DISSERTATION

NOTHING ABOUT US, WITHOUT US: ELEVATING VOICES FROM THE AUTISTIC COMMUNITY

Submitted by

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ABSTRACT

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Autism Spectrum Disorder (ASD) is a neurocognitive, developmental disability that impacts social communication and is associated with restricted and repetitive behaviors. Autistic youth, however, are more likely than their peers to have a co-occurring mental health challenge and less likely to engage in outpatient mental health treatments compared to typically developing peers. Emerging evidence to support the efficacy of complementary and alternative medicines, such as animal-assisted interventions, lacks input from this historically marginalized and oppressed population. In this dissertation, I explore what the experience of engaging in animal-assisted interventions is like for 3 young people. Using a multiple case study analysis, I am sharing the lived experience of difference, voice, and individualization in a therapeutic horseback riding program. Ultimately this dissertation emphasizes the importance of voice in the evidence-based practice model and illustrates the value of being heard and seen in this world, regardless of our differences.

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DEDICATION

To Michael
The greatest privilege of my life has been the opportunity to be your sister.

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KEY WORDS AND DEFINITIONS

Autism Spectrum Disorder (ASD) – A neurocognitive, developmental disorder defined by restrictive and repetitive behaviors and social communication differences.

Animal-Assisted Interventions (AAI) – An umbrella term that includes therapies and activities involving the use of animals to increase the wellbeing of humans across the lifespan.

Animal-Assisted Therapy (AAT) – Goal-oriented therapeutic activities in which an animal contributes to the treatment process. Therapeutic activities may include physical therapy, mental health treatment, speech and language therapy, occupational therapy, or other regulated treatment programs with a licensed provider.

Animal-Assisted Activities (AAA) – Everyday living activities that are enhanced by the presence of an animal to benefit the wellbeing of humans across the life span. This may include hospital visitation programs or other wellness activities where the animal is not targeting specific goals or objectives in a treatment plan with a licensed provider.

Therapeutic Horseback Riding (THR) – A version of AAI where the provider is a riding instructor and the animal involved is a horse.

Equine-Assisted Therapy (EAT) – A version of AAI where the provider is a licensed therapy professional, and the animal involved is a horse. Also referred to as hippotherapy.

Chapter 1: Introduction

Autism Spectrum Disorder (ASD) is a neurocognitive disorder defined in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5), as having two specific areas of developmental difference: social communication and restricted and repetitive behaviors (American Psychiatric Association [APA], 2013). The DSM-5 was updated to exclude previously used terms such as Asperger's disorder and pervasive developmental disorder; instead, ASD is now categorized by three levels based on the amount of support an individual may need to access their community and live fulfilling, interdependent lives. Level one ASD requires the least amount of support, whereas level three requires the greatest amount of support.

Under the new criteria for ASD, social communication is evaluated in three areas: the content and quality of conversations, the use of pragmatic, nonverbal language, and peer relationships or lack thereof (APA, 2013). Many individuals with ASD struggle to have back and forth conversations, experience difficulties interpreting nonverbal cues and facial expressions, and find it difficult to navigate social expectations and relationships in modern society. Restricted and repetitive behavior refers to a variety of stereotyped or aberrant behaviors associated with ASD. This includes idiosyncratic speech, echolalia, sensory differences, rigidity in thinking, a desire for predictability or sameness, hyper focus on preferred stimuli, food aversions, or stimming. Stimming is a term that often refers to repetitive motor movements that individuals with ASD find soothing such as rocking, hand flapping, finger flicking, or bouncing.

Knowledge about ASD dates back several decades and the term Autism was coined by Eugen Bleuler in 1911 (Sheffer, 2018). Today we see ASD rapidly being identified at higher rates. According to data from the Centers for Disease Control and Prevention (CDC),

recent data shows that 1 in 36 children in the United States (U.S.) are being identified as having ASD (Maenner et al., 2023), a number that continues to increase each year. Those numbers are computed utilizing identification rates and record review of children under the age of eight years in participating states. In addition to a rapidly growing group, co-occurring mental health issues have been shown to affect 70-90% of individuals with ASD (Salazar et al., 2015; Simonoff et al., 2008). In fact, one study showed that 10% of the psychiatric population served identified as an individual with ASD (Joshi et al., 2010), a stark overrepresentation when compared to the estimated identification rate in the general population (Maenner et al., 2023).

Individuals with ASD are more likely to have multiple co-occurring diagnoses (Joshi et al., 2010), but some studies show that psychiatric identification is an issue itself. Belardinelli, Raza, and Taneli (2016) hypothesize that psychiatric identification is complicated by multiple factors. Individuals with ASD have core differences in communication and sensory regulation (APA, 2015), which makes it difficult to identify mental health diagnoses like anxiety and depression (Belardinelli et al., 2016). In fact, ASD often overlaps with symptoms of common mental health diagnoses, again complicating the process of identifying co-occurring conditions. One study found that their cohort of participants with ASD were under identified as having a diagnosed mental health condition at an alarming rate (Buck et al., 2014). Approximately 45% of their participants had a parent reported diagnosis for mental health; however, their own screening showed that 69% of the cohort met qualifications for an anxiety diagnosis alone.

The prevalence of co-occurring mental health disorders is an important factor when examining the costs of raising a child with ASD or having ASD yourself. A 2014 U.S. report shows that medical costs (e.g. medication, doctor's appointments, hospitalization,

etc.) were between $52,205 - $107,863 U.S. dollars a year for individuals with ASD in 2011 (Buescher et al.). Fluctuations vary depending on the age of the individual, as well as whether they have a co-occurring intellectual disability (ID). These costs are estimated to continue to rise. Alternatively, children with ASD are known to have higher healthcare costs but are less likely than their typically developing peers to engage in mental health treatment (Liptak et al., 2006; Rubel et al., 2005).

While only accounting for part of the financial burden, untreated mental health conditions are a large concern. The United States is said to be in a mental health crisis (National Alliance on Mental Illness, 2022), with an estimated 1 in 6 American youth experiencing mental health disorders and suicide continuing to be a leading cause of death for adolescents. According to researchers associated with the Autism and Developmental Disorders Inpatient Research Collaborative (ADDIRC), approximately 11% of children with ASD require hospitalization prior to adulthood (Opar, 2017). This could be impacted by the previously stated statistic that individuals with ASD are less likely than their peers to utilize outpatient services. Inpatient care is known to be more expensive and costly to families and a priority should be placed on engaging families in outpatient services that are safe and affordable (Shea et al., 2018). While higher levels of care such as inpatient treatment and residential placement may be highly sought after, these resources are limited as well (Garbus, 2018; Low, 2018).

There is limited access to outpatient mental health treatments that research has shown to be effective for people with ASD and those that are accessible are not meeting the needs of all families. Some families may be avoiding outpatient care because of the growing concern around treatments that are currently considered “best practice” or “evidence-based”. For example, adult self-advocates have been speaking out about the trauma they associate with behavioral therapies

during their childhood (Kirkham, 2017; Layle, 2021) and the largest self-advocate organization representing the ASD community in the U.S. has also spoken out against the unethical treatment options and research practices associated with those options (Autistic Self Advocacy Network [ASAN], 2021).

Researchers highlight the bias and discrimination embedded into currently funded best practices and the evidence-based practice (EBP) model itself (Rogers, 2004). In its true form, EBP contains three components: empirical evidence, clinician judgement, and consumer feedback. The controversy over some behavioral therapy methods demonstrates how consumer feedback is not being utilized appropriately as the model intended. This is not a criticism of EBP itself, merely a criticism of how researchers and policymakers have not implemented the model to fidelity. The current approach puts more weight on the empirical evidence over the other components, instead of respecting all three components equally.

To summarize, children with ASD are more likely to have a co-occurring mental health condition (Joshi et al., 2010) and are less likely to utilize outpatient mental health services (Liptak et al., 2006). Subsequently, this pattern leads to higher rates of psychiatric hospitalization when compared to their typically developing peers (Opar, 2017) despite there being few psychiatric treatment facilities specializing in the treatment of ASD and co-occurring mental health conditions (Siegel et al., 2015). This results in higher healthcare costs that will continue to rise as predicted by Leigh & Du (2015).

Barriers to care, a mistrust of the medical community, and rising healthcare costs are part of why some families raising a child with ASD are turning to complementary and alternative medicine (CAM) (Chaidez et al., 2018; Levy & Hyman, 2008). Statistics about how many children with ASD are utilizing CAM vary. In their literature review, Levy and Hyman (2008)

report anywhere from 2-75% of individuals with ASD utilize CAM. A study from 2017 identified that parental beliefs in the cause of ASD appear to correlate with the type of treatment that families choose, again demonstrating the mistrust of the medical and academic communities (Chaidez et al.). Commonly utilized CAM for ASD includes special diets (e.g. gluten free, casein free), nutritional supplements (e.g. vitamins and probiotics), and a variety of therapies including music therapy, aromatherapy, massage, or chiropractic care (Chaidez et al., 2017; Levy & Hyman, 2008). Animal Assisted Interventions (AAI) is also considered CAM and research is growing in this area to show its positive influences on a variety of areas (Hoagwood et al., 2017; O'Haire, 2013). Specifically, the growing body of literature suggests that the use of AAI to benefit people with ASD has positive impacts on social skills, self-regulation, and engagement with clinical teams (Davis et al., 2015; Hoagwood et al., 2017; O'Haire, 2013).

Neurodivergent identification is rapidly increasing and is often costly to individuals and our community. Failure to respect the voice of people with ASD has impacted their trust in the EBP model within the medical community, leading to increased out of pocket expenses to access CAM. To realign science with the community, researchers need to listen and invest resources into developing the evidence around treatment options that the community is interested in so that advocacy efforts to fund these programs can be successful. This project seeks to specifically explore the efficacy of one CAM in particular, AAI.

Autism and Animals

After identifying the problem, I set off to understand what we currently know about the efficacy of the use of AAI to support the autistic community and determine how I wanted to contribute to the field through my dissertation project. This growing body of evidence has shown

a great deal of momentum in the last decade, showing positive impacts on behavioral, social, and emotional change.

Social outcomes consist of results that include change in non-verbal communication, verbal communication, engagement with other humans in the room, and other social skills. Outcomes labeled as behavioral consist of studies that reduced aberrant behaviors such as aggression, blurting out, hand flapping, and other stereotyped or externalized behaviors. Finally, emotional outcomes consist of results indicating changes in mood or stress. This includes reports of increased happiness or joy from questionnaires, as well as reports of reduced stress through physiological measurements such as wearable technology or cortisol.

Social Outcomes

Social communication is an area of difference defined in the DSM-V as a core part of the ASD diagnostic profile (APA, 2013). Regarding social skill development, two primary models appear to be emerging within the literature; AAI as a complementary treatment paired with an EBP for ASD and use of AAI as a standalone treatment.

Complementary treatments used the same curriculum in the treatment group and the control group; however, the treatment group had the additional integration of an animal. Becker and colleagues (2017) used this model and found that both groups improved on all measures, but the treatment group with a canine present displayed statistically significant gains compared to the control group. Grigore and Rusu (2014) attempted to pair AAI with the best practice of using social stories. Their study consisted of three participants who all showed positive correlations with the combination, but only one participant had statistically significant results. A sample size this small cannot be generalized to the population, but case studies play their own important role in the research process and should not be excluded from the overall analysis (Flyvbjerg, 2006).

Another study had 45 participants engage in three treatment conditions: dance therapy, AAT, and a combination of dance therapy and AAT (Souza-Santos & Teixeira-Machado, 2018). Their results also showed increases in communication across all conditions, but the combination of dance and AAT resulted in the greatest impact, suggesting that AAI as a complement to another therapy can be more effective than standard treatments alone.

The mere presence of an animal may facilitate increased prosocial engagement, according to several studies in this review (Germone et al., 2019; London et al., 2020; O'Haire et al., 2014, 2015; Silva et al., 2011, 2019). The results of AAA studies on social skill development included increased use of gestures and appropriate gaze (Germone et al., 2019) and increased verbal communication (London et al., 2020; Silva et al., 2019).

The literature shows that theory of mind has been incorporated into at least one quasi-experimental study (Becker et al., 2017). Theory of mind is a framework that articulates our understanding of how we think about social interactions; we all have thoughts about each other and ourselves, which directly impact how we interact and what expectations are in social situation (Astington & Edward, 2010). With that said, individuals with ASD may struggle with theory of mind (Berenguer, Miranda, Colomer, Baixauli, & Rosello, 2018). Theory of mind differences for individuals with ASD may be related to their use of language and deficits in social skills.

Becker et al. (2017) found that AAT with canines increased accuracy in theory of mind when AAT was paired with an adapted evidence-based social skill curriculum. The name of their adapted curriculum is not mentioned and how the animals were used in each section was not explicitly available in the published study. The curriculum was utilized with two groups to compare outcomes, finding that the trial group that participated in the curriculum with the canine

present showed greater gains in social skills when compared to their peers in the control group that participated in the same curriculum without a canine present. Becker et al. (2017) reports that the canines were used in sessions for role play activities. They believe that the trial group may have felt more engaged and excited to participate in role play activities when compared to the control group.

Verbal communication has been influenced by AAI in other areas as well (Berry et al., 2013; Hoagwood et al., 2017; Michelotto et al., 2019). Equine-assisted AAI showed an increase in the number of words utilized after treatment when compared to baseline word usage prior to treatment (Gabriels et al., 2015). We also know that this study had a 6 month follow up that showed retention of those skills (Gabriels et al., 2018). The presence of a canine in a psychiatric hospital setting for children with ASD demonstrated an increase of word usage when compared to the presence of a novel toy (Germone et al., 2019). This study's outcomes were based on behavioral coding via video recordings post intervention. There is also evidence to suggest that parents have anecdotally observed increases in their child's communication after completing AAI programs (Buck & Lavery, 2020; Michelotto et al., 2019).

Nonverbal language is also an important part of how we, as humans, communicate with one another. Studies have shown an increase in nonverbal communication from children with ASD during AAI as well (Funahashi, Gruebler, Aoki, Kadone, & Suzuki, 2014; Germone et al., 2019). Nonverbal communication includes facial cues, gestures, eye contact, and other types of body language. Becker et al. measured theory of mind gains using a measure called the Reading the Mind in the Eyes Test (RMET; 2017). This test required participants to name feelings by looking at a photo of a person. Gains in theory of mind showed, not only the increased use of verbal language to identify emotions, but also the increased ability to understand nonverbal

communication in others through facial cues. Germone et al. (2019) and Protopopova et al. (2019) also recorded increases in prosocial nonverbal behaviors during their studies with canines such as increased gestures, eye contact, and appropriate gaze.

Behavioral Outcomes

The second core feature in the ASD diagnostic profile is the restricted and repetitive behaviors (APA, 2013). There were two different ways this was explored in the literature. To be coded within this theme, outcomes indicated either a reduction in aberrant behaviors, such as aggression or hyperactivity (Anderson & Meints, 2016; Gabriels et al., 2015; García-Gómez et al., 2017; Holm et al., 2014; Michelotto et al., 2019), or increases in daily living skills, such as executive functioning or adaptability (Ajzenman et al., 2013; Borgi et al., 2016; Coman et al., 2018; Lanning et al., 2014; Tan & Simmonds, 2018).

There have been a variety of interventions shown to have positive effects on behavior (Berry et al., 2013; Hoagwood et al., 2017; O'Haire, 2013). A 10-week trial of THR showed reductions in irritability and hyperactivity on the Aberrant Behavior Checklist – Community (ABC-C; Gabriels et al., 2018). These outcomes suggest an increase in self-regulation and positive behaviors (Gabriels et al., 2015), which were sustained six months post intervention (Gabriels et al., 2018). Parents have also agreed that they have seen a reduction in restrictive and repetitive behaviors after their child engaged in AAI with canines (Michelotto et al., 2019). Some studies have connected the increase in cortisol or stress with a reduction in aberrant behaviors (O'Haire et al., 2015), while others have found cortisol levels are not a predictor of behavioral regulation (Protopopova et al., 2019). Increased compliance with work tasks and challenging tasks appears to be associated with the presence of canines as well (Protopopova et al., 2019; Silva, Lima, Santos-Magalhaes, Fafiaes, & de Sousa, 2017). Silva et al. provides an

interesting look at individuals with ASD who were severely impacted by ASD (2017). It is the only study in the literature review that has specifically recruited participants with level three ASD and results suggest that AAI is effective for this group as well.

Protopopova and colleagues (2019) used behavioral therapy to test how restricted and unrestricted access to canines during adult directed work assignments changed outcome. Interestingly, they found that contingent access to canines appeared to motivate work compliance, while non-contingent, unrestricted access increased prosocial engagement. This pilot study suggests that the way in which an animal is introduced in therapeutic settings can impact outcomes.

The greatest outcomes for sensory sensitivities have been found in AAI with horses (Gabriels et al., 2018; Ward et al., 2013). An important note regarding sensory differences in individuals with ASD is the great variability observed (Grandin et al., 2015). This variability also makes it difficult to determine if AAI is an option for someone with ASD, given that some sensory sensitivities are so severe that the presence of an animal may make the individual more closed off than engaged.

Germone et al. (2019) also measured touch in their AAA study with canines. Their team found there was not an increase in touch, suggesting that sensory tolerance may not be an outcome associated with AAI when using canines. This displays the different possible outcomes between species in AAI with ASD. This was also the only finding in another study that incorporated multiple animal species on a farm that was coded inconclusive in the overall analysis (Barnhart et al., 2020).

Emotional Outcomes

Emotional outcomes of participants were the least frequently explored outcome in this set of literature. It is a common misconception that individuals with ASD lack empathy, whereas many articulate adults with ASD will tell you that is not an accurate portrayal of their lived experience (Laursen, Moore, Yazdgerdi, & Milberger, 2013). In fact, they describe having difficulty finding the correct words to describe their internal feelings and subsequently a difficult time processing and understanding that of what others are expressing to them (Laursen et al., 2013). This likely impacts the ability of researchers to properly assess the emotional state of participants.

