance, and tactile senses. It has also been known to increase a child’s focusing ability.

**Equine Therapy: Observations on Video**

Due to privacy concerns, HIPAA regulations, and the small number of practitioners engaged in hippotherapy observation was limited to video. One video contained a man named Rupert Isaacson who talked about his son’s relationship with a horse named Betsy. Isaacson was being interviewed on CNN news for his book, “The Horse Boy” (Isaacson, 2009).

Isaacson’s son was diagnosed with autism in 2004. After examining the way his son and a horse named Betsy bonded, he decided to take an adventure to Mongolia with his son. Isaacson and his son traveled for 3 weeks on horse back.

Before their trip to Mongolia, Isaacson’s son was incontinent, threw frequent tantrums, and did not have any friends. After the trip he was toilet trained, his tantrums were minimized, and he had made one friend. Isaacson talked about how hippotherapy helps children with ASD calm down. He discussed how the repetitive rocking motion of a horse allows children’s brains to open up learning receptors. Riding also releases oxytocin and allows a person to enjoy and feel good about his/herself.

The second video I observed showed a boy with ASD in a stall on a foal. Initially, the boy was speaking unintelligibly and in rapid mode, and seemed to be in a state of panic. There were two foals in the stall and the foal he was not on kept nuzzling against his leg lovingly. (It is speculated that when a horse dips his head and nuzzles against a human being that it is a sign of affection and it also means that the horse has “chosen” you). The boy calmed down and seemed at peace about one minute into being
on the horse. The foal the boy was riding was gentle and patient towards the child. The horse stayed calm and moved slowly and gently with the boy on his back. In time the boy was observed petting and acting lovingly towards the horse. The child’s tactile senses were stimulated because he kept petting the horse’s mane, and he also demonstrated good posture while being on the horse, which showed that he was aware of where his body was in space. Overall, the boy’s experience with the horse seemed safe and the boy seemed to enjoy himself.

Music Therapy

Music Therapy has been used to help treat an assortment of mental and somatic disorders. According to the Journal of Alternative and Complementary Medicine, music therapy can decrease anxiety and perception of pain during medical procedures; symptoms of depression, autism, and only psychiatric illnesses can be alleviated; and cognition, communication, and literacy skills can be improved (Mrazova & Celec, 2010). Utilizing music as a tool for children who have ASD encourages development in the child’s social/emotional, cognitive/learning, and perceptual-motor areas (Staum, 2011).

Children with ASD struggle with verbal and nonverbal communication. Children who fall on the autism spectrum can have speech communication that consists of grunts, cries, shrieks, or the child might be able to speak in complete sentences. As a result, music therapy has been known to be effective in facilitating communication. This is because music acts as a medium that “involves a complex range of expressive qualities, dynamic forms and dialogue, and offers a means by which some form of alternative communication can be established” (Kim, 2008). Many parents whose children utilize music therapy have reported positive results, and believe that music is an effective
therapy approach. Some people also suggest that "musical ability is a fundamental component of autism" (Accordino, Comer, & Heller, 2007). It is also speculated that it is not unusual for a child with ASD to have remarkable musical ability.

The Autism Research Institute claims that it is not unusual for a child with ASD to sing even though he/she can't speak. Most children with ASD in the school system are mainstreamed in music classes because of this notion. Music therapists and music educators work on speech via vocal music activities. Songs with simple words and songs that have repetitive phrases can help facilitate the speech learning process. Songs with visual and tactile cues assist in the language process as well. One child at the Autism Research Institute learned noun and action verb phrases when a large doll was manipulated by the therapist/teacher and a song presented:

This is a doll

This is a doll

The doll is jumping

The doll is jumping

This is a doll

This is a doll (The bold words are what the child repeated)

Later, words were substituted for walking, sitting, sleeping, etc" (Staum, 2011).

This is an example of repetition and using music as a tool to facilitate learning. This is also an example of echoic training

Music therapy has also shown to be helpful in teaching children with ASD routines during the school day. A study was conducted in November 2006 that consisted of a music therapist composing a song for two children related to the steps of the morning
greeting routine in the classroom. The study showed significant improvement with the two boys, named Phillip and Ben, who had ASD. In the study songs helped ease the transition from home to school for Ben and Phillip. The use of song also had a positive impact on the peers’ of the children in the study. The positive intervention seemed to allow Ben and Phillip’s peers to change their perception of the boys and interact with them. The teachers and parents argue in favor of the treatment approach (Kern, Wolery, & Aldridge, 2006).