Joy, creativity, and increased self-confidence were specific outcomes found to be associated with the use of AAI in this subsection of studies. One study also found that children who were participating in a school-based AAA program were reported to be more excited to go to school on days in which they were scheduled to interact with guinea pigs (O'Haire et al., 2014). In this study, the primary outcome was increased prosocial behaviors, but there was a secondary gain associated with positive feelings towards school.

Emotional outcomes were often explored with physiological measures such as cortisol and wearable devices (Funahashi et al., 2014; O'Haire et al., 2015; Pan et al., 2019; Protopopova et al., 2019; Silva et al., 2019). A previously published article on measures for AAI and ASD suggested these measures are growing in popularity and accuracy, but are far from perfect at this time (Rodriguez et al., 2018). Cortisol measures activity in the stress response system, indicating elevated stress when cortisol increases from baseline. Wearable devices can measure other physiological responses associated with increased emotional activation such as elevated heart rate and electrodermal activity. Wearable devices show promising results in O'Haire (2015), Silva (2019), and Pan's (2019) studies, while Protopopova's (2019) use of saliva cortisol resulted

in inconclusive results. This study suggests that advancements in saliva testing are evolving, as demonstrated by the research team adjusting their testing procedure after discovering best-practice recommendations had changed.

Summary of Findings

Overall, the data to support the efficacy of AAI is growing. A gap exists in the literature, showing limitations in studying emotional outcomes of the population and collecting data directly from the participants themselves. This gap is reinforced by the differences in social communication often experienced by autistic folx. Instead, we see that researchers focus on gathering data from caregivers and professionals. While this information is helpful, autistic folx should have the ultimate say in what treatments they engage in and what the goals of those treatments should focus on. Despite all the evidence, it is still unclear what the experience of engaging in AAI is for people with ASD and this limits our ability to understand the human-animal bond on a deeper level.

Relevance to Social Work

My professional background as a social worker is key to this project, and any research in which I engage. As former Senator Barbara Mikulski once said, “you are a social worker forever in whatever you do and whatever you become” (Cortina, 2018, para. 1) and her words inspire my devotion to this field in every project I undertake. The practice of social work is guided by three primary sources, the National Association of Social Work (NASW) Code of Ethics, the American Academy of Social Work and Social Welfare’s Social Work Grand Challenges, and each state’s practice act that governs the practice of social work licensees. The following sections will focus on how the NASW Code of Ethics and the Social Work Grand Challenges will guide my research.

NASW Code of Ethics

There are two values from the NASW Code of Ethics that will frame my approach to research (National Association of Social Workers, 2017); respecting the dignity and worth of every person and the right to self-determination. These two values have specifically guided my decision to utilize Critical Disability Theory (CDT) to construct my project and analyze current evidence.

Respecting the Dignity and Worth of Every Person. To respect the worth of every person, it feels imperative that I utilize CDT. One of the primary tenets of CDT is the acknowledgment that ableism creates power differences that devalue the voice of people with disability in our socially constructed world (Hall, 2019; Hosking, 2008). If the goal of social work is to promote social justice and the intent of research grounded in CDT is also to empower those with a marginalized identity, the match between these lends itself to establishing trust and validity in this analysis (Cho & Trent, 2006). To respect the worth of every person, this analysis will focus on the data collected from people with ASD themselves in the literature review.

The Right to Self-Determination. Like respecting the worth of every person, the right to self-determination places importance on how people with ASD want to live their own lives. Self-determination is the right to make choices about our own lives (National Association of Social Workers, 2017). There are criticisms about the use of the EBP model in the human service field. EBP has a history of fraud associated with academia and has even harmed the marginalized communities they are supposed to benefit (Gambrill, 2010). These criticisms highlight a lack of diverse representation in academic research and disregard of the consumer opinion, which is one of the three evidence bases that should be used to determine the efficacy of treatments (Rogers,

2004). This project is committed to social justice and will explore how people with ASD make decisions and engage with the available data driven evidence to support the use of AAI.

Grand Challenges

The Grand Challenges are an excellent guide to setting research goals as a social worker (Lubben et al., 2018). Grand challenges can help a researcher stay focused on outcomes or goals that add to the overall impact of the field. For this project, the specific challenges that help shape the direction of the work will be **eradicating social isolation** and **achieving equal opportunities and justice**. Human-animal bond fits well into the challenge to eradicate social isolation (Compitus, 2019). Although the code of ethics directs social workers to value human relationships, the emerging evidence in the field of human-animal bond suggests that, for some, human-animal relationships can serve similar importance. In fact, some individuals with ASD may even have closer relationships with animals than other humans (Grandin et al., 2015; Meehan et al., 2017). Thus, these relationships should be considered an option for eradicating isolation and creating meaningful companionship.

The grand challenge of achieving equal opportunity and justice has implications for healthcare access and education (Lubben et al., 2018). Although the policy recommendations primarily focusing on discrimination by race and ethnicity, recommendation three states social workers should "identify and implement evidence-based training for school teachers, administrators, and other school-based professionals who exhibit problem behaviors or who have been diagnosed with disabilities" (McRoy et al., 2016, p. 2). As previously stated, education is one of the largest costs impacting expenditures for ASD (Buescher et al., 2014) and the identification of AAI as an EBP could allow increased access to these types of programs in

educational settings. Schools also serve as an important setting for several AAI studies (Hill et al., 2014).

Theoretical Framework

This project utilized a feminist lens to explore the problem of limited mental health options for people with ASD and the rising out-of-pocket healthcare expenses. Feminist work should be emancipatory in nature and seek to elicit social change (Harding, 2006). The goal of this project is to triangulate empirical evidence showing the effectiveness of AAI with the lived experience and perspective of the community involved. By focusing on the consumer voice, I hope to establish evidence that can be used for advocacy efforts to fund AAI and grow established and effective programs.

Critical Disability Theory

Critical Disability Theory (CDT) is a critical theory that was birthed from feminism and is concerned about power differences associated with ability (Arstein-Kerslake & Black, 2020). There are seven components of CDT: Models of Disability, Multidimensionality, Valuing Diversity, Rights, Voice, Language, and Transformative Politics (Hosking, 2008). Positivist approaches to knowledge are aligned with the medical model of disability, which sees ASD as something that can be diagnosed, treated, and cured (Ingham, 2018). Using CDT, however, disability is socially constructed (Siebers, 2001) and requires the environment to be adapted to meet the needs of all, versus the standard requirement of people with disabilities needing to adapt and fit in. Using CDT to guide research puts more emphasis on the experiences of people with ASD from their own perspectives and elevates their voice.

The Human Animal Bond and Attachment Theory

There is some evidence to suggest that animals can serve as attachment figures for certain individuals (Meehan, 2017). The use of attachment theory to understand the evidence to support AAI does not encompass all the specific connections between people with ASD and animals though. Since voice is an essential feature of this project, it seems appropriate to focus on the experiences of people with ASD and their unique attachment to animals. For example, Dr. Temple Grandin explores how her own autistic brain allows her to connect with animals and understand their non-verbal communication style in her novel *Animals in Translation* (2005).

> "I think that's also the reason for the special connection autistic people like me have to animals. Autism people's frontal lobes almost never work as well as normal people's do, so our brain function ends up being somewhere in between human and animal. We use our animal brains more than normal people do, because we have to. We don't have a choice. (p. 57)"

Dr. Grandin's theory about the human animal bond being impacted by sharing similar brain functions is not necessarily proven. We are still working to understand the brain and how it works for humans and animals alike. However, I do argue that the most important perspective here is that of autistic people, which gives great weight to Dr. Grandin's words. As an expert in animal science and an autistic self-advocate, I have no doubt that Dr. Grandin is a reliable source when unpacking the theory behind why and how people with ASD benefit from relationships with animals.

Conclusion

In summary, the inequitable access to high quality and effective mental health outpatient treatment options for individuals with ASD is of utmost concern. As with any trustworthy qualitative project, my professional lens as a social worker and the guiding theory, CDT, are

aligned and consistent. Together, they create a critical lens that will frame the remainder of this project. I would like to increase access for autistic people to safe, affordable, and effective mental health treatments and this project focuses specifically on AAI as an option for that treatment. After reviewing what is currently known about the field, this critical framework emphasizes voice and self-determination. Using this framework, I seek to understand *what are the experiences of individuals with ASD who engage in AAI and how do those experiences impact their lives*? Answering these questions will allow consumer voice to either support or deny the growing literature base that suggests AAI could be a viable mental health treatment option.

Chapter 2: A Critical Literature Review

To address the identified research questions, a scoping search of the literature was conducted to identify existing evidence on the use and impact of AAI with people with autism. Special attention has paid to evidence pertaining to individuals with ASD who have a co-occurring mental health diagnosis. While my research questions do not specifically seek to understand youth over adult experiences, a lack of research involving autistic adults influenced my focus on children and adolescents. My review utilized key words and search phrases from previous literature in order to provide an updated critical analysis (O'Haire, 2013; Nieforth et al., 2021).

For the population of interest, the key words entered in EBSCOhost included Autis* OR asperger OR "pervasive developmental disorder". Given the historical lack of standard language in the field (O'Haire, 2013), the key search words to identify literature was also borrowed from previous reviews and included "animal assisted" OR "assistance dogs" OR "canine assisted" OR "dolphin assisted" OR "equine assisted" OR hippotherapy OR "horseback riding" OR "pet facilitated" OR "service dog" OR "therapeutic animal" OR "therapeutic horseback" OR "therapy with animals". The databases utilized for the search were dependent on what was available through Colorado State University. Through EBSCOhost this study used Academic Search Premier, APA PsychArticles, APA PsychInfo , ERIC, Family and Society Studies Worldwide, Social Work Abstracts, Psychology and Behavioral Sciences Collection, Primary Search, and MED LINE. Outside of EBSCOhost, I utilized google scholar and the American Psychological Association's Human Animal Interaction bulletin to search for additional peer reviewed literature.

Inclusion and exclusion criteria were selected based on the overall research questions for my dissertation. For example, the dissertation questions are specifically interested in the experience of AAI, thus studies focusing on the impact of pets and service dogs were excluded. Additional criteria that were applied during the review of abstracts included the exclusion of articles that did not have ASD as the primary sample and studies that only explored robotic animals as the primary intervention. My literature review included peer-reviewed, empirical published work from 2013-2023.

Critical Review and Appraisal

To conduct my analysis through a CDT lens, I first operationalized each tenet of CDT using a protocol I created for this study. A chart of this protocol can be found in Figure 1 and rationalization for the operation is described in the subsequent sections.

Models of Disability

Models of disability refers to the perspective used to view the disabled experience. Under the medical model of disability, for example, we see disability as something that can be treated and cured. This pathologizes and pities the experience of disability as 'less than'. Instead, researchers using CDT approach the experience of disability from a social model. Under the social model of disability, we shift our perspective by using a constructivist approach and acknowledge that disability is a socially constructed concept.

To assess the model of disability within the literature, I explored the measures used by researchers. Studies that utilize ASD diagnostic tools to measure decreased ASD symptomology are inherently seeking to treat ASD and use a medical model of disability in their understanding

CDT Tenet	Operation
Models of Disability	Studies that utilize ASD diagnostic tools to measure outcomes
Multidimensionality	Demographics of the samples versus the population
Valuing Diversity	Identifying inclusion and exclusion criteria
Voice	Data source of study outcomes
Rights	Evidence of participant-driven goals
Language	Comparison of person-first, identity-first, and pathologizing medical language
Transformative Politics	Research designs that utilize participatory action methods

Note. Figure contains a brief description of how each tenet was defined within the literature review.

Figure 1: Operationalization of CDT Tenets

of the autistic experience. According to the Centers for Disease Control and Prevention (Centers for Disease Control and Prevention, 2022) the following measures are considered diagnostic tools: the Autism Diagnostic Observation Schedule (ADOS), the Gilliam Autism Rating Scale (GARS), and the Childhood Autism Rating Scale (CARS). While only 8.5% (n=4) of the studies reviewed incorporated these tools as outcome measures (Becker et al, 2017; Stevenson et al., 2015; Souza-Santos et al., 2018; Ward et al., 2013), it was disappointing to see that any research team approached their design with the intent to reduce autistic characteristics specifically.

Multidimensionality

Under CDT, there is a robust approach to understanding the intersection of identities and how that impacts an individual's personal experience. Each individual and their experience is valid, unique, and dynamic. Under CDT, intersectionality becomes multidimensional. The

disability experience is impacted by diverse identities such as gender, ethnicity, and race; but it is also impacted by the concept of disability itself. Unlike other identities, disability is fluid and, at times, changing. Individuals who are born able-bodied can experience temporary disability, disability associated with aging, or even disability that occurs after an acute injury or illness (such as a traumatic brain injury). Disability also exists on a spectrum of visibility, which may also impact the experience an individual has with their place in the world.

In order to evaluate this tenet, I reviewed the demographics of the sample in each study and compared these with the known demographics of the population. However, one of the results of this approach was the realization that several areas of demographic information was sparsely available. The information that was available showed a lack of ethnic and racial data. Samples overwhelmingly identified as white or Caucasian when this information was available. Those that included information about gender were predominately male, potentially a lingering side effect of the historical under identification of autistic women.

The concern about homogenous samples is another ethical concern highlighted by the ASAN (2021). The intersectional identities that make the experience of disability truly unique are underrepresented throughout the literature base.

Valuing Diversity

The core tenant of valuing diversity poses the "Dilemma of Difference" originally coined by Martha Minow (1985). The dilemma of difference raises important questions about difference, individualization, and stigma. This concept is best understood when examining special education services and the multitude of educational programs available. Self-contained classrooms and specialized education programs separate children with disabilities from their typically developing peers. There are benefits to having an education created specifically for

your needs, but it is arguably disenfranchising and stigmatizing to separate children based on their ability. This is the dilemma, an ethical argument about the value of integration versus individualization.

To evaluate this tenet, I explored the inclusion and exclusion criteria in search of greater understanding. Due to the nature of this literature search, having a diagnosis of autism was found in 100% of the literature. In fact, those that did not focus on ASD were not included in this review. With that said, this decision was made specifically to accommodate the research question and was not necessarily done because I believe that autistic individuals can only receive group therapy with other autistic individuals.

Depending on the research questions driving the studies I reviewed, some studies excluded individuals with co-occurring diagnoses such as mental health or medical conditions. This certainly can lead to a more homogenous sample that is not representative of the diverse experience of autism. Most notably, language use and cognitive differences, such as having an intellectual disability, were frequent rule outs. This is not a new trend (Opar, 2017), but this review helps to confirm this gap persists and requires attention. Research involving this population should be careful to avoid excluding individuals who are unique members of this community because their experiences could be different.

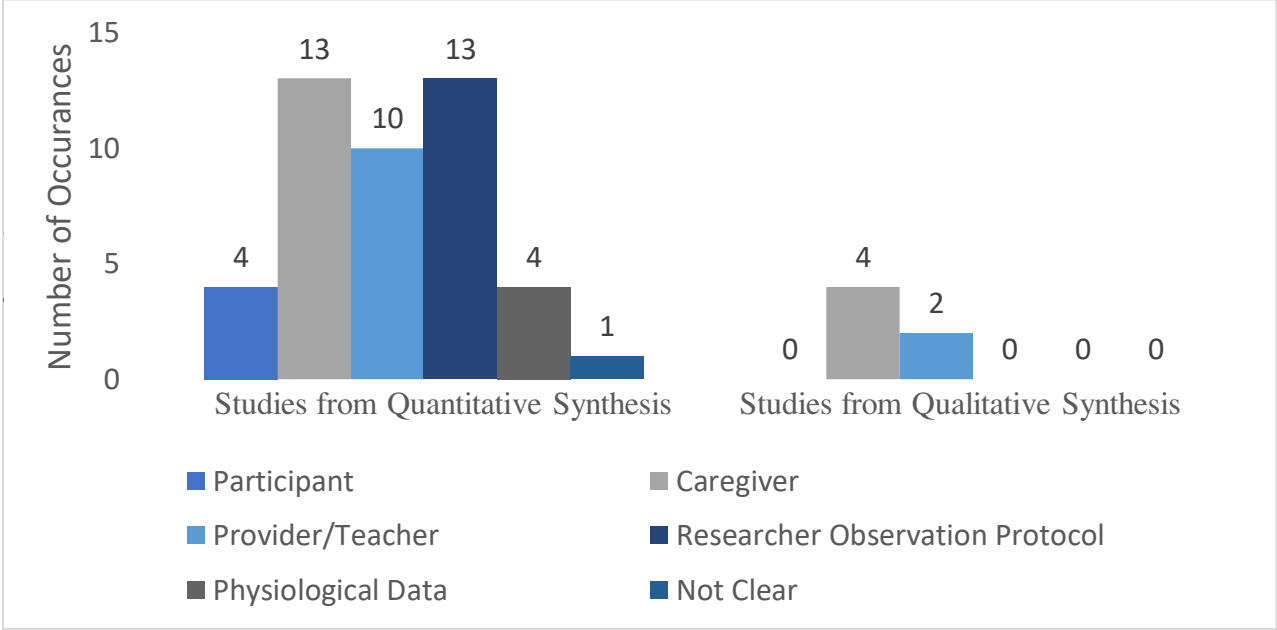
Rights

Disability rights are human rights and the right to self-determination will be a key feature of this analysis. As a social worker, it is important to me that an individual's right to choose how they live their life drives any intervention. The operation for exploring this tenet sought to identify studies that utilized participant-driven goals. Participant driven goals show a commitment to self-determination by focusing on outcomes self-advocates desire. Unfortunately,

only four studies incorporated participant driven goals into the study itself. Primary contributors were instead the research team, based on their research questions, and caregivers.

Voice

The issue of voice raises important questions about whose knowledge matters. A common saying within the disability community is "nothing about us, without us", highlighting the common misstep in leaving out the voices of lived experience with disability when making decisions that impact the community. To evaluate the commitment voice within the literature, I explored the sources associated with the data collected. The primary sources of data within this literature base were caregivers and professionals working with participants (see Figure 2). A mere 8.5% (n=4) of studies gathered data from the participants directly (Becker et al., 2017; Kemeny et al., 2021; O'Haire, 2015 a and b).



Note. Total number of data sources does not equal total number of studies due to some studies utilizing more than one data source.

Figure 2: Bar Graph Depicting Data Sources Utilized in the Literature

Language

The concept of appropriate language within the disability community is one that is ever changing. In the early 2000's, person-first language was thought of as standard. The premise was simple, always put the person first. In recent years, however, a shift towards identity-first language has emerged. Identity-first language aligns with the social construction of disability, in which disability is not something that can be cured, removed, or treated. Instead, it asserts ownership of your differences. While both approaches are considered best practice, language that pathologizes disabled communities as pitiful, less-than, deficient, or otherwise 'bad' is not tolerated.

Within the literature only one study utilized identity-first language (Malcolm et al., 2017). This is not surprising given the recent change from person-first to identity-first. This does highlight a need for academics and researchers to consider the change that is being promoted by self-advocacy organizations like ASAN. Aside from this, several pathologizing statements were noted within the literature that utilized person-first language. For example, studies that utilize terminology such as 'mild', 'moderate', and 'severe' when describing an individual's experience is outdated and harmful to the population. Additionally, some studies continue to use the word 'aspergers' when describing individuals with a level 1 ASD diagnosis, despite the history and connotation of the word (Sheffer, 2018).

Many studies continue to seek a reduction in ASD symptomology, often characterizing the behaviors and predispositions of autistic people as incorrect or antisocial. For example, Anderson and Meints (2015) did not utilize ASD diagnostic tools to measure outcomes, but they did use the Autism Spectrum Quotient (ASQ) to measure changes in autistic characteristics.

Studies often discuss differences as deficits when it comes to disability and words such as 'comorbidity' have a pathologizing connotation in medical literature.

Transformative Politics

An essential feature of CDT is the theory's focus on transformative politics. Like other feminist methods, research using CDT should aim for real systems change. It is difficult to assess the intent of the authors and research teams that worked on these studies and confirm if their intent was transformational. Instead, I elected to explore research methodology. The ASAN (2021) suggests that participatory action research is an essential component of ethical research into treatment options for autistic people. Given that consumer opinion and feedback is one of the three markers for EBP as well, it is surprising to find that there were no studies that incorporated this approach. Real system's change is difficult to achieve without the lived experience and testimony from autistic people to support its efficacy.

Application

One of the largest gaps identified in this review is the stark absence of lived experience and consumer opinion. A total of eight qualitative studies were included in this analysis (Abihisira, Brown, and Breslin, 2020; Barnhart et al., 2020; Buck & Lavery, 2020; Grigore and Bazgan, 2017; London et al., 2020; Lovric et al., 2020; Malcolm et al., 2018; Tan and Simmons, 2018). Of these, none interviewed participants themselves, thus excluding first-hand lived experience from the entire literature base. This raises important issues around power, privilege, and knowledge in scientific inquiry. Despite individuals with ASD being the participants in these studies, caregivers and providers are overwhelmingly the data source. This places the power to create knowledge on those who do not have ASD and have not necessarily experienced AAI firsthand. This practice creates outcomes that are potentially subjective and biased, regardless of

how rigorous the research methods are, because the respondents have their own assumptions and perspectives that may differ from the participants themselves. In fact, feminist scholars often use standpoint theory to justify the use of qualitative work with marginalized populations, citing that the use of a first-hand experience can actually increase objectivity (Naples & Gurr, 2014).

Subsequently, this gap is pivotal to answering my research questions about lived experience and suggests that this is where I can make a difference. Working alongside my colleagues, I implemented a qualitative study protocol that seeks to understand the experiences of AAI and its impact on the lives of autistic people from autistic people directly. While well intended, the able-bodied research field has failed to see and hear the population. The failure to respond to this can be seen in writings by disabled women in *What Happened to You?* and a poem written by Jenni Meredith (1996, p. 105).

*Are you **D**eaf?*

*Are you bl**I**nd?*

*Can't you **S**ee me?*

*Can't you he**A**r me?*

*And do you **B**lame*

*my disab**I**lity*

*for your **L**ack*

*of ins**I**ght,*

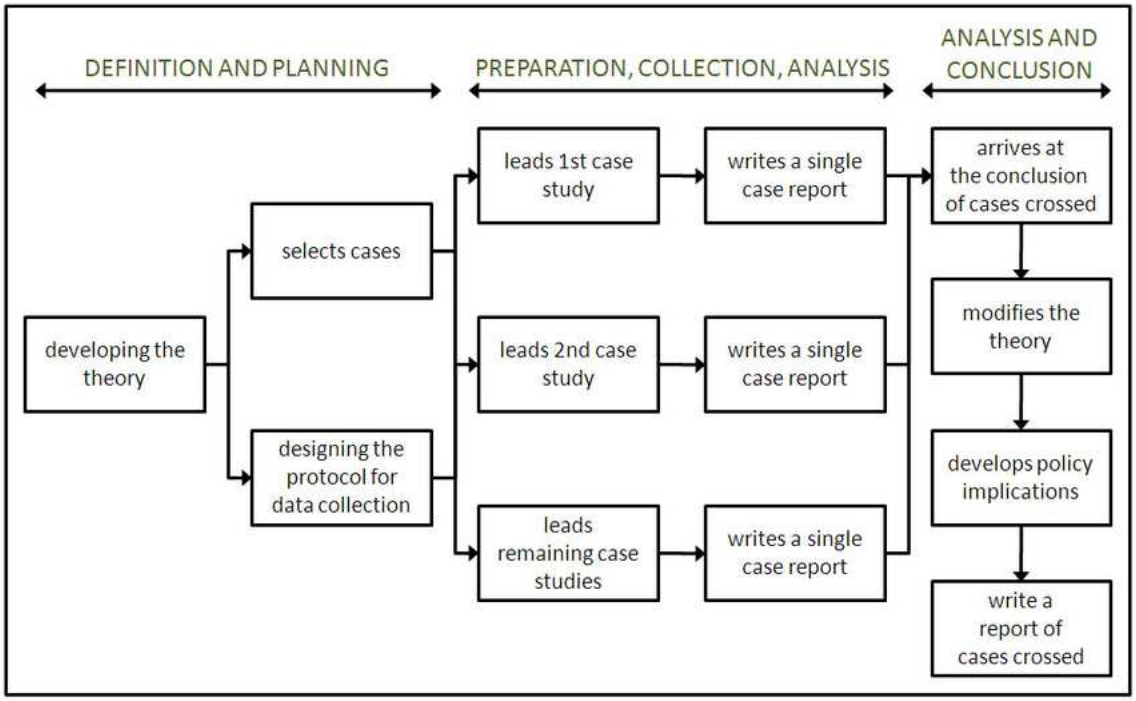
*for your shor**T**comings?*

*Do **Y**ou?*

This project aims to see and hear people, elevating those voices, to right these wrongs.

Chapter 3: Methods

This study was a qualitative, multiple case study analysis that followed the case study procedure outlined by Robert Yin (2018, see Figure 3). Using the ASAN white paper (2021), I knew that a qualitative project was going to be my approach. ASAN specifically calls for researchers to utilize community-based participatory research, however this was not a feasible option for this project. In the spirit of participatory action research, I am most focused on the lived experiences and stories of autistic people, and this will be a golden thread throughout this project. This unfunded, time limited project was not able to conduct participatory action research due to those limitations, but I was offered glimpse inside this world through the eyes of 3 young people.



Note. From Robert Yin, 2018

Figure 3: Case Study Procedure

Given that my research questions were interested in the internal experiences of humans, a study that utilized interviewing with participants was essential (Weiss, 1994). The need to

accommodate participant's disabilities specifically indicated that semi-structured interviewing would be the best fit, giving me the ability to adapt language and wording to the individual. This approach allows me to provide greater insight into the experiences of individuals engaged in AAI and aligns with the ethical research recommendations set forth by the ASAN (2021). As a clinical social worker, I have worked with individuals with developmental disabilities and chronic health conditions in various settings throughout my 14-year career. This experience makes me well suited and experienced in making accommodations to meet the needs of a population that is often misunderstood due to the communication differences associated with neurocognitive disabilities like ASD.

As a researcher who is most concerned with transformative politics and real systems change, I embedded my dissertation work into an ongoing project of Dr. Robin Gabriels from the University of Colorado. Dr. Gabriels is a renowned psychologist with a well-respected expertise in research and mental health treatment for individuals with ASD, so much so that she has literally written the book on it (Gabriels & Hill, 2002). I selected this approach due to the future triangulation prospects. Denzin (2010) outlines how triangulation between robust quantitative work, like that of Dr. Gabriels, can be enhanced when qualitative researchers, like me, can confirm and support the data. The use of multiple ways of knowing to explore a phenomenon can enhance our understanding and aligns with my ongoing pursuit to increase access to effective and affordable mental health care for all people.

Setting

Dr. Gabriels and her colleagues began piloting their THR program back in 2010 (R. Gabriels, personal communication, April 3, 2023). They first published on their 10-week THR program in 2012 and multiple peer-reviewed articles have been published on replications since

that time (Gabriels et al., 2012; Gabriels et al., 2015; Gabriels et al., 2018; Pan et al., 2019). These studies have explored the impact of THR on unique samples using physiological data, pre- and post-test assessment tools, and parental feedback. Prior to my project, there have not been attempts to interview or gather data directly from the participants themselves (R. Gabriels, personal communication, April 3, 2023).

Her current project, COMIRB 19-1962, is a multi-year, multi-site project that uses the same 10-week curriculum at an equine riding center (see Appendix D). This project consists of cohorts in Loveland, Colorado and Windham, Maine between 2020 and 2023, with a goal of recruiting 142 participants across both sites. Due to the timing and nature of this dissertation, I invited participants in the fall 2022 cohort from the Colorado site, a riding center in rural Colorado, to participate. The second site of Dr. Gabriels' study in Maine was not included in my study.

The 10-week curriculum (see Appendix D includes a trial THR group and a barn activity control group. Each week, the groups have the same selected theme with corresponding learning activities. In the THR group, these activities are completed on horseback, meanwhile the barn activity group completes their activities in a classroom setting. The instructors of both groups are familiar with ASD best practices and all material is presented in multiple ways for diverse learners. At the end of the 10 weeks, participants in the control group are allotted one free horseback riding session after the completion of the post-test activities.

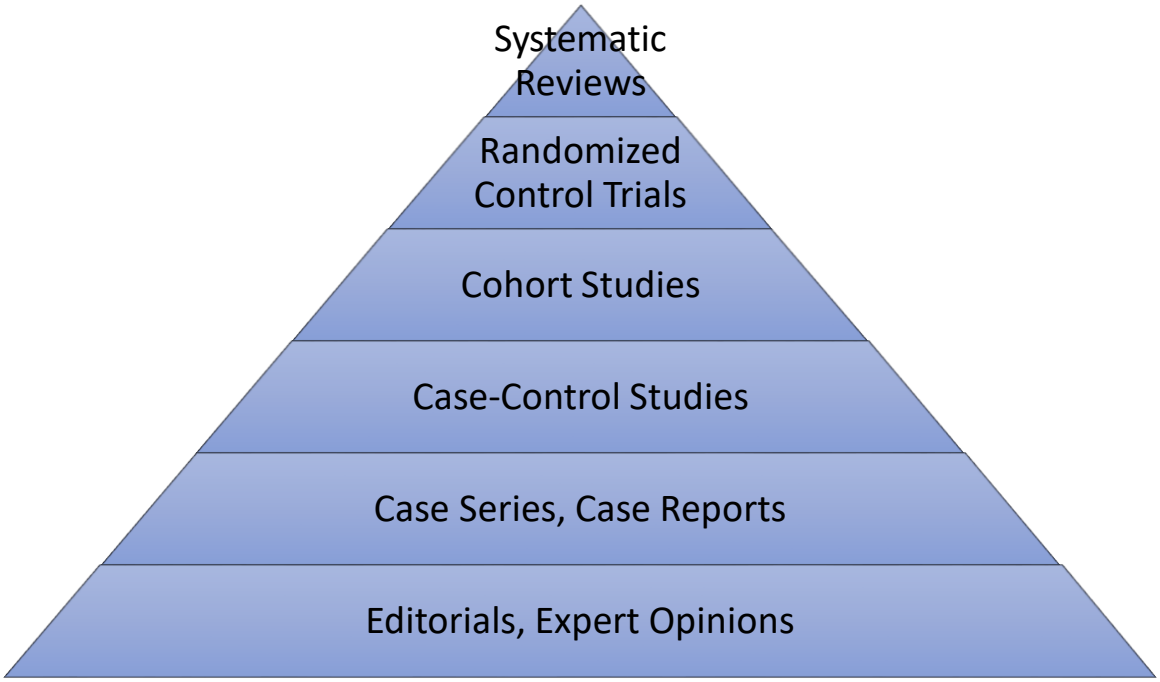
Sample

Inclusion criteria for participants was determined, initially, by Dr. Gabriels' study. For this larger study, all participants had to have a professional diagnosis of ASD, be between the ages of 6-16 years, have a nonverbal IQ above 40, have an English-speaking caregiver, and meet

criteria for an DSM-V mental health diagnosis. Dr. Gabriels' study did not include interviews with participants so I needed additional inclusion criteria to ensure participants could communicate with me in a meaningful way. The communication differences between individuals with ASD complicates identifying an appropriate age range for interviewing and, instead, emphasizes the individual's ability to use verbal language to engage in the interview process. Verbal capacity was screened by Dr. Gabriels using the 3rd module of the Autism Diagnostic Observation Schedule, second edition (ADOS-2) during the recruitment phase.

The ADOS-2 was selected as a screening tool for verbal capacity due to its long-standing validity and reliability, even with individuals who experience co-occurring mental health conditions (Maddox et al., 2017). In fact, it is often referred to as the "Gold Standard" in ASD diagnosis. As a master's level social worker, I understand the assessment, but I am not fully trained and certified to administer or interpret this instrument. As such, Dr. Gabriels conducted the screening and provided me with a list of eligible participants. The sharing of this information was covered in a data use agreement coordinated by my institution, Colorado State University, and Dr. Gabriels' institution, the University of Colorado.

According to Soydan and Palinkas (2014) randomized control trials, like Dr. Gabriels', are quite high on the evidence hierarchy (see Figure 4). This, again, emphasizes why her work was selected to embed my dissertation study. For an intervention to be considered an EBP, the quality and rigor of the evidence to support it is typically evaluated by professionals using this style of hierarchy.



Note. From Soydan and Palinkas (2014, p. 37)

Figure 4: Evidence Hierarchy

Since participants were recruited from a single cohort that fit my dissertation timeline, this project did have a convenience sample. A total of 6 youth participated in the fall cohort of 2022 and 4 of those youth met verbal communication criteria of Module 3 on the ADOS-2. From those 4 individuals, 3 youth between the ages of 6-16 agreed to participate in my study. I recruited 2 cis-gendered male participants and 1 cis-gendered female participant. For this manuscript, I have assigned pseudonyms to all participants. The 2 male participants, Adam and Brian, participated in the THR group, and the female, Carrie, participated in the barn activity control group.

Methods

Recruitment for this study was completed using a flyer (see Appendix E) that was distributed by Dr. Gabriels' team during participant's initial visits. Since the cohort was small, I was able to be on-site and spoke with children and caregivers directly during the recruitment

phase. I completed the formal consent process with all participants and their caregivers during the first week of the program. For children under the age of 13 an assent form (see Appendix F) was signed alongside the consent form for guardians and participants older than 13 years (see Appendix G). All tangible materials have been stored and will continue to be stored within accordance of the IRB protocol and I am the only individual with access to these materials.

Case studies provide a wealth of knowledge for the scientific community despite their limitations. As described by Flyvbjerg (2006), there is immense value in analyzing case studies and not just large groups. In fact, examining case studies can be helpful for theory development by testing hypotheses like Dr. Grandin's or uncovering extreme or paradigmatic cases.

My first research question, what are the experiences of people with ASD who engage in AAI, is exploratory in nature. I entered this project with an open mind, seeking to explore and understand what this experience was like for autistic youth. This question clearly dictated a need for a qualitative project that utilized semi-structured interviewing to gather lived experience. Semi-structured interviewing was the best choice for this qualitative project since it allowed for disability accommodations, such as adding a visual rating scale adapted from the Zones of Regulation to support participants in answering questions related to emotions (see Appendix I). These types of accommodations are also in line with directives from the ASAN (2021) that highlight the need for breaks, alternative communication, and the ability to have a support person available.

My second research question sought to understand *how* these experiences impact the lives of my participants, which suggested that a case study analysis would be a good fit (Yin, 2018). Yin (2018) also indicates that case studies are best suited for situations in which the experience is contemporary, and the researcher does not require control over the experience,

such as an experimental design would. My research questions and situation met all criteria outlined by Yin (2018) for the use of a case study method.

To incentivize recruitment, I offered a $10.00 gift card to participants after each interview. These gift cards were paid for with my own money and this project was not funded by any outside sources. Gift cards were either from Amazon or King Soopers, depending on the choice of the individual.

Data Collection

Using the multiple-case study procedure (Yin, 2018), I then designed my data collection protocol. Data were collected from participants by completing 2 in-person interviews. A 3rd additional interview was added for the Barn Activity participant after their one free horseback riding lesson to seek further input about their experience on the actual horse. These interviews were not conducted as a pre- and post-interview for the purposes of comparison. Instead, the multiple interviews serve to build rapport and familiarity while also serving as a means towards prolonged engagement, as described under Validity and Trustworthiness below.