A similar study was conducted and reported in the Journal of Occupational Therapy in the year 2007, which involved children with ASD interacting with their peers who did not have ASD. The study used four preschool kids with ASD. The researchers who participated in this project created an outdoor music center called “The Music Hut.” Every day during the study the teacher took the child with ASD and his/her peer buddy to the Music Hut, initiated play between the kids, and then they sang the unique song and incorporated instruments. The teacher then taught the peer buddy how to interact with the child, and then the teacher gradually withdrew. The study reported that peer interaction with the child with ASD was higher when the teacher was involved (FPG Child Development Institute, 2011).

Improvisational music interaction has also been successful among children who have ASD. This type of therapy allows children to be creative and flexible. Improvisational music therapy is used when children are dealing with issues of rigidity and control. Research has shown that music therapy allows the child to be more in control of him/herself (Kim, Wigram & Gold, 2008).
Improvisational music therapy can also develop emotional communication and social interaction. The turn taking between the therapist and child helps facilitate the therapeutic relationship. A study was conducted with thirteen boys and two girls between the ages of 3 and 5 years of age who had ASD and who had never experienced music or play therapy. The children were recruited from the Child and Adolescent Psychiatry at Seoul National University Hospital. Each participant went to therapy for twelve weeks and each therapy session was 30 minutes long. The children were divided into two groups. Group one received music sessions first and play sessions after, and group two received play sessions first and music therapy after. During the therapy, the therapist gradually introduced modeling and turn taking activities. The PDDBI was used to measure responsiveness to interventions and the ESCS was used to measure non-verbal social communication skills. Eye contact duration and turn-taking duration were the two variables being manipulated. The result of the study was that music therapy was more beneficial for children with ASD when examining joint attention skills (Kim, 2008).

Music Therapy: Observation on video

Due to privacy concerns, and HIPAA regulations, music therapy on video was the best method to conduct my observations for music therapy. The first video I viewed in regards to music therapy was about a boy named Kenny who has ASD. His mom talked about how he used music as a tool to fit in with other people. He plays the violin, and the video explained how music has helped him feel more confident and more like his peers.

The second clip I viewed was about a place called “Arts for Healing.” It was a little house that integrates music and art therapy approaches for children with developmental disabilities. The lady explained on the video how music taps into the souls
and into the spirits of people who have disabilities. She also explained how music allows a person with ASD to express his/herself and she referred to these instances as “moments of magic.” A brother of a man who utilized the therapy at the Arts for Healing center explained how fascinating it was to see his brother process verbal input from a music teacher and then translate the verbal input into music through singing or using an instrument.

The video clip that fascinated me the most was about a child named Olivia who has autism. Olivia is a 12 year old girl. There were several clips of her music therapy sessions. Her music therapy teacher based Olivia’s therapy approach on singing. I could see how singing songs made Olivia enthusiastic and happy. The bond between the teacher and Olivia was definitely apparent in the videos. One video clip showed how her music instructor wrote out facts about Olivia and created a song entitled “Olivia.” In Olivia’s therapy session, Olivia sang, while the teacher played the piano. She repeated the phrase “My name is Olivia” and added different descriptions about herself throughout the song. The motive behind teaching Olivia this song would be to help Olivia remember important information about herself. (Where she lives, how old she is, when she visits her dad, how some people don’t understand her, etc)

It was also evident to me that music therapy allowed Olivia to express herself verbally. My favorite video clip of her was when she was singing “Love Story” by Taylor Swift. Olivia’s eyes lit up and she became very expressive when she was singing this popular song. I could tell that she has fun with her music teacher during her therapy sessions. I can also see how music therapy helps her with verbal communication.
Weighted Vests/Deep Pressure Therapy

Weighted vests are another treatment modality that many occupational therapists use to help treat children who have autism. According to Morrison, 82% of occupational therapists report using weighted vests with their students (Morrison, 2007). Weighted vests are beneficial because they provide proprioception. Proprioception refers to the sensations coming from ligaments, joints, and muscles. This sense helps people be aware of their bodies. Many people with ASD struggle with proprioception because it is speculated that some people with ASD are under stimulated and therefore, do not know where their body is in space. Children who are hyposensitive (under stimulated) may appear to be lethargic, inattention, and hyperactive. As a result, a child may flap, hit, kick, etc (Reichow et al, 2009).

Weighted vests are theorized to provide deep pressure stimulation. This is beneficial because many people with ASD report feeling frozen and helpless due to “exposure anxiety.” It is said that weighted vests have a calming effect on children’s central nervous system, which in turn helps children with ASD organize and regulate sensory input.