The first set of interviews was conducted in a small office within the riding center facility. The office contained a desk, two small chairs, one computer chair with wheels, a side table, and many office decorations and supplies. The second set of interviews were completed at the north campus of Children's Hospital Colorado (CHCO). I obtained hospital credentialing and privileges in order to use their therapy rooms. The therapy room was more appropriate for interviewing given the absence of stimulating materials. In this room there was a table, four chairs, and a desk with a computer and phone. My final interview was completed in the riding center lounge. This room was a large space with couches and a conference table.

An interview guide (see Appendix H) was developed by me to elicit data collection that aligns with the guiding research questions. The interview guides consisted of only 4 broad questions. I committed to this short list of questions to ensure that children were not being asked to sit longer than 30 minutes for their interviews. The range of interview times were 33 minutes to 5 minutes and 35 seconds and the mean interview was 15 minutes.

Guidance from two sources *Learning to Interview in the Social Sciences* (Roulston, deMarrais, and Lewis, 2003) and *Qualitative Interviewing: The Art of Hearing Data* (Rubin & Rubin, 2012) provided me with insight about developing my interview guide and implementing best practices during the interview itself. I also relied upon my professional expertise in working with autistic children and utilizing motivational interviewing to adapt the questions. For the purposes of interviewing, participants were offered the option to interview one on one with me, or to have a caregiver or guardian present.

For the purposes of data collection, I utilized a combination of recording and note taking. Recording the interviews allowed me to focus during the interview itself and take notes on non-verbal communication (Weiss, 1995). Non-verbal communication is an important piece of data when interviewing people with ASD who may be communicating differently. The recordings of my interviews are securely stored on a password protected recording device and a backup of those recordings has also been stored digitally via my Microsoft One Drive account through Colorado State University. These will be retained and handled as per the IRB protocol as well.

In addition to the interviews, I employed prolonged engagement for internal validity by attending multiple sessions of both the trial and control groups in order to become part of the team. This allowed me to build a rapport between interviews while also accumulating observational opportunities and field notes. In addition to attending the free horseback riding

lesson for Carrie after the program completed, I attended sessions 1, 2, and 8 for the barn group and sessions 1 and 2 of the THR group. Field notes and observations were recorded by hand during the observations by me alone. Jottings during the interviews are included with each transcript (see Appendix A) and field notes (see Appendix C) from my observations are included as appendices. These notes serve as an additional layer of trustworthiness by helping to create the thick, rich data collection associated with qualitative research and by serving as part of my audit trail during coding and analysis. All data was transcribed, by hand, by me and the full transcripts of my interviews is available in Appendix B.

Coding

Given my previous experience with *The Coding Manual for Qualitative Researchers* by Saldana (2016), I utilized this text to create my coding scheme. Saldana suggests that eclectic coding is an appropriate approach to exploratory research, and this approach allowed me to choose coding methods that best answered my research question and trial some coding methods that resulted in inconclusive results. First cycle coding was completed line by line and remained as close to the data as possible by utilizing initial coding and in-vivo coding. I selected initial and in-vivo coding because this approach focuses heavily on the words used by the participants. The use of direct quotes helps with internal validity since I did not have a second coder. My codes were reviewed and audited by my advisor, Dr. Helen Holmquist-Johnson. Dr. Holmquist-Johnson is an expert in the application of human-animal bond and a qualitative researcher, supporting the decision to use her mentorship to confirm my analysis and interpretations.

I utilized a code book and code landscaping to help develop themes and immerse myself in the data gathered before entering second cycle coding. Code landscaping proved to be unhelpful, but the code book itself prepared me to transition to second cycle coding and can be

found in Appendix B. The data suggested that axial coding would be the best fit for my comparative analysis. Axial coding, according to Saldana (2016), focuses on recognizing patterns in the codes and categorizing my initial and in-vivo codes. This process of grouping codes allowed me to make comparisons between cases and make meaning of their experiences without distancing myself too much from their direct words and quotes.

Analysis Plan

After second cycle coding, analysis focused on relationships between the codes (Jaccard & Jacoby, 2010). During this period of analysis, I continued to remain open and flexible to ideas as they emerged from the children's words. First, analysis explored each individual case study and then analysis compared the set of cases to search for shared meaning (Yin, 2018). First cycle codes and field notes were used for the case analysis, while second cycle coding and a full review of all materials were used for the case comparison analysis.

My analysis searched for patterns or common themes shared between the 3 individuals interviewed for this study. I specifically employ the focusing strategy that Saldana calls the study's trinity (2016). This strategy looked for three major codes or themes that stood out to me in the data and then explored the meaning behind their interactions. As I processed the information, I engaged in some analytic memo writing. These were rough drafts of my thoughts and ideas that provide insight into what I was thinking as Chapters 4 and 5 developed. I also engaged in some verbal processing of these memos with my advisor, Dr. Holmquist-Johnson, which allowed me to further develop my ideas in a helpful manner. My unique learning style as a neurodivergent individual emphasizes my need for verbal processing, although an audit trail of these one-on-one sessions with my advisor is not available.

Validity and Trustworthiness

This study was approved by the Colorado State University IRB under protocol #3500. An essential feature of all research projects is the rigor and validity of data collected. For a qualitative research project, trustworthiness is a concept that replaces the positivist approach to rigor (Morse, 2015). As such, credibility, transferability, dependability, and confirmability are embedded within each phase of this dissertation project.

Credibility is the internal validity of the qualitative project (Morse, 2015). To achieve credibility for this project, I employed the use of prolonged engagement and persistent observation. Fieldnotes and observations of the participants engaging with the program help to validate the data collected during interviews with participants. Morse (2015) recommends the use of a negative case analysis for the purposes of credibility. This project does examine the experiences of three very different young people and includes participants from both the trial and control groups. The comparison between the participants in the trial THR program and the control barn group allowed me to better understand the differences and any unique experiences associated between these experiences.

Additionally, credibility can be created using member checking. While some authors highly recommend this method for qualitative researchers (Cho & Trent, 2006), others have been critical of this practice (Morse, 2015). Morse (2015) has called the use of member checking to be impractical with regards to checking the completed analysis. To balance these opposing opinions, this project incorporated process member checking during the interview processes itself but did not incorporate member checking for the final analysis. This was completed by using a visual (see Appendix I) to confirm emotional vocabulary, asking interviewees to confirm

previously stated information from past interviews, and rephrasing statements made by participants during the interview process to allow for confirmation of researcher comprehension.

General rules of validity within qualitative research also ensure a trustworthy analysis. Self-reflexivity (Cho & Trent, 2006) and consistency of epistemology, methodology, and methods (Carter & Little, 2007) were the two primary ways in which this is accomplished for this project. I was constantly referring to CDT and checking to make sure each decision aligns with the selected theory that guided my work and was not based on any bias that may be embedded within my own lived experience and point of view.

Chapter 4: Results

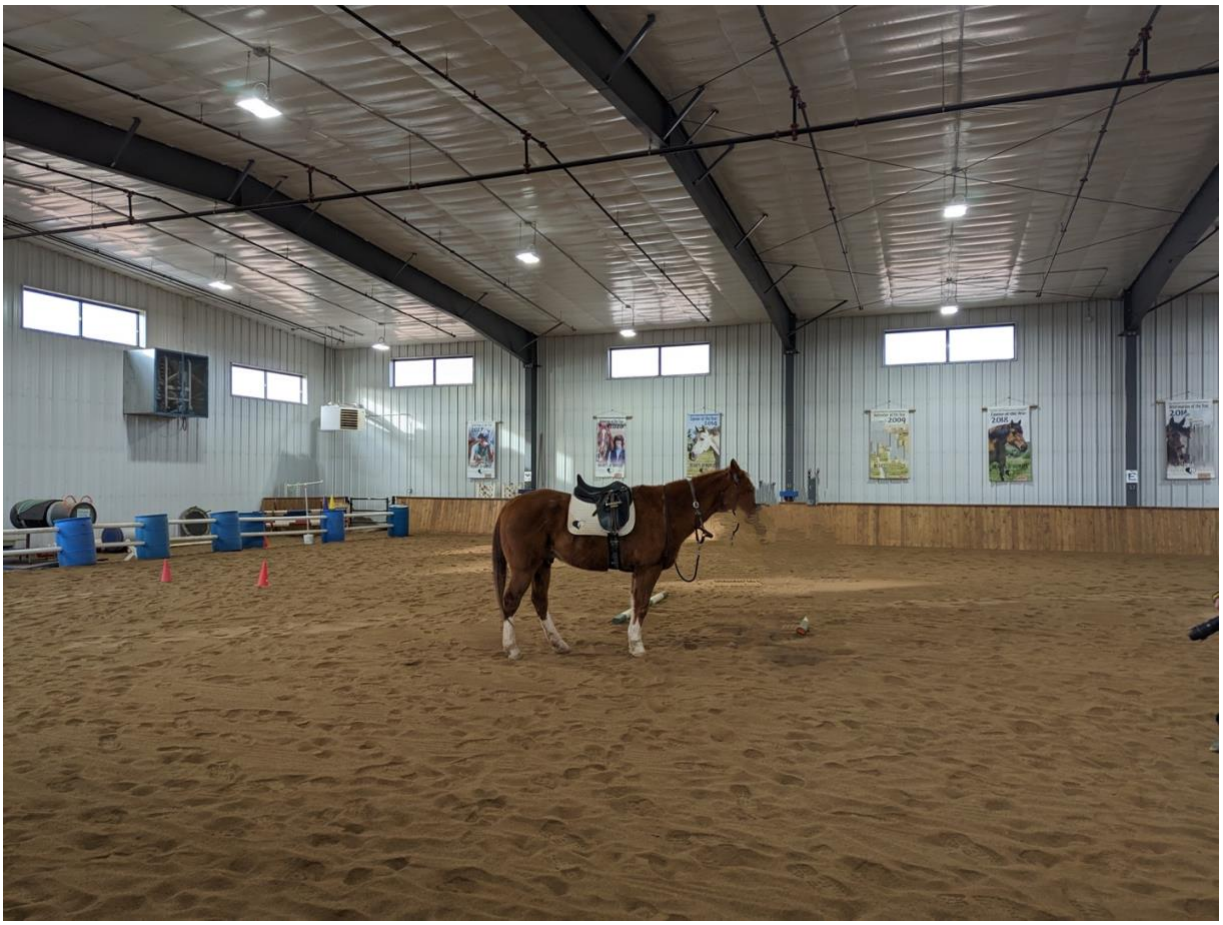
The intervention participants whose experiences I am studying took place at a therapeutic riding center in rural, Colorado from October 2022 through December 2022. This location is approximately 80 minutes outside of the Denver metro area and 30 minutes from the Fort Collins area. The drive includes navigating infrequently driven, unnamed country roads, surrounded by farmlands and small towns once exiting the highway. Long stretches of fields with snowcapped mountains in the background, sets the stage for the world I am about to enter.

Upon arriving at the riding center, the smell of the stables greets guests with the musky odor of mud and manure. The facility itself is a bright and friendly space. The barn group took place on Tuesday evenings at 4pm, while the THR group met on Wednesdays at 3pm. This time of year, the skies were darkening by the time these groups had ended and eventually darkness covered the rural landscape as we all went our separate ways across the Colorado front range.

Both groups were scheduled for an hour and included 45 minutes of direct engagement with the curriculum. This was monitored using timers and documenting the time in which riders mounted their horses. The groups were comprised of 3 children and their caregivers sat in their own lounge area with a one-way mirror that overlooked the riding arena. The lounge area was a comfortable room with couches and a long table. Unlike the chilly arena where horses trotted with children on their backs, this room was heated and a welcomed retreat from the brisk winter air.

The program itself was rather resource intensive. For example, the THR group included a lead riding instructor, an adult leading each horse, and 1 to 2 volunteers walking alongside the participants for safety and support. The arena in which horseback riding took place was an oval shaped, dirt covered, indoor space (Photo 1). The barn group included similar staffing ratios with

one lead instructor and three additional adult volunteers assigned to assist each participant individually. It took place inside of a large community room with windows that looked out over the arena area. Some weeks we could see another group riding horses through those windows during the barn group instruction.



Note. Photo has been edited to remove staff standing near the horse for privacy.

Figure 5: Riding Center Arena

Adam

Adam was a 6-year-old, cisgender male who engaged in the THR trial group. Data collected from Adam were limited due to his communication skills and impulse control. He just made the cut-off for the Module 3 on the ADOS and was difficult to understand at times,

especially during the second interview when he had to wear a mask for the duration of the visit due to COVID-19 protocols at the location.

Adam was a short, heavy set, smiley young man with an infectious laugh. Throughout our interviews, Adam would become playful and requested to switch roles with me, which I interpreted as a playful assertion of control over the situation. This type of role playing was developmentally appropriate for a 6-year-old child. Adam was distracted easily and required redirection on several occasions. His first interview was completed at the riding center and without his guardian present, per his request. During this interview, Adam struggled with distractions throughout the room.

His second interview was completed at Children's Hospital Colorado in a therapy room, this time he requested that his mother join him. During this interview, Adam was less distracted and more focused. He had stayed home from school that day due to an elevated temperature that morning. We met at 2pm and he reported feeling much better. We all wore masks due to hospital policy and I found it difficult to understand his words at times. Adam's first interview was 14 minutes and 3 second, while his second interview was just shy of 8 minutes. Despite these short interviews, Adam was still able to provide me with some insight into his experiences.

During Adam's first interview he shared that "I'm big happy" about being in the THR program. Adam was given space to dance and jump as further expressions of his happiness. We used the Zones of Regulation visual prompt (see Addendum I), to confirm those emotions. I was unable to get more information from Adam about why he was happy or what it meant to him due to the limitations of this interview stated previously. Adam identified that his feelings about the THR program were in the green zone, which refers to the energy level associated with the feeling. The green zone is associated with calmness, readiness, and control over one's own body.

I asked if his happy feeling was ever in the yellow zone, which would imply a low level of excitement and more energy than the green zone. His response was "mostly green" in response to my clarifying probe.

Most notably, in his second interview Adam boasted that "the horse listened to me". He shared this statement in response to my praise about him completing the program. Adam was able to share with me all the verbal commands he had learned to use for communicating with his horse. After asking about his experience in different ways, it was clear that the horse listening was Adam's favorite part of this experience. Using the Zones of Regulation, he again confirmed that being on the actual horse was in the green zone and he felt "happy" up there. Using process member checking, I asked Adam about the height of the horse and how it felt being up high as an attempt to confirm the experience another participant had reported. His emotions were articulated well in the following quote:

Researcher: Were you scared and happy at the same time?

Adam: Yea, scared.

Researcher: What was scary?

Adam: The up high.

Researcher: Being up high? What made you happy about it?

Adam: When Hope was listening.

Despite Adam's green zone feelings about his horse in the program, he reported feeling "happy" about the program being over. He is looking forward to having more time to enjoy his hobbies, playing video games and watching television.

Brian

Brian was a highly verbal and articulate young man. He presented with confidence around adults, despite being just 12 years old at the time of the final interview. During our first interview, Brian shared

> *I went in with low expectations and at first it was hard because it felt like they were, uh, babying me but, uh, that was just for the first part and once I got that over with by basically telling them to be quiet, everything went great!*

I happened to be observing his riding session on the day of his interview and saw, first-hand, how Brian interacted with the adults and requested less directives from them. Brian was insightful regarding how his interactions with the animals and the adults impacted his experience. He expressed a clear interest in removing the adult interactions and focusing solely on his relationship with his horse, Lucy.

> *Brian: I mean, the worst part of it is the people. Why can't they just let us ride, like, down a scenic path? You know?*
>
> *Researcher: I can appreciate that. So if you could, you would get rid of all the humans?*
>
> *Brian: Mmhm, yea.*
>
> *Researcher: And just you and the horse?*
>
> *Brian: Yea.*

Brian reflected on why this may have been his experience. He highlighted that feeling babied impacted his relationship with the adults running the program because he felt he was "a very fast learner". His confidence in his abilities appeared to be grandiose in some ways as the following quote demonstrates:

So, I've got all the things I need to ride. You know? Um, and, so like the babying me. First off, they think I know nothing, which is kind of true, but not that really. Also, just the way they act towards me is kind of baby-ish, you get what I mean? . . . 'Cause they're volunteers, they're not really specialized in autism. So they, so they don't understand, mmm, like, they don't understand my need for like times, you get what I mean?

In this quote we see that Brian is acknowledging that he doesn't know everything, but he feels misunderstood by the adults around him in this setting. Brian goes on to explain that it isn't necessarily his disability that causes adults to "baby" him, but age.

Researcher: So, in general, kids should be listened to more?

Brian: Yes, I think that as well.

Brian had learned about the THR study through his mother, but she did not attend either of his interviews. In fact, Brian shared that he initially wanted her to join him, but she encouraged him to engage independently. Brian had previously ridden a horse on vacation and reported that it was relaxing. This influenced his personal goal for THR, he was hoping that this experience would allow him to have that same feeling again. In his second interview, Brian shared that the experience on the horse was "pretty great" and "calm". His description of the experience is as follows:

Have you ever, uh, ridden on a roller coaster? Like a slow rollercoaster, you know? So imagine a rollercoaster that's walking forward slowly and it tilts back and forth. Back and forth. Back and forth. Back and forth . . . That's how it felt.

Brian goes on to describe how secure and safe he felt up on the horse itself. Despite having a fear of heights in some situations, he reported that "you feel very balanced" when in the saddle.

Brian's first interview was 14 minutes and 20 seconds. He wanted to talk with me about his favorite video games and his intention to get through the questions so he could focus on his preferred interest was clear. Brian's second interview was 16 minutes and 44 seconds and demonstrated the concrete and rigid nature of his thinking. For example, Brian's comparison of interventions focused on the number of people involved. He shared that he felt therapy was defined by talking and was unable to make a connection to the intervention and its therapeutic benefits. Below Brian describes his thoughts on the "learning activities" of THR compared to other therapies he has engaged in previously:

Brian: Uh, it was more of like a learning activities than actual… actual… you get what a mean?

Researcher: It wasn't, like, direct therapy?

Brian: No it was just learning how to horseback ride and doing it.

Researcher: Yea

Brian: But it just had therapeutic measures.

Researcher: Yea

Brian: But it wasn't like special. You know what I mean?

What stood out to me about Brian's transcripts was his use of impressive vocabulary and his understanding of self. For example, he used the word aeroacrophobia to describe his fear of unsecured heights. Having never heard of that word, I asked him to clarify. This highlights some of the difficulties and differences in communication we experienced during our interview. Brian's ability to describe his experience to me was impacted by his use of vocabulary that is not typical common vernacular. This was also a clear strength of Brian's, as he was able to give me descriptive responses to help me understand his experience. He shared that he had attended

several difference therapies in his short life; reporting attending 3 different individual mental health providers, a social skills group, occupational therapy, and speech therapy prior to attending the THR program. Given this exposure to many therapies it was not surprising that Brian was able to describe his internal experiences with such detail.

Brian expressed a belief that the experience was best suited for those who might feel shy. He explains, "Like, I just like, if you were shy it would help . . . Yea I think it would because it always listens". While Brian would not use the word "shy" to describe himself, he did report identifying as an individual who struggles to make friends. He did not have those same struggles developing a relationship with his horse, Lucy, though.

Researcher: It's just like making new friends when you move, huh?

Brian: Except I'm not very good at that. So, cause I hate making new friends.

Researcher: But it was easier to make friends with Lucy that human friends?

Brian: Yes. Cause the friends I want, listen. My best friend, well, is my best friend because I'm super inflexible. My best friend is basically like the most flexible you can get.

I initially thought that this meant his rigidity was a means to assert control, but I stood corrected.

It's not control in my relationships . . . because I don't command, you know? . . . Like I'm worse to people because why should I be flexible to you even if I don't know you. You've never done anything, you know?

What Brian is describing hints at the concept of masking. This term is used by the community to refer to the amount of thought and effort it takes for autistic folx to meet social expectations. Essentially, Brian is pointing out that it does not feel worth his cognitive efforts and possible exhaustion to be flexible until he gets to know them. The consequence? As Brian puts it, "sometimes they don't wanna be my friends because they don't know that I'll become" flexible.

A result in which Brian appeared comfortable accepting from a behavior that many adults have likely encouraged him to change.

Carrie

Carrie attended the barn group that included 10 weeks of classroom learning, followed by one horseback riding lesson. She was a soft spoken, 16-year-old who often avoided eye contact with me during our meetings. She stared intensely at her lap, occasionally glancing up when talking. Carrie was recently diagnosed with autism and reported that this was her first time attending a program that was specifically designed to support autistic folx. Carrie was a mature and responsible young lady. She reported making dinner for her family in the evenings, after attending the program, and volunteering at her church to help care for younger children in their congregation.

Carrie brought her grandmother with her to the first two interviews for support. Her first interview was 33 minutes and 20 seconds, while her second interview was 14 minutes and 46 seconds. During her third interview, her mother and grandmother sat in the room, but sat across the room and allowed her space to speak independently. This final interview was much shorter, at 5 minutes and 35 seconds, given that Carrie had already given me feedback on her experience in the program and our conversation focused on her one riding lesson that I had just observed.

At times, during Carrie's interviews, her grandmother would interrupt to report that she was being withholding. This would typically prompt her grandmother the ask permission to share information from their conversations about the negative side of this experience. For example, I asked Carrie if she would consider participating in a program like this in the future and she replied, "I don't know, maybe, maybe not". Her grandmother reported a confident "no" and explained that she thought her granddaughter was "just being polite".

During Carrie's interviews she expressed feeling like the activities were not individualized to her abilities.

Grandmother: She hasn't felt real comfortable in the class yet because levels are different and, um, it's made her feel dumb

Researcher: Oh?

Carrie: I wouldn't say dumb, more like mmmm childish

Her grandmother helped her explain to me that they advocated for more challenging learning activities be created for Carrie.

Researcher: And did that feeling go away?

Carrie: Well yea, 'cause, actually, like as it kept going it seemed like it went by pretty fast. You know?

Researcher: Yea. The ten weeks was all of a sudden done.

Carrie: Yea

Grandmother: What did [the teacher] do for you?

Carrie: Well made things more… by leveling it, like tried to find things that I would enjoy more and, like, make things harder for me.

It was clear the individualization of learning activities and materials was essential to Carrie's comfort and the development of a trusting relationship with the riding center staff.

Carrie found it difficult to engage with groups of any kind. While she preferred small groups, she still felt that she did not belong with the peers in her group. It was true, in fact, that she was paired with two young men who were very different from herself. They were younger and had noticeably different use of verbal speech than Carrie.

Grandmother: My daughter had been told, you know, that this was going to be a social opportunity for her to be matched with, um, kids her own age and abilities and, so, her mom signed her up, hoping that she's make a new friend out of this. So… you know.

Researcher: Would you agree with that? Was that a little disappointing? Cause I know you said you liked the smaller group, but would you have preferred if the small group had more in common with you?

Carrie: Yea probably. Like have more in common, that would have been better. Yea

However, this was not the only place that Carrie felt different. According to her interview, Carrie has had several experiences in which she felt embarrassed that her differences were noticed. In the past, Carrie felt less capable than typically developing peers in recreational activities such as ice-skating lessons.

Grandmother: And we talked today, earlier, about, you know, how when you did your figure skating, that was hard but she persevered, you know. With trials and tribulations because she had a sort of singled her out to everyone that she was different.

Researcher: Oh?

Grandmother: It was terrible.

Carrie: Cause like, I didn't pass. All of the people did, so….

Grandmother: She made sure to tell her in front of everyone at the beginning of the class that she was the only one who didn't pass.

The THR program contrasted with this previous experience; Carrie reported feeling that some of the activities felt "childish" for her skill level.

The caregivers for Carrie encouraged her to try new experiences and work through negative emotions to become more flexible.

Carrie: Well my mom wanted me to try it.

Researcher: . . . Why do you think she chose horseback riding for you?

Carrie: Because, uh, well she knows that I'm nervous about horses.

Researcher: Oh?

Carrie: Like, probably so that I could be more comfortable.

This was also evident in my observations of her determination to follow through and ride the horse, despite her ongoing anxiety about the task. I came back to the riding center to watch Carrie's free horse-riding lesson and when I arrived, Carrie reported that she was still nervous. In fact, she became quite tearful once it was time to get on the horse. The adults that Carrie had bonded with over the past 10 weeks supported her in gradually overcoming her fears and, in the end, she did get on a horse. Tears continued to stream down her face, and she avoided making eye contact with her family and slowly trotted around the arena for the first time. Despite having significant anxiety about getting on a horse, Carrie persevered due to her desire to try new things and please her adult caregivers.

The experience of being in the program changed for Carrie over time. She reported it got better but did not resolve her nervous feelings before mounting the horse for the first time. After observing Carrie ride, I had the opportunity to interview her again and she shared, "well I was like, pretty nervous at first, but then I started to get more comfortable, like, you know?". Regarding what it felt like to be on the horse, she reported "kind of this rocking motion . . . like side to side, kind of like a rocking horse or something". She found the experience to be somewhat comforting and soothing once she got going and felt the motion of the animal.

Although the experience "wasn't quite as bad as thought it would be", Carrie was glad when the riding was over. She reported that she preferred classroom learning to having to face her fear directly like she did in that final riding lesson.

Researcher: Which did you prefer, learning in the classroom or practicing it on the horse?

Carrie: I don't know, maybe the classroom. I have no idea.

Researcher: What was your favorite part about the classroom?

Carrie: I don't know, I guess it, maybe, was like, more comfortable at first. Versus a horse, an actual horse.

In addition to the anxiety producing experience being behind her, Carrie was relieved to no longer be busy. After attending her homeschooling co-op and then the riding center on Tuesdays, Carrie would return home to cook dinner for her family. When asked how she felt about the program being over Carrie reported:

Well, I mean, I guess I'm kind of okay. I didn't really like the busyness that much. So like, Tuesdays were really busy for me. 'Cause I go to my, my um, homeschool program on Tuesdays. And so, like, . . . right after that we would have to go to [the riding center] and sometimes . . . I would get carsick.

Comparative Analysis

Second cycle coding involved the use of axial and process coding. While axial coding proved to be useful, the application of process coding showed minimal shared experiences of the processes involved in engaging with therapeutic horseback riding (THR). Each participant engaged in a different process of referral, shared different personal goals for participating, and shared differing experiences of riding the horse itself. On the other hand, axial coding provided

me with insight into shared internal experiences and emotions. Categories that began to emerge and were shared by all participants included two major themes: the importance of individualization and voice. A third theme around experiencing difference was shared by two of the three participants and I felt it was important to include this theme in my final analysis as well.

All the participants also shared that they were happy the program was over. This was not because they did not like the program itself, but because they were happy to get their free time back. This is an important experience to consider. All participants had significant travel time to get to the riding center that required an early pick-up from school each week. One participant drove over 90 minutes to get to the location in rural Colorado. Another participant had to go home and cook dinner for their siblings after attending the evening class, making the day quite long at times. I also noted that the location was potentially difficulty to reach. There are limited public transportation options for this area and the unnamed country roads were difficult to navigate for an individual who is not familiar with the area.

During the second interview session, all three participants were able to share what they had learned about the horses and stressed the importance of having their individual needs heard and met. In the barn group, these needs were met by the staff and volunteers who individualized activities for the participant. Carrie had expressed to her grandmother that she was feeling like the group was childish at first, but accommodations were made to make her feel more included. For example, the day that I observed Carrie's group she was given a different learning activity than her peers who were dressing up paper dolls. In the THR group, these needs were met by the horse itself as described by Brian below.

Brian: It's just… because the horse is calm, then I get calm. I guess it feels nice to have somebody who actually listened to me, like, fully. You know?

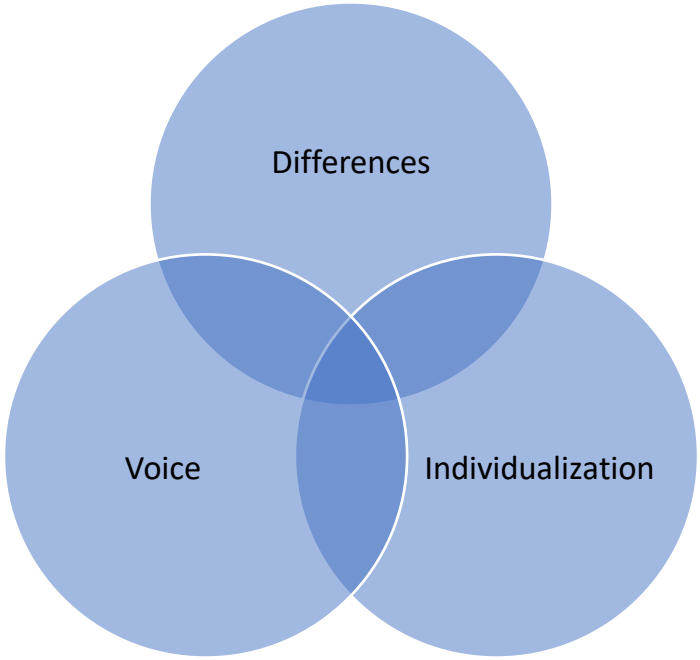
Researcher: Tell me more about that.

Brian: I final… 'cause as a child nobody really listens to me.

Researcher: You told me a lot about that, yea.

Brian: A horse does. Undeniably.

Using the concept of a study trinity (see Figure 6), I began to explore the codes in an interconnected way. Voice, difference, and individualization overlap and interact in the study trinity. To individualize programming, we must listen to those who are the consumers of these programs and give them space to use voice. If researchers and clinicians do not make the space to listen, then we are limited in our ability to truly individualize programming to the unique individuals we set out to serve. Whereas agism and ablism, in other words the differences the participants experienced, both appear to impact these participants' ability to fill that need. As Brian's quote above implies, he felt as though no one was listening to him because of his age. Comparatively, Carrie's experience was heavily influenced by her having more advanced abilities than her peers. As outsiders, we are unaware of what differences are most important to these children, hence the interaction between voice and difference may regulate a provider's ability to individualize accordingly. Brian and Carrie expressed different needs, but the desire to be heard was universal.



Note. Overlapping themes indicate interactions between difference, voice, and individualization.

Figure 6: Study Trinity

Chapter 5: Conclusions

Saldana's application of the trinity in his coding manual (2016), suggests that the trinity can clarify the interaction between the micro, mezzo, and macro worlds. This is the perfect place to start my final chapter, given that social workers are professionals who consider and work within all three of these system levels. I see the category of difference being an internal experience on the micro level that is impacted by the mezzo in which smaller systems are well positioned to hear voice and individualize programming. When voice is heard, the community is then well positioned to engage in macro level advocacy efforts and implement real system's change.

In the spirit of critical disability theory (CDT) and qualitative best practices, it is important to reflect on my own identity during all phases of this project. My analysis of the data is influenced by my own personal experiences as a neurodivergent woman and my professional experiences as a clinical social worker who provides mental health treatment to autistic children.

Differences

Only two of the three participants shared their awareness of differences, but their feedback was of utmost importance for this analysis. Brian and Carrie both felt uncomfortable with how they differed from others in group. Both described a feeling of babying or childishness during their first session. Brian was confident enough to self-advocate by "telling them to be quiet", with 'them' referring to the adults running the program. Meanwhile, Carrie advocated for herself by talking with a trusted adult, her grandmother, and receiving assistance in talking with the staff members about changing their approach. This experience of difference was navigated by using voice in different ways to effectively be heard.

These experiences are in line with the ASAN (2021) white paper I utilized to guide my work. In the executive summary of this paper, the ASAN highlights how encouraging autistic folx to hide their differences has been linked to increases in the severity of mental health conditions. This can also explain why individuals with ASD are more likely to require higher levels of care, such as hospitalization (Opar, 2017). Perhaps part of what makes the human-animal bond so meaningful for this community is simply freedom to be oneself. If masking or hiding your differences increase mental health severity, it stands to argue that having an opportunity to be your authentic self, in a nonjudgmental space can have positive impacts. Further exploration of this theme through future research is needed to confirm and fully comprehend how therapeutic riding, and a child's relationship with the horse may encourage the opportunity to be their authentic self and in turn impact their wellbeing.

Another distinct difference observed in how the children experienced the programming was gender. Carrie was the only female in the group and truly embodied feminine stereotypes, such as being polite. Studies have shown that women experience neurodiversity much differently than their male and non-binary counterparts (Hull, et al., 2020). Autistic women have historically been misdiagnosed due to their ability and tendency to mask their autistic symptoms (Lai, et al., 2017). The act of masking has been directly linked to increased mental and cognitive stress (ASAN, 2021). Using my own professional experience, I can confirm observationally seeing this trend in the community as well, with neurodivergent women commonly being described as over emotional and misdiagnosed with bipolar disorder or personality disorders. As our understanding of neurodivergence grows, more and more women are being identified, sometimes much later in life than their male counterparts.

This later diagnosis is an essential part of women's experience with disability. Bargiela, Steward, and Mandy (2016) gathered qualitative data from women with late diagnoses. These women shared their emotional journeys to understand themselves after receiving messages throughout most of their lives that they were not autistic and that their struggles were internal. For Carrie, this can be seen in her experiences with figure skating class with neurotypical women and her experiences in the THR program with autistic men. Her experience with disability is unique to her as an individual but is also influenced by gender differences.

Voice

All three participants shared their thoughts about being listened to in different ways. First, I explored voice as a variable that impacted the feeling of difference. For Brian and Carrie, they advocated in different ways but with the same motivation. For Carrie, the use of individualization made her feel heard by the adults and eventually led to a feeling of comfort. Brian, on the other hand, wanted the adults to interact with him less, giving him additional time to bond with his horse. For both Adam and Brian, the horse 'listening' was a highlight of this experience. Feeling heard and seen can be incredibly powerful, but the voice of autistic folx has been completely absent in prior literature, a critical gap identified in earlier chapters. Opsal and colleagues (2016), believed that qualitative work and semi structured interviewing had the potential to be a cathartic experience because of the need, for all people, to be heard. It is possible that the experience of being interviewed gave these participants an opportunity to be heard and tell their own story of their experiences with this AAI.

I refer, again, to the ASAN (2021) white paper and how this evidence connects with the literature. ASAN emphasizes the importance of allowing autistic folx to use their voice to identify what they do and do not like about any given intervention. In my literature review, only

four studies used participant driven goals. Setting individualized, personal goals is another way in which clinicians and researchers can give individuals with ASD a voice (ASAN, 2021), yet this practice is absent from a majority of studies involving this population. When voice is represented in this community, however, it is overwhelmingly representative of white, cisgendered men with level 1 ASD. I made a specific choice in writing this manuscript to ensure that all three young people's voices were evenly distributed. Brian's strength of high verbal abilities and articulation meant a rich source of data and he easily could have dominated the narrative if I did not make conscious choices to balance his voice with Adam and Carrie's.

The differences that Carrie experienced when using her voice were, again, influenced by the construct of gender and supported in the literature. Carrie's timid nature and politeness impeded her ability to use voice independently. Her voice tended to be bolstered and supported by her grandmother in our interviews and in the program itself. Other autistic women have expressed difficulties in being assertive and shared that this was not something that came naturally to them (Bargiela et al., 2016). In fact, women often receive messaging to take up less space in this world and avoid conflict. When we examine these power constructs of masculine messaging and oppressive practices towards women it creates the multidimensional experience of disability that is a core tenet of CDT and helps us better understand Carrie's experience using her voice.