A vest is usually less than 10% of a child’s body weight, which is evenly distributed around the child’s body. The deep pressure from weighted vests are predicted to allow the child in the classroom to stay focused, because the pressure is said to affect deep brain structures that decrease arousal. It is therefore believed to improve stereotypy, attention, and hyperactivity. Tempor Grandin’s squeeze machine gave rise to deep pressure therapy treatments. Grandin claimed that the squeeze machine helped her decrease her anxiety.
There are many pros and cons in terms of weighted vests. Research has supported and contradicted the use of weighted vests. Some researchers claim it helps the child focus, while some researchers claim that it actually does the opposite and increases negative behavior.

A study conducted in the south part of the United States concluded that weighted vests did not have a significant impact on in-seat behavior. The investigation involved three participants and the behavior was observed during the first 10 minutes of wearing the weighted vest. Thirty-four sessions were observed. There was huge percentage of overlap between no vest, vest without weights, and weighted vests. The experiment suggested that the three conditions had a similar effect on in-seat behavior. This study conducted another experiment which used a noncontingent reinforcement (NCR). All subjects that participated in the weighted vests experiment also participated in the NCR study. The results of this study concluded that NCR resulted in appropriate in-seat behaviors (Cox, Gast, Luscre, & Ayres 2009).

A literature review was conducted on weighted vests and reported that a qualitative study that was performed collected information that reported 92.2% of respondents used weighted vests with children on the autism spectrum. The vests were generally used in school settings, and the therapists reported examining a decrease in negative behaviors. Negative behaviors included flapping, hitting, rocking, tantrums, covering face and wandering. There was also a slight increase in positive behavior, which included eye contact, attention, following instructions, staying on task, balance and stability, and purposeful requests (Morrison, 2007).
The difficulty with weighted vests is the fact that there is no standard method on how to use the vest. Empirical research for this therapy approach is also limited. Consistent positive findings for weighted vests have not been successfully documented. How long a child should wear the vest and how much weight the vest should include is still undecided, which makes studies difficult to interpret due to the variations with the weight and duration of use. The threats to internal and external validity make it hard to decide whether or not weighted vests are an appropriate therapy technique (Reichow et al, 2009).

Weighted vests are a therapy approach that has many conflicting and mixed viewpoints about the success rate of this creation. Scientific evidence is lacking due to the fact that weighted vests is one of the newest therapy techniques. An astounding number of therapists rely on weighted vests, which raises the question “Does it really work?”

There are many other therapy approaches that use the weighted vest concept. The newest therapy approach is the body sock. The body sock is known to increase social awareness. It helps with balance and coordination. Weighted blankets have also been known to produce the same “calming effects.” The deep pressure stimulation from weighted vests and weighted therapy methods are beneficial to children on the autism spectrum.

**Weighted Therapy Observations**

During the Fall of 2010, I was fortunate to see weighted therapy techniques used in an Occupational Therapy setting at a middle school. During the group therapy session a child kept acting out by blurting out random information and appeared to be extremely hyperactive. She requested the weighted blanket in the classroom and after the blanket
was wrapped around her she appeared calm and relaxed. She was still vocal about how she was feeling, but she was not blurting and spoke in a soft tone.

I have also seen the body sock in action. It was not used with a child who had autism, but it was used with a child who had cerebral palsy. The boy using the body sock seemed to enjoy himself and had no problems putting the sock on and demonstrating to me how the sock is used. After he put the body sock on he appeared to be more in control of his actions.

I viewed a couple of videos in regards to weighted therapy for children who have ASD. One video focused on the sensory belt. The sensory belt was created by a professional baseball player. The little girl broadcasted on the news story was a three year old named Emma. Emma had difficulty focusing and difficulty with security and balance. According to Emma’s mother, the weight of the sensory belt helps her feel centered, and her mom said that she noted a positive difference in Emma’s behavior after a few weeks of using the sensory belt.

Conclusions/Findings

Autism covers a huge spectrum and is a complex disorder that within the next ten years could impact millions of people around the world. Limited research has been conducted regarding ASD and sensory integration therapy, so conclusions are hard to reach because of the heterogeneous nature of each child’s symptoms and the different dependent variables that are measured in the research that is available. Some studies with hippotherapy are examining social behavior, while other studies examine range of motion. Different tools are also used to measure different responses as well. Data can also be subjective and have weak external and internal validity.
The topic that had the most research articles was music therapy. Music therapy seems to be beneficial and successful in numerous studies. Music therapy has also been around the longest than the other two therapy approaches. Animal therapy also had several research studies to examine, and seemed to have many successful scientific research experiments, but studies lacked in substantial findings about the success of weighted jackets in therapy treatment.