Individualization

The interviews and my observations stress the importance of individualization for this community. Not one child in this study had the exact same experience or needs within the program, highlighting that multidimensional tenet of CDT yet again. This is not unusual for the autistic community, given that it is referred to as a spectrum for this reason. The use of

individualization allowed participants to interact with learning materials in ways that made sense to their learning style and developmental age. The practice of lumping all children with ASD together is common but does not necessarily mean that all needs are being met. Leaving the lingering question of how can we adapt programming to better meet the needs of these young people?

Individualization cannot take place without voice, but each child in this study used voice is a very different way. One way to adapt future research endeavors to include voice is through goal setting. Researchers should consider meeting with children individually and with caregivers, using clinical judgement and rationale to explore what setting the child feels most comfortable using their voice. Adam, for example, used his voice in similar ways with and without his mother present. However, his impulse control was better displayed with her present and I would not have been able to evaluate this without interviewing him in both situations. The ASAN recommends researchers consider using participatory action research to ensure autistic voice is embedded into research. Involving the community in developing research projects and the direction of research is another way we can adapt our practices in an equitable manner.

While individualization is essential for learning, it also has implications for the other two themes. Individualization can allow a child to feel heard, but also requires children feeling empowered enough to speak up and use their voice. The use of individualization may have positive and negative effects on the feeling of difference; by either shedding light on the difference or helping to fill in gaps that may be causing difference. As adults, we serve an important role in making sure that the use of individualization doesn't segregate, separate, or embarrass the individual receiving the accommodation. This is, again, another form of the dilemma of difference at play in the lives of people with disabilities.

Challenges

The happiness that the children expressed about the program being over helps to highlight one of my biggest critiques of THR and other equine-assisted therapy programs. It is certainly less common to see stables close to urban centers, making this treatment model inaccessible for some families. It requires availability of an adult during daytime hours and access to reliable personal transportation. In fact, a previously published study on this program showed an average commute of 28.9 miles with a standard deviation of 18.9 miles for participants in this earlier cohort (Gabriels et al., 2015). A follow-up study published by Gabriels and her team in 2018 showed that the participants who did not complete their 6-month follow-up assessment correlated with an increase in travel distance. Carrie shared that she would sometimes feel carsick on the way to the riding center, highlighting that other medical issues could also complicate access for some individuals. As we uncover the efficacy of THR, we also need to consider the feasibility and gatekeeping associated with this treatment model. The Grand Challenge of achieving equal opportunity and justice in social work stresses the importance of dismantling inequities in our healthcare systems. If THR is to become an EBP, society must consider ways to ensure access is not impacted by socioeconomic status and the factors described above.

In addition to gatekeeping, the children feeling happy about regaining control over their afternoons is another way in which power is experienced by these young people. All the children were looking forward to enjoying their preferred activities and hobbies. Brian, for example, had engaged in so many therapies during his short life. I am unable to fully understand the meaning and impact of this, but it begs the question of how much power and voice has Brian been given in selecting these treatments? Brian was the only child to express clear appreciation for his

differences and I do believe that this is, in part, due to his access to therapy early in life. This is a reminder that adults do have a responsibility to hear children, but also encourage healthy habits. It is also a reminder that is it our responsibility, as professionals, to ensure that therapy for targeted populations is enjoyable and inviting.

Implications

The results of this study continue the dilemma of difference debate. For one of the children interviewed, it was clear that being autistic was part of his identity. He enjoyed participating in a group that was specifically designed for children with ASD, but also stressed the importance of being treated with respect regardless of age. Meanwhile, for another participant this experience was uncomfortable at times. Finding a place to 'fit in' is not as simple as grouping all individuals with ASD together. The multidimensional experience of disability associated with the selected theory, critical disability theory (CDT), plays an important role here. While many of the participants had similarities, their differences were just as noticeable in this space that was intended for the population.

The results of this study also serve as an important reminder of an important piece of mental healthcare: authentic relationships. Humanistic approaches to mental healthcare involve the Rogerian concept of unconditional positive regard and presence. It was clear from the interviews that these participants had difficulty finding that in the community. At the very least, the therapeutic riding center served as a safe space to receive unconditional positive regard, and for some, this may occur within the relationship formation between human and animal. This serves as a reminder that, as adults, we must work to embed this into our interactions with youth, whenever possible.

Arguably, there are times that adults must control situations. For example, when safety matters are an issue, adults certainly should step in and instruct. However, the participants in this study highlighted the importance of interdependence through the life span a concept that is also supported by life course perspective (Hutchinson, 2019). The act of not hearing a child or questioning their lived experience and knowledge is an epistemological issue (Murris, 2013). It puts the power to create and share knowledge firmly in the hands of able-bodied adults, when we know that every individual has something to offer, even young children and people with disabilities have expertise due to their different lived experiences. Murris (2013) suggests that the imagination and playfulness associated with childhood may be one of the barriers that prevents adults from trusting children's perspectives and contributions, highlighting that what is different about us continues to reinforce our distance and disconnection.

Additionally, case studies can provide excellent insight into theory development. Dr. Grandin's hypothesis, mentioned in Chapter 1, focused on the experience of the frontal lobe. The frontal lobe is responsible for communication and executive functioning. While these case studies do not confirm the that the frontal lobe itself is playing a role, communication was absolutely highlighted by the participants. How dependent this is on age versus disability remains unknown, but I certainly believe that Dr. Grandin's hypothesis continues to hold weight with the caveat that all autistic folx do not have to have the experience. Dr. Grandin's experience is real, Carrie's experience is real, Adam's experience is real, Brian's experience is real, and my experience is real, regardless of our differences.

Self-Reflection

There are several lessons learned from this experience that I look forward to improving on in the future. For example, transcribing my own interviews allowed me to critique my own

interview methods, but was extremely time consuming. I noted times that I felt my engagement in the interview felt more clinical than academic, highlighting the strengths and weaknesses of having a clinical background. It was difficult to turn off the person-centered approach I have towards children, which relies deeply on unconditional positive regard and validation.

I also missed opportunities to follow up on interesting codes that, perhaps, could have had real meaning. In the future, I would recommend additional follow-up interviews when working with autistic children. This would allow for additional process member checking between participants, allowing me to adjust my line of questioning as well. It would also allow me to go back and ask more follow up questions after initial coding is completed. I still have many questions that I believe Carrie, Brian, and Adam would have insight into, if given the opportunity. The need for shorter and more frequent interviewing will certainly influence further research I conduct in this area.

At the end of the day, our understanding of the human-animal bond and our understanding of the neurodivergent experience is still underdeveloped. Carrie believed that everyone has their own experience, depending on their differences. At 16 years of age, she already has a solid grasp of standpoint theory and I completely agree. Being autistic does not automatically mean you have a connection to animals as Dr. Grandin described. We are also cautioned to not be so toxically positive about the experience of ASD that we exclude how some may interact with their differences. As an autistic academic, Sonia Loftis, writes in *Manifestos for the Future of Critical Disability Studies*, "autism is still a condition I have, and it is a condition that causes significant pain" (2019, p.23). CDT also confirms this statement through the multidimensional experience of disability and the 'dilemma of difference' embedded within the tenet of valuing diversity. Sometimes differences matter, and sometimes differences make us

feel isolated. Even in this small sample, we can see how varied the experience and impact is when a human being experiences difference and I caution any ally to assume otherwise.

The biggest lesson I have learned is that all people, regardless of age and ability, want to be heard and accepted. They want their experience to be validated and not questioned. Therefore, my clinical orientation continues to be humanistic and my approach to research will continue to be qualitative. I gave three children a platform to be heard and that feels important, that feels empowering, and that is the impact I envision my work having. To quote Dr. Loftis a final time, "We have autistic children to save. It is going to be a long and hard road. Neurodiversity movement . . . put your shoes on" (2019, p.27).

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Appendix A

Adam
Interview 1 Jottings

After the interview MOC confirmed that pt has engaged in other therapies before but it was difficult to get him to attend if he did not like the person providing the services. She reported that she thought this would be a good experience because R had seen horses at a neighbors and always seemed excited to go to the fence to say hello.

Adam
Interview # 2 Jottings

After the interview MOC shared with this writer that her observations of her child over the last 10 weeks include outcomes related primarily to speech and OT. She believes that his posture is improved and that he has been talking more and using more words since starting the program.

Brian
Interview 1 Jottings

Social group
Individual counseling
    Talk therapy
    Asd focused
    Back to talk therapy
OT

Brian
Interview #2 Jottings

Cool down, lap, posters on wall, stretches, new skill, lap, groom horses
Stop, turn, slow down, back, 2 point, speed up
Horse is calm = me calm
Lucy – shy but big personality
motion

Carrie
Interview 1 Jottings

Jottings from Interview:

Nervous experience = learn to be comfortable

Yellow = green

Limoncello

Take care of them

The way they act – understand them more

Being comfortable

The way they act

Speech – pretty good therapist

OT – puzzles, flexible thinking

Goals – Helping with socialization

Smaller animals: ponies - but not riding, 2 turtles – painted

Learning

No animal hx

Options has a canine – doesn't like canines

Carrie
Interview #2 Jottings

Interview 2 Jottings:
Went by fast
Tried to individualize
Rocking
Mack
Breeds, coloring
Safety rules
Still nervous
Happy to no longer be busy

Appendix B

Carrie
Interview 1 (10/18/22 at 5:15pm)

This interview was conducted in a small office within the Riding Center. Participant Carrie elected to have a caregiver (Grandmother, GMOC) present during their interview.

Researcher: I am going to start just by telling you a bit about what's going on. So I have this little recorder here, in part because I'm a human being and I'm not going to remember every single thing we talk about. These recordings stay with me only, so I transcribe them and then I take out any identifying info. So if we like, maybe say your name or something like that, I will take all of that out. Um and then what I am looking for, from everyone who participates in this program who is doing interviews for me, um, are two things. For this first interview I wanna know what experiences you've had before coming here that made you interested in this. So I have four really broad questions, um, but that doesn't mean I will only ask four questions. So for example, the first question I am going to ask you if what are your feelings about being in this program so far, and I might have some follow ups just to help you get your story out. Does that make sense?
Participant: Yea.
GMOC: Is she in the direct sun? Is the sun bothering your eyes? Do you need to move a little? It's really really bright…
Researcher: Yea we can move around this room however we want to
GMOC: and I'm sorry I know I said I would be quiet
Researcher: Do you want me to out the blinds down?
GMOC: That would be good because I can see the reflection on your glasses, she's

really getting the brunt of it over where she's sitting
Researcher: Uhuh
GMOC: Or I can sit over by the door and she could move over here. Do you wanna do that?
Participant: Yea sure.
GMOC: Let's do that, move your chair over
Researcher: Oh now it's dark! Let's turn on the light light
GMOC: If she just sits where I was, unless somebody is going to come in the door.
Researcher: No one should be coming…
GMOC: Oh you want the light on
Researcher: Turn on that light as long as this type of lighting doesn't hurt your eyes too much. Ok
GMOC: Is that better hunny?
Participant: Yea
Researcher: Alright let me make sure my little recorder is working. It's working. Um So there's no right or wrong answers. What my research is about is actually helping tell your story, your story and everyone else's story. Alright so there's no right or wrong answer it's really just your opinion. Um and your experience. Okay. So if you tell me at the end that, you know, horses weren't really all they were cracked up to be, that's okay. If you tell me that horses were more amazing than you ever thought it could be, also okay. K, alright, so… what are your feelings about being in the program so far?

Unsure
"nervous"

Participant: Hmm, Okay, I mean like I don't really… I don't know. I've been kinda nervous about this because I haven't really ridden them before so, like

New experience

Researcher: Okay
Participant: I haven't been around them that much. So…

New experience causes nervousness

Researcher: What are you nervous about?
Participant: Hmm. I guess like riding them, slash like being around them. Kind of like, haven't really done that before so…

Researcher: Just that it's a new experience or is there something particular about the horse that has you going hmm
Participant: Uh new experience
Researcher: okay
Participant: Mmmhm
Researcher: Okay. I'm going to skip around a little bit actually then and go straight to this question about what previous experiences you've had with animals. So you say you haven't had any experiences with horses
Participant: Well I think I've been on like been around a pony or something before but um not really horses though.
Researcher: Yea
Participant: Like smaller
Researcher: Smaller animals?
Participant: yea
Researcher: So what kinds of animals have you been around before?
Participant: Like I think a couple of like ponies and like I think maybe cats and dogs
Researcher: Mmhm
Participant: Yea family members and stuff that have those animals but
Researcher: Do you have animals at home?
Participant: Uhh turtles
Researcher: Turtles?
Participant: Yea they're not that big, they are pretty small.
Researcher: What kind of turtles? Are they box turtles or
Participant: They're painted
Researcher: Ah painted turtles. That's cool. And so why animals? What makes you interested in horseback riding?
Participant: Well like if I learn more about it I probably won't be as like nervous about it. Find out more you know.
Researcher: Mhhm
Participant: information (mumbling)
Researcher: Have you always been a person who enjoys animals?

New experience

Ponies are different

Horses are a new experience

Size matters

Experience with ponies, cats, dogs

Experience with family pets

Has turtles at home

Small turtles

Painted turtles

Goal = overcoming nervous feelings

Participant: I mean, some what. I kind of do, but…
Researcher: okay. Maybe another question would be… who is it that chose participating? Did you choose to come and do the horseback riding or was it mom or grandma that said hey….
Participant: Well my mom wanted me to try it.
Researcher: okay
Participant: yea
Researcher: And what do you think she…. Why do you think she chose horseback riding for you?
Participant: because uh, well she knows that I'm nervous about horses
Researcher: Oh
Participant: Like, probably so that I could be more comfortable.
Researcher: Okay. I'm going to pop back up to this question about this program, do you have any goals or anything that you're hoping to learn from being in the program?
Participant: Um well like I mean, how do you take care of them I guess? Like (mumbling)
Researcher: Mmhm, anything else?
Participant: (long pause) maybe like, you know, maybe like behaviors of horses? Like personalities I guess. I don't know. Like the way that they act and stuff. Like, you know…
Researcher: So you want to understand them more?
Participant: yea
Researcher: That's really cool. Wha…. Hmm I am trying to think of how to phrase the question that's un my head. Like what do you think you'll get out of learning more about the horse?
Participant: Eh I probably won't like, probably won't be as nervous about them if I know, like, in the world, like, what they do and their behaviors
"kind of" likes animals

Parent driven participation

Mom wants her to overcome nervous feelings

Become more comfortable

Learned how to care for horses

Learned about horse behavior

Understanding horses

Overcoming nervousness
Become familiar with something new

Researcher: Yea

Participant: (mumbling, followed by a long pause)
Researcher: Can you tell me a little bit about what you think the adults are hoping that you get out of this program?
Participant: Well… um, I mean, well understanding horses better and like being more comfortable around them for like, cause like I haven't really been like around them before so…
Researcher: okay Do you think that there are other things you can learn about life through the horse?
Participant: Uh, probably.
Researcher: Yea… do you have any idea of what that could be right now? Or, the answer could also be no
Participant: I mean, I don't know like, maybe like from, you can learn something from the way they act or something like, what they do
Researcher: Yea. So one of my important questions here is whether or not you had done other therapies before. Do you know if you've done therapy before?
Participant: Well um well I'm actually, I've done um, speech therapy before at like um but I haven't gotten back into that. It's at [Redacted]
Researcher: Hmm Okay
Participant: But…
GMOC: Her mother's trying
Participant: I'm doing…
GMOC: They're dragging their feet getting a therapist…
Participant: I'm doing OT right now, I do it on Thursdays
Researcher: Now tell me about your experience with speech therapy. Did you enjoy it?
Participant: I mean, it was pretty good. I had a good therapist, so… She was really nice and uh yea so… pretty good experience

Goal: Increase comfort

New experience

Understand horse behavior

Past therapies: Speech

Parent driven engagement

Past therapies: OT

Speech was "pretty good"
"good therapist" = "good experience"

Researcher: Is that an important part of therapy? Having good adults around you?	Important to have good adults involved
Participant: Yea, Yea	
Researcher: Did you have any negative experiences with speech therapy?	Positive experience in speech
Participant: I don't really think I did.	
Researcher: Okay so overall positive?	
Participant: Yea	
Researcher: Okay. And what about OT? What do you do in occupational therapy?	Pt activities include puzzles, balance, and flexible thinking
Participant: Do different things like puzzles and stuff, like, working on my balance and stuff, like, and also like flexible thinking and things like that.	
Researcher: Mmm flexible thinking, yea. Do you have things that you're hoping to learn in OT?	Unsure of personal goals
Participant: I don't know if I really do, like, well probably the thing about, probably, the flexible thinking actually but not too good on that so…	OT goal is flexible thinking
Researcher: That's like your personal goal is being more flexible	Adult vs personal goals
Participant: Mmm yea probably	
Researcher: okay yea I know sometimes as a young person adults have goals for you but I just wanted to know, you know, what was important to you. So the flexible thinking is what you're saying is important to you in OT?	Confirming personal goal
Participant: mmm yea.	
Researcher: Did you have goals when you were in speech?	Unsure of speech goals too
Participant: Well I think it was mainly to like, um, some things I did in speech were like um, cause I don't do well with talking to new people so we kind of did stuff about that. Like, you know, like…. Social things. You know cause I don't, cause I'm nervous around like new people and stuff so… think that was probably like, a goal.	Talking to new people is a goal Social goals Nervous around new people Goal is socialization
Researcher: Yea	
Participant: be better at social. Like talking to new people.	

Researcher: gotcha
Participant: so…
Researcher: So you were working on socialization
Participant: Yea
Researcher: Do you still have things that you want to practice and work on with socialization?
Participant: Um, I don't know. Probably. I just, I just don't really go to a lot of places really. So…
Researcher: Yea. Well cause I remember last time, you do homeschool but, and you go on… is it Tuesdays or Wednesdays?
Participant: Today yea
Researcher: Yea and you meet with everyone
GMOC: Well tell her your week, what do you do on Wednesdays?
Participant: Hmm. I do um a one at church, kind like a bible study in a way but…
Researcher: Cool
Participant: It's a group, yea. It's not that big of a group. It's called [Redacted] but it's… I do it with my sister and there are only like 3 other people, plus the leader so, not a lot of people in that so…
Researcher: Do you like the small group versus a large group?
Participant: Small yea
Researcher: Do you think that… hmm… well let me go back. In regards to therapy do you know if you've ever done mental health therapy?
Participant: No I don't think so. No
Researcher: Okay. Do you know what mental health therapy is?
Participant: I think I kind of know. I don't know yea.
Researcher: Works on, usually, things like, well it could overlap with the speech and OT so you can work on socialization umm… and different things like that. Um and usually feeling comfortable and confident in yourself too. Do you think… So one of the things I'm exploring is, do animals help people's mental health um… So do you have any… anything like that you're hoping

Confirming social goals

Limited experiences outside of home

Attends church
Bible study

Church group

Small group

Likes the small group

No mental health treatment previously

Not even sure what mental health is

to get out of this? I think I heard you say something earlier when you were talking about being nervous. So I can think of the reverse of that but…	Increase comfort
Participant: Comfortable?	
Researcher: Yea. You wanna work on being comfortable in this new situation.	
Participant: Yea	
Researcher: Would you agree with that?	Zones of regulation
Participant: Yea (long pause)	
Researcher: Have you seen the zones of regulation before?	Familiar with the zones, speech
Participant: I think so, I think we did that at speech therapy.	
Researcher: Yea?	
Participant: Pretty sure.	
Researcher: Okay so I have, oops, I have one of those charts here. And just to explain to you what I am doing, I'm just trying to get some more information about your feelings and how you're thinking and feeling about this so I'm gunna show you… So these are the zones of regulation	Familiar with the zones
Participant: Yea I have a paper about that from speech that tells me this stuff	
Researcher: I thought so! Most people have been introduced at some point to the zones. So if you had to choose a zone when you think about coming here and doing the program and eventually having the opportunity to ride a horse, where would you put yourself?	Nervous about horses
Participant: I don't know, probably uhhh… a little nervous	Confirming nervous feeling
Researcher: A little nervous?	
Participant: Probably	
Researcher: So it's not quite red, right, cause red is really high energy	Yellow zone = nervous
Participant: It would probably be more yellow, I guess…	

Researcher: In the yellow still, so a little bit nervous. The words they have in there are worried, so maybe a little bit in that yellow	Confirming yellow zone
Participant: Yea	
Researcher: Yea, when you're all done with the program where do you think you'll be?	Wants to move from yellow to green
Participant: On green.	
Researcher: So you're gunna try and get comfortable and move into that green zone where you are just calm. That's kind of what you've been talking about. I got to see class today and you were talking a lot about using a calm, gentle hand, interacting with the horse in a calm way… (long pause) Let me go back to your previous experiences. Um. Have you done other animal assisted therapies? Other therapies with animals, in OT or speech was there never an animal present?	Nervous to comfortable No AAI experiences
Participant: No.	
GMOC: Is there a dog at [Redacted] sometimes with one of your teachers?	Service dog at school
Participant: Well there wasn't today but usually… there's a service dog	
Researcher: Oh, thank you. That's a good one. Sometimes, um, there are animals at your school then, is that right? That's uh… [Redacted] program is your….	Homeschooling co-op program
Participant: It's a homeschool program	
Researcher: That's your home school program. Do you get to, um, interact with the dog there then?	Doesn't like dogs
Participant: No. I don't really, I mean, I don't, I mean, I don't like the dog (mumbling) I mean, I like the dog but I don't really like mean dogs	Clarifies that some dogs are mean Pit bull lives nearby
Researcher: Oh	
Participant: Like we have a pit bull that lives like two houses down, so yea…	
Researcher: You've had some negative experiences with that dog?	Scared of pit bull that lives nearby
Participant: Ehh not really, I'm just scared of him. (mumbling)	
Researcher: What makes him scary?	

Participant: I don't know, he's just kind of creepy. He's kind of big and like, sometimes, in their front yard they don't have him tied to the tree. So, he's like loose sometimes.
Researcher: Oh yea.
Participant: Creepy, but…
Researcher: Is he barking a lot then?
Participant: I think he barks more at night. A little… and he has a deep bark. Yeah so…
Researcher: I got it, you're not a fan
Participant: Yea, no.
Researcher: But horses are different?
Participant: Yea.
Researcher: What makes a horse less scary?
Participant: I don't know, they're more like… I guess they're more like calm animals, more friendly.
Researcher: mmhm
Participant: and social, sometimes, than dogs
Researcher: Yea
Participant: but yea so…
Researcher: So there's the canine at school but you don't necessarily interact with him cause you're not the biggest fan of dogs? (silence) You are very brave for coming in and overcoming one of the things that you're nervous about, hanging out with horses. Outside of coming to [the riding center] do you have other opportunities to see horses?
Participant: Uh not really, I don't think so
Researcher: No, it's not something that usually comes up a whole lot
Participant: No, yea.
Researcher: And you said that your mom is the one who told you about the program, and said she thought it would be good for you.
Participant: Yea
Researcher: Do you know how she learned about it?

Creepy dog
Big dog

Gets loose

Creepy dog

Deep bark

Horses are different

Horses are calm and friendly

Horses are more social

No other opportunities to see horses

Participant: Well, it has to be from my speech therapy place. They had a thing about it on the door.

Parent learned about program at speech
Flyer on door at speech office

Researcher: Mmhm
Participant: Um so yea.
Researcher: If it wasn't a research study do you think that you would be coming here?

Wouldn't ride horses otherwise

Participant: No, probably not.
Researcher: Have any of the adults talked with you about what they hope you get out of coming to the program? Like what are these programs for? Did they talk about that on day 1?

No education from adults about AAI

Participant: I can't remember. I don't think so. I'm not sure what, but I don't know.
Researcher: Yea. Well I am trying to think if I have any other little questions here, but I think you have answered all of them.
GMOC: Carrie
Participant: What?
GMOC: May I tell her that it is difficult for you to do new things?

None "pushes" to complete difficult experiences

Participant: Ehh
GMOC: and that mom sort of encourages and pushes to get those experiences, right?
Participant: Yea
Researcher: So that's part of the big overall goal for you is to try new things that, maybe, are scary at first? Yea?

Try new things

Participant: Yea.
GMOC: Change is hard.
Researcher: And the more we practice, the easier it gets. But I think it's still always a little bit hard, even as an adult. New situations can be intimidating
GMOC: She hasn't felt real comfortable in the class yet because levels are different and, um, it's made her feel dumb.
Researcher: Oh.

Group can feel childish

Participant: I wouldn't say dumb, more like mmm childish
Researcher: Ah.
GMOC: So we've had talks about that

Researcher: I can appreciate that, you know I think one of the things that I am hoping to learn is when do differences matter. Does there need to be a special autism program or is just horseback riding good for all kids? And so I think that's another important piece to hear that, that as a young woman with what they would probably call level one autism, right, a very intellectual, bright young lady, that sometimes it is hard to be around people with autism who have different…
GMOC: Different abilities
Researcher: yea. I get that. Yea.
GMOC: It's hard for her to be grouped and to be considered different. Cause you fit in pretty well places, don't you?

Doesn't feel she fits in

Participant: Yea.
Researcher: Is that contribute to your nervousness or is that a whole other…

Nervousness is only part of it

Participant: I don't know. A little, partly, but I don't know…
Researcher: Are you still looking forward to riding a horse?

Still nervous about horses

Participant: Kind of, Kind of nervous still but… yea
Researcher: Do you know when you get to ride the horse in your program?

No riding until after the 10 weeks

Participant: It's not til like the um last week.
Researcher: You do like the whole 10 lessons and then you get to…
Participant: And then I ride on my tenth one I think
Researcher: So you've got some time to work up to that

Working up to riding

Participant: Yea
Researcher: If you had been introduced to the horse and out there trying to ride today, do you think you'd have a different experience?

Not ready to ride yet

Participant: Yea, probably.
Researcher: Yea, if you thought about someone trying to put you on a horse today, how would that make you feel?

Participant: Mmmm yea I wouldn't like it. Hahaha
Researcher: So you kind of like this slower pace of this group.
Participant: Yea
Researcher: because they are working you up. You get to see the horse, talk about it for a while
Participant: Yea
Researcher: Ok. I hope that I am not putting words in your mouth. I don't wanna make guesses and have you just agree with me, so… That's not what I am trying to do.
GMOC: Are you nervous right now?
Participant: I don't know
GMOC: Because I don't see you looking at Tiffany very much. And that's something in speech they really worked on.
Researcher: Ok. I see you give a little glance over every now and then. That's a good one, you don't have to make direct eye contact but if you look up occasionally it lets me know that you are listening. And that's partly too, why, you know, there's more than one interview because I understand that I'm a stranger.
GMOC: But a friendly stranger, right honey?
Participant: Huh, yea.
Researcher: Um GMOC is there anything else that you would like to add, hearing these questions.
GMOC: Knowing that you're looking for, but as we've talked about. May I talk a little bit (to participant)
Participant: Yea
GMOC: As we've talked about, you know, why am I going here and, you know, she doesn't feel like she fits in really with the class but I think today they really tried to give you something, like I hear you read an article and shared it with everybody, that sounds really good. (to participant) did you enjoy reading that article and talking about it?

Would not like trying it today

Gradual exposure

Participant: Yes
GMOC: Good. So see, and they told me last time, that they were going to try and do things differently and I told M that. I almost called you [sister's name] and I'm sorry. Um you know 5 grandkids in the same family, I mess up. Um and we've talked about how new things can turn into something wonderful. And it's a good experience to have. And we talked today, earlier, about, you know, how when you did your figure skating, that was hard but she persevered, you know. With trials and tribulations because she had a sort of singled her out to everyone that she was different.
Researcher: Oh — Felt singled out, different
GMOC: It was terrible. — Everyone was successful but her
Participant: Cause like, I didn't pass. All of the people did, so.
GMOC: She made sure to tell her in front of everyone at the beginning of the class that she was the only one who didn't pass.
Researcher: I am so sorry that you had to have that experience
GMOC: yea, but she kept going. And you know… she passed. And this was, you know, she was the youngest in the class too, she was in adult ladies figure skating.
Researcher: Oh wow.
GMOC: She took it for months because mom really wanted her to get to that success and she did. You know? And you''ll get to that success with riding the horse too, I believe. And same with piano lessons, she plays beautifully but she still, we were talking about that today, she says- — Doesn't want to play piano
Participant: I don't wanna play piano anymore we use to- — Family encourages her to play piano
GMOC: No you don't, cause, there's a piano in your house and in my house but, you know, yea.
Researcher: What are your hobbies? What do you like to do? — Likes reading and building with legos
Participant: Read and um, I like legos a lot
Individualization of program

Researcher: Reading and legos?	Confirming hobbies
Participant: yea	
Researcher: If you had to imagine a future career, what do you see yourself doing?	
Participant: Well like, I also like children, young children	Likes young children
Researcher: You do?	
Participant: Yea	
Researcher: Okay, do you like helping? Is that a good word	Likes helping others
Participant: Yea	
Researcher: You like helping with young kids?	
GMOC: Tell her what you are doing Wednesday nights after your [church] group.	
Participant: Well, I'm helping with the [youth program]. They're the 3 and 4 year olds at our church. Like, so they need help.	Cares for younger children at church
I'm helpful with that.	Helpful
GMOC: And did you want to start that when mom got it arranged?	
Participant: No, but I did.	Didn't want to at first, mom pushed
GMOC: She'd been saying she wanted to but then mom arranged it secretly so she wouldn't get too excited if it didn't work out. And then she was very upset. But now it's working well, isn't it honey?	
Participant: Yea.	
Researcher: So I'm hearing that mom pushes you to try new things and sometimes they work out awesome and sometimes you try them and you're like eh	Sometimes being pushed is good
Participant: Yea	
Researcher: Even if you're good at it like piano playing	
Participant: Sometimes I do, sometimes I don't, yea.	Sometimes being pushed is not good
Researcher: Yea and you can be good at something and still not necessarily want to do it. That happens	
GMOC: And what do you do with me every morning?	
Participant: Cooking	Cooks with grandmother

Researcher: Yea you're a great chef, you cook for the whole family. You help take care of your siblings?	Cooks for family Sometimes helps with siblings
Participant: Eh, kind of, I guess, I don't know. Sometimes. I have two younger brothers and like, two older sisters. So	Has 4 siblings One sister in college
Researcher: Oh	
Participant: One of my sisters is at college right now, she's [redacted] years old.	
GMOC: And they were like best friends so this has been a big change. And when she came home, what did she do? She took you shopping right away, didn't she?	We shopping with sister when home from college
Participant: Yea we went shopping so…	
Researcher: I love that. So if you get to choose books to read, what kind of books do you usually like to read?	Likes reading action and adventure books Like fairytales
Participant: Like action and adventure maybe. Like fairy tales sometimes	
GMOC: Limoncello	
Researcher: Oh is that who helped named the horse then, it was you?	Helped name Tiny Blue Limoncello
Participant: Yea.	
GMOC: Oh I heard Mr. Limoncello and I thought, what's that doing there	
Researcher: I wondered if you guys helped name Tiny Blue Limoncello.	
GMOC: Oh, Carrie what a good name you shared that	
Researcher: So not necessarily books about animals, more books about fairytales and sci-fi and magic?	Confirming book preferences
Participant: Yea	Favorite book is Limoncello
Researcher: Do you have a favorite book?	
Participant: Uh I like, the Limoncello series. That is one of my favorite book series but like, I don't know, I have a lot of things	
GMOC: She has books everywhere	
Researcher: I am going to have to check out this Limoncello book.	Limoncello is a series with 6 books
GMOC: Well there's several	
Participant: There's 6 of them. I have the entire series, so… I don't know.	

Researcher: Awesome. Well those are all the questions I have. Is there anything else that you want me to know about your life before, you know, you came here?
Participant: Not really. No. I don't think so.
Researcher: Well I am excited to see, when we are all finished and we get to interview again, how you're feeling then about the horses and whether or not it's something you want to stick with. It'll be really curious to see.
GMOC: Mom is trying, and this is something you didn't know yet, so I'll ask you if you've heard of them – the Westernaires Horsecapades down in Denver.
Researcher: I have not heard of that.
GMOC: It's all teenagers who ride horses and do tricks and things.
Researcher: Oh.
GMOC: She's trying to arrange that for Saturday cause she thought that might be something that, for the whole family.
Researcher: To go watch, is that like a thing that you watch?
GMOC: Yea. You don't ride it. It's the teenagers do all these tricks and things and riding. I guess it's just beautiful to watch.
Researcher: I have not seen that before. I might look that up though.
GMOC: See her mom and her brother, they've been staying because he's in partial hospitalization right now. They've been staying at [Redacted] and they got tickets. She's trying to see if she can change the time of the tickets so that people could go. And she thought, you know, she asked me about and I said I think that would be good for Carrie. 'Cause then she can see more horses and get some more exposure
Participant: What time is it?
GMOC: Well that's what she's trying to change. So we can talk more about that but I asked her to write it down for me…

Carrie Interview #2

Carrie completed their second interview on 12/16/22 at 3pm. The interview was held at Children's Hospital's North Campus in a private therapy office. Carrie elected to have GMOC accompany her to the interview again this time.

Researcher: Alright so, I was emailing with your mom and she said that you agreed that I could come and see you on the 20th to ask you about your actual experience on the horse. So today I am going to ask you probably the same questions, um, but, you know, instead of having the experience on the horse, you had the experience in the barn group. So, my first question is kind of like, you know, what have you been doing the last ten weeks? Walk me through what a session was like for you.

"learned a lot of stuff"

Participant: Yea, I don't know. We just learned a lot of stuff, like, horses and horse safety and like things like that.

Learned horse safety

Researcher: Okay. Um… How did you feel participating in the barn group?

Nervous at first

"got better"

Participant: At first I was nervous but then I think it kind of, like, got better as it went on. But like…

Researcher: Yea, I think when we first spoke things were a little bit… did you use the word babyish or was that somebody else? But it was kind of slow at first. Is that right? Am I recalling that correctly?

Confirming past feeling about childishness

Participant: I think so.

Childish feeling went away

Researcher: And did that feeling go away?

Participant: Well, yea. 'Cause, actually, like as it kept going it seemed like it went by pretty fast. You know?

10 weeks went by fast

Researcher: Yea. The ten weeks was all of a sudden done.