All three of the therapy approaches are drastically different and all three of the therapies target different behavior and have scientific theories to reason why each therapy approach is beneficial for a child with ASD. Music therapies main focus is on joint attention skills and language acquisition skills, animal therapy focuses heavily on social communication and coordination, and weighted jackets assist in helping the child focus well and is believed to increase good behavior and reduce anxiety.

One must keep in mind that there is not a perfect treatment that is going to work well for every child because of the complexity of the disorder; therefore, it is important in any disability to center the treatment on the individual. Person-centered planning is vital in any therapy treatment plan. Weighted vests might not work for one child, but for another child might show an increase in positive behavior. It all depends on what the individual prefers and the characteristics that a specific individual contains. Olivia (in the videos) clearly enjoyed singing. It helped her verbally and with her joint attention skills. If a child with ASD has strong verbal skills and joint attention skills, but still lacks in social skills, then maybe animal assisted therapy would be more appropriate. The major concept to keep in mind when tackling any disorder is the fact that no individual is a like.
There is never going to be a "cure" that rids the world of autism, or helps alleviate symptoms for every child on the spectrum.

It is imperative that the child’s symptoms are detected early. There are many early indicators of ASD. The indicators include: lack of a social smile, lack of appropriate facial expressions, does not respond to name, ignores people, appears deaf, has hypertonia, and fails to produce pre-language sounds, and hand or finger flapping. These behavioral indicators can be detected when the child is 12 months. Loss of any language or social skills is also a characteristic that needs to be monitored. There are also numerous screening instruments that a parent can have their child take to verify if their child is on the autism spectrum. The book, “Childhood Autism” states that the ability to make early assessments is vital because currently the average age of a formal diagnosis for autism is four years old. Another shocking statistic is that more than half of kids with ASD are not diagnosed until they enter the school system (Hillman, 2007).

One must always remember that we are dealing with individuals that do not need to be labeled and most likely do not want to be cured. ASD is not going away any time soon and the main mission in our society should be acceptance. This world should be a safe and welcoming place to live in regardless of the disability someone has. Unfortunately, many people with ASD in the past have been reported to feeling isolated and shunned from society.

Another focus our world needs to focus on is educating one another about ASD. People need to understand the nature of the disability, because nearly everyone at some point in their lifetime will come across a person who has ASD. Due to the high rise in ASD cases, ASD needs to be looked at as an individual difference and not an oddity.
Essentially, ASD is just one aspect of a person’s total character. No one wants to be a loner or looked upon as being different. We all strive to fit in and have the same goal which is to be accepted by society. It is vital to remember with any disorder that no two people are alike, and everyone has traits that are desirable and undesirable. It has been said that traits of ASD exist in the population of people who do not have ASD. Therefore, it is important to look at ASD as an individual difference.

Parents need to have realistic expectations for their child as well. Parents need to experience the stages of loss, but then move on and do everything possible to help their child lead a satisfying/fulfilling life. One parent in the book “Childhood Autism: A clinician’s guide to early diagnosis and integrated treatment” stated it perfectly:

“You know, as a psychologist, I always valued talking and communicating as my number one priority. This [autism] is a cruel irony. My son can’t even speak more than a few words right now. But, when he does say one of his words, or if he does hug me, I don’t take it for granted. I see many parents telling their kids to quiet down or shut up, or hurry them off to school, and I don’t think I will ever be like that. Every little thing Brent does is like a little diamond I find in the dirt” (Hillman, 2007).

Brent’s dad views life in a positive way. He is proud of his son just like any parent would be proud of his/her son. He realizes that his son’s milestones are important, and it gives him a new appreciation for life and how in life we should never take anything for granted.

Autism Spectrum Disorders are on the rise today in our society, and first and foremost, scientists need to focus on what is causing the high rise in incidences. Once
that is determined, then proper action can take place towards prevention. Therapy
approaches need to be tested and retested to become reliable and valuable to the research
world. I think it is important to emphasize that any research done is valuable research
when it relates to children who have ASD. Children with ASD are hard to study due to
the complex nature of the disorder. There are many confounding variables that can arise
when performing a study with children who have ASD. Children are sometimes involved
in multiple therapies, express different symptoms, on medication, and sometimes children
with ASD have to drop out of the study for medical reasons. It is imperative to keep
searching for positive therapy treatments/techniques, so parents and their child have the
best access to early intervention treatment. It is also important for parents to research the
different treatment options to verify that they are safe and are treating the symptoms that
need to be treated.
References:


Video Clips used:

http://www.youtube.com/watch?v=USaB9zpouA&feature=related
http://www.youtube.com/watch?v=I3h9tALzj4&feature=related
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