Participant: Yea

GMOC: What did [Riding Center Staff Member] do for you?
Participant: Well made things more… by leveling it, like tried to find things that I would enjoy more and, like, make things harder for me.
Researcher: So she tried to individualize it maybe, is that a good word?
Participant: yea
Researcher: What was your favorite part about the group?
Participant: Well, I kind of liked that there wasn't a lot of people. I don't do well with a lot of people.
Researcher: You liked that it was small?
Participant: Yea
Researcher: Okay. Anything you didn't like about the group?
Participant: Uh… I don't know if there is
Researcher: Nothing that you can think of?
Participant: Not really.
Researcher: Hey that's not too bad. Um, tell me more about what you learned over the program, over the last ten weeks.
Participant: Um… well, like, we learned about horse breeds and, like, how to act when you're around them and, like, the safety rules and, like, uh, you know… different- also like different colors of horses and, like… so yea.
Researcher: What were some of the safety rules?
Participant: Like um, um like… um like, wearing a helmet. You have to wear a helmet.
Researcher: Oh
Participant: You have to, like, you know, walk when you are around them
Researcher: That's right, the little hand motions that I saw.
Participant: Yea
Researcher: Was it one, two, three, yea.
Participant: Yea

Individualized program

Enjoy more
"make things harder for me"

Confirming individualization

Liked the small group
Doesn't like large groups

Confirming

Learned about horses
How to act around horses

Safety and horses
Colors of horses

Wear a helmet

Walk around horses

Researcher: Okay. Now when I talked to you last you had mentioned that you were doing it because your mom had encouraged you, to try and get you out of your shell. Do you feel like that was successful?
Participant: I don't know, maybe a little bit?
Researcher: Yea — Helped a little bit
Participant: I don't know.
Researcher: Are you looking forward to riding the horse next week now?
Participant: I don't know, I'm kind of… I kinda a little nervous about it. — Still nervous to ride a horse
Researcher: You're still nervous? Yea.
Participant: Kind of
Researcher: What's making you nervous about it now that you've been through the program? What are you still worried, you think? — Confirming nervous feelings
Participant: I mean, I've never really been on a horse before. I've more like, been on, like, a pony or something. But that's not the same thing. — Being on a horse is a new experience; Ponies are not the same
Researcher: Mmm
Participant: It's like bigger and a horse is bigger and like… you know. — Size matters, horse is bigger
Researcher: yea. I am excited to hear, next week, how you feel after trying it.
GMOC: Whose gunna be with you helping?
Participant: [Redacted], my volunteer. [Volunteer] and then [Riding Center Staff] the teacher. — Teacher and volunteer will be there to support her
Researcher: Nice. So it will be the same people that you've been working with and developing a relationship with
Participant: yea
Researcher: Yea. One of the things that has come up in the interviews that I have done, is that it's important to feel listened to. Do you feel like the adults in group listened to you?
Participant: Yea.
Researcher: Yea? Are you looking forward to the horse possibly listening to you? What do you think that's going to be like?

Participant: I don't know. I mean, hopefully, I'll get a horse that listens but I... yea.
Researcher: Yea. Let's see… I don't recall…. I don't think you said that you had done therapy before. So my next question was going to be about comparing the difference… was there anything unique about this experience, though, that you think, as a researcher, I should know?

Experience depends on the individual

Participant: I feel like the experience is probably different for- depending on like what- who you are. Like, it depends on how the person can be different.

People are different, their experiences are different

How they experience life is different

Researcher: Mhm
Participant: how they experience, but…
Researcher: Yea.
Participant: So…
Researcher: For you, is there anything sticking out?
Participant: Mm, I don't really think so.
Researcher: Okay. So my last question today is how do you feel about the program being over?

Okay with the program being over

Participant: Well, I mean, I guess I'm kind of okay. I didn't really like business that much. So like Tuesdays were really busy for me cause I go to my, my um, homeschool program on Tuesdays. And so, like, and then like, right after that we would have to go to [the riding center] and sometimes, and like sometimes I would get car sick

Too busy during the program

Go right from school to program

Car sick on drive

Researcher: Uhuh. Yea
Participant: And like
Researcher: And then you were going right home and making dinner too, huh?

Confirming long day

Participant: yea.
Researcher: So you're looking forward to you schedule not being quite as packed?

Confirming relief felt

Participant: Yea.
Researcher: Okay.
GMOC: We got locked into the building once, remember?
Participant: Yea.
GMOC: Maybe you hadn't heard "hopefully' has a horse that listens

Researcher: Oh. Over at [the riding center]?
GMOC: Yea
Researcher: No, I didn't know that
Participant: Yea [Redacted] was still there so she could let us out, but…
Researcher: Oh my gosh
Participant: Yea
Researcher: I've never gotten locked into a building before
GMOC: And I don't get cell phone reception up there, so (laughter) But yea, we couldn't get out.
Researcher: Oh my gosh
GMOC: We have stopped in at the rest room and… but [Redacted] came into the rest room and then we went out to leave and it's like, we can't get out. So I rushed back in and thankfully she's still in there and she and [Redacted] let us out. They were the last two in the building.
Researcher: Oh my gosh.
GMOC: Yea, that was memorable.
Researcher: That sticks out. That was a unique experience. Mhm
GMOC: I feel that she really came… just started talking more. Especially with, um, [volunteer]. [Volunteer] was a wonderful, wonderful match for her. And [volunteer] would come and tell me she was chattering with me, you know? And that's wonderful, isn't it Carrie? That you felt comfortable enough to talk to her. Cause she doesn't like to talk to people unless she feels comfortable. And, did you feel that way with [teacher] too?
Participant: Kind of, yea.
GMOC: Did you like the game [teacher] had developed?
Participant: Yea
GMOC: [Teacher] was sick, you know, this last time
Researcher: Oh no, I didn't know that
GMOC: Yea, but it still went fine, didn't it?
Participant: Yea.
GMOC: And you enjoyed the game.

(No cell phone reception at riding center)

Prompting from grandmother

"kind of" comfortable with adults now

Participant: Mhm, yea.
Researcher: So you really liked the adults that were part of the program?
Participant: Yea
GMOC: I have to say we were disappointed in her not being matched a bit better with peers.
Researcher: The group, yea.
GMOC: Because my daughter, and maybe you don't want to hear this stuff, but..
Researcher: No, this is good stuff to hear.
GMOC: My daughter had been told, you know, that this was going to be a social opportunity for her to be matched with, um, kids her own age and abilities and, so, [MOC] signed her up, hoping that she's make a new friend out of this. So… you know.
Researcher: Would you agree with that? Was that a little disappointing? Cause I know you said you liked the smaller group but would you have preferred if the small group had more in common with you?
Participant: Yea probably. Like have more in common, that would have been better. Yea
Researcher: Yea. And this was your first, like, program that specifically was for kids with autism, right?
Participant: Yea
Researcher: Yea. Do you think that you will do a program like this in the future? Do you think you'd give it another try?
Participant: I don't know, maybe, maybe not.
GMOC: She doesn't have an interest. She's being polite to you, aren't you?
Researcher: I'm here for the real talk, so you can tell me 'no I did not like this' because that's the information that I'm gathering. It's what was this experience like for kids? Are there certain kids that this is not a good match for?

Confirming positive feelings about the adults in the program

Wanted more in common with the other children, felt different from group

"maybe, maybe not" do a program like this again

GMOC: After the interview, after, after, the ride, I think that interview is gunna be the most crucial one.
Researcher: Yea.
GMOC: Because then you'll have been getting to ride the horse and they chose a horse named…
Participant: Mack
GMOC: Mack. And they said Mack is the most gentle and he's bigger because she's taller. She really had sort of fallen in love with Hope. Right?
Researcher: Oh yea. Yes.
GMOC: But, um, [teacher] said what, about Hope? That she's
Participant: Skiddish
GMOC: Skiddish. And that wouldn't be good for her first ride. And so, but she's said that after her ride this next time, I don't know how this will all work with your interview and the ride, if [teacher] will even be back, you know, but [teacher] had told Carrie that I am going to personally take you to meet Hope after your horse ride
Researcher: I love that
GMOC: So we are hoping that's all still going to be able to be worked out.
Researcher: Yea
GMOC: So, right? Are you hoping to have that?
Participant: Yea.
GMOC: But you're so anxious to meet Mack too, aren't you?
Participant: I don't know
GMOC: You know, when she's spoken with me, it sounds like, you know it used to be 'I'm not going to ride that horse'
Researcher: Mmm
GMOC: I am not going to ride a horse and not it's like, you're riding a horse, right? And you're going to be fine. You're still a little bit, some trepidation, but… but I think you've been looking forward to it too.

Horse named Mack

Couldn't ride Hope because she was too skiddish

'I don't know'

Cause they have presented it in such a way it's sort of exciting
Researcher: Yea
GMOC: And you enjoyed the week that you were… it was a different volunteer cause [Redacted] had to be gone that week. Remember when you were doing the reins?
Participant: Yea.
GMOC: And did you enjoy that?
Participant: I don't know, kind of I guess.
Researcher: Is there anything about the horse that you are looking forward to now? Like what made you excited to see Hope?
Participant: …I don't know, I just really liked that horse I guess. I don't know.
Researcher: She was just beautiful?
Participant: Yea
Researcher: Yea. I can't remember… I was there in your group the day you were going over colors and breeds, so I remember Hope. But I can't remember what her breed and color was. Do you remember?
Participant: Not really. No, I don't know.
GMOC: She knew before because she was telling me all about it. Um, and then the week that they were supposed to meet the horses was terrible weather, remember Carrie?
Researcher: Mhm
Participant: Yea
Researcher: That was the week I was here. The one snow day.
GMOC: And, and so, I was saying should we miss this time because of the weather and the roads and stuff. And she said, but this is when I get to meet Hope. So we drove all the way up and she didn't get to meet Hope. So, that was a disappointment. We understand why and it was so cold out, wasn't it? That that wouldn't have been much fun
Participant: Yea.
Researcher: Yea it was bitter outside

Favorite horse was motivator to attend

GMOC: But still, she didn't want to miss because she wanted to meet Hope. So she never missed a single class.
Researcher: That's awesome.
GMOC: I'm sorry, I'm talking too much. What else do you want to tell her about the program?
Researcher: It's okay if that's all you have, cause I know I will see you again next week and I'm hoping to hear more about what that- what it's like to try it for the first time. I'm excited.
GMOC: Are you a little excited?
Participant: (Mumbling)
GMOC: Look at her and tell her yes or no.
Participant: I don't know.
Researcher: You don't know? Well I wrote that you're still nervous. Is nervous a better word?
Participant: Yea
Researcher: Yea, sometimes nervous and excited, they kind of feel a little similar because it's something new. But you know what I'll tell you, um, from my other interviews what I have learned so far is that it actually feels really secure up on the horse. I was surprised to learn that, so that's what I've learned so- that's what I've been told so far. So you'll have to let me know if you feel same way once you get up there. (silence) Alright, thank you both so much. Let me turn off this recorder…

Not excited

Still nervous to ride

Carrie Interview # 3

Carrie participated in the THR program through the control group, which included a free riding lesson after the completion of a 10 week barn group. She agreed to a 3rd interview after completing her one free lesson. This interview took place at the riding center in a large meeting room with couches and a long table. This took place on 12/20/22 at 4:30pm. For this interview, Carrie's MOC and GMOC were present but sat across the room from Carrie. MOC and GMOC were on the couch and Carrie completed her interview at the conference room table with this researcher.

Researcher: Alright, so the recorder it on. How was it?

"Pretty nervous"

Participant: Uh well I was like, pretty nervous at first but then I started to get more comfortable like, you know?

Became more comfortable

Researcher: yea. What did it feel like once you got up there?

"it was okay"

Participant: Um… it was okay.

Researcher: Did it feel really high off the ground or… ?

Kind of felt high

Participant: Kind of.

Researcher: yea. Was anything scary even after you got in the saddle?

Never riding before was the scary part

Participant: I don't know. I've never ridden a horse before so yea, I was kind of nervous at first but then it started to get better. I tried to get more comfortable.

Nervous about new experience
"I tried to get more comfortable"

Researcher: Mhm. Did, uh, what did it feel like when the horse was moving?

Horse rocks

Participant: I guess kind of this rocking motion, I guess? I don't know. Cause it was like this rhythm I guess? I don't know.

Rhythmic movement

Researcher: Do you feel like a rocking back and forth or is it side to side?

Participant: Probably, maybe, like side to side. Kind of like, I think, a rocking horse or something. I don't know.

Motion moved side to side
Like "a rocking horse"

Researcher: Oh okay. Did you like that feeling or is that one of the feelings that made you nervous?

Rocking is "kind of comforting"

Participant: Um, I don't know. I guess it's kind of comforting. I don't know.

Researcher: Hm. It's a personal opinion, did you find it soothing?

Little bit soothing

Participant: Maybe a little bit.

Researcher: yea. Did you learn anything new compared to before you had the opportunity to get on an actual horse?

"It wasn't quite as bad as I though is would be"

Participant: I mean, maybe that it wasn't… maybe it wasn't quite as bad as I thought it would be. I don't know.

Researcher: Yea, it kind of gave you the opportunity to overcome that nervousness huh?

Overcame nervous feeling

Participant: yea.

Researcher: Is it something that you would want to do again?

Would not do it again

Participant: Probably not. I don't know.

Researcher: Okay. But it ended up not being as bad as you had envisioned in your head?

Participant: yea

Researcher: How was this experience compared to your experience in the classroom?

A real horse was "a lot different" than group

Participant: Eh probably like a lot different 'cause this was a real horse and we didn't have real horses in there, so…

Researcher: Mhm. Were you able to remember the skills you learned in the classroom once you got on the horse?

Participant: Um, yea.

Researcher: Yea? Which did you prefer? Learning it in the classroom or practicing it on the horse?

Preferred classroom learning

Participant: I don't know, maybe the classroom. I have no idea.

Researcher: What was your favorite part about the classroom?

Participant: I don't know, I guess it maybe was like, more comfortable at first versus a horse. An actual horse.	
Researcher: Mmm. Yea. The horse was a lot of emotion upfront to get on it. Are you glad you did it?	Classroom was more comfortable
Participant: Uh yea.	
Researcher: I'm glad you did it too. So how do you feel now about the program and your horse experience being over?	Horse triggered more emotions
Participant: Um, I'd say kind of, um, maybe kind of glad about it. But… I don't know	
Researcher: Mhm, yea. I remember you're glad to not be quite as busy.	Glad it is over
Participant: Yea	
Researcher: now that the horse part is over… what's going through your head?	Glad to be less busy
Participant: Well, I mean, I don't really have to, like, worry about riding horses anymore because it's already happened. So you don't have to fixate on it or something	Relief that it is over, "it's already happened"
Researcher: That's kind of a relief?	
Participant: Yea	Felt fixated
Researcher: Anything else you think I should know about riding a horse?	
Participant: I don't think so	
Researcher: Are you proud of yourself?	
Participant: I… (laughter), I don't know. Well, maybe.	
Researcher: yea	Not sure how she feels
Participant: A little bit, yea.	
Researcher: I know your mom and grandma are proud of you. They're really excited for you, but…	
Participant: yea	
Researcher: Ok. Well, those were all my questions. I'm going to turn this off.	

Adam
Interview 1 (10/19/22 at 5pm)

This interview was conducted in a small office within the Riding Center. Adam declined to have a parent/guardian join them for their interview but their mother did provide additional information after the interview.

Participant: …and then you flip the calendar over
Researcher: (laughter) that's right. So, Adam, I am going to ask you a couple of questions today about the horseback riding program.
Participant: The horseback riding was good
Researcher: That's my first question, what are your feelings about being in the program?
Participant: I'm big happy
Researcher: (laughter) that's a great happy dance!
Participant: (laughter) I'm dancing!
Researcher: Yea?!
Participant: … and jumping!
Researcher: I love it!
Participant: And spinning!
Researcher: (laughter) that's a whole lot of happy
Participant: Yea, it's your turn. To think about sad
Researcher: To what?
Participant: To, because, what you be sad at?
Researcher: What I'm sad?
Participant: of
Researcher: What I'm sad of?
Participant: Yea
Researcher: I don't, I don't know. I don't feel sad right now. Do you feel a sad right now?
Participant: Happy.
Researcher: Yea
Participant: I got a sad when I missed…

"horseback riding was good"

"big happy"

Dancing

Jumping

Spinning

Wants to interview me, switch roles

Wants to know what makes me sad

Sad

Happy

Researcher: I've got the little Zones of Regulation here, are you feeling sad? (participant is shown the zones on an Ipad and he points to the green zone) Yea you're feeling in the green zone, you're very happy. (silence while participant explores the ipad) What are you going to do, edit my pdf there?	Confirming Happy with Zones of Regulation
Participant: Yea (laughter)	
Researcher: How about we leave it as it is. (silence) mhm, have you seen those before?	Familiar with Zones
Participant: Yea. (silence)	
Researcher: So when you're getting ready to come to the horseback riding program what zone do you feel?	Confirming green zone
Participant: Green	
Researcher: You're in the green?	
Participant: Yea	
Researcher: Do you ever feel a little bit yellow because you're excited, or mostly green?	Confirming green zone
Participant: Mostly green	
Researcher: I love that. (silence) How did you feel when mom told you about the horseback riding program? Do you remember that?	*Distracted*
Participant: (silence and then giggling) I'm shrinking it	
Researcher: I see that. (silence) Alright you ready for your next question?	
Participant: Yea.	
Researcher: okay, I'm going to turn that off for a moment (closed Ipad to limit distraction). How did you feel when mom told you about this horseback riding program?	Identified mom in red zone
Participant: She's red.	
Researcher: You looking at the phone now? (laughter) There's a lot of stuff in here huh?	*Distracted*
Participant: Yea.	
Researcher: Yea.	
Participant: See?	
Researcher: mhm	
Participant: It's working	

Researcher: Mhm, you ready for another question?
Participant: uhuh
Researcher: yea, can we have a seat back in there and leave the phone alone? Because it's not mine and we are going to make sure we keep the phone turned off.
Participant: What's your phone number?
Researcher: I don't know, it's not my phone.
Participant: If you want a phone number I can put in… I will delete it. That's not your phone number.
Researcher: Oh
Participant: One?
Researcher: Hey Adam…
Participant: What's your phone number?
Researcher: I don't know what the phone number for that is
Participant: The phone number is 2?
Researcher: What?
Participant: 2?
Researcher: I have no idea. I don't have an answer for it. I know it's very frustrating when adults don't have the answer, but I just don't have the answer for you bud.
Participant: (silence, phone beeping)
Researcher: Nope. Remember I said we are leaving this phone alone because it's not mine
Participant: Okay
Researcher: Kay, can you have a seat back in the chair?
Participant: (Mumbling) I don't know how to turn it on (grabs phone)
Researcher: No thank you. It's not my phone, we're going to leave it alone
Participant: (sighs) Your eyes are on backwards, you can't see me!
Researcher: Are you hiding?
Participant: Yea
Researcher: Okay can I ask you another question while you're hiding then?
Participant: Yea

Researcher: Okay have you ever… do you have any animals at home?	Has pets at home
Participant: Yea!	
Researcher: You do? What kind of animals do you have at home?	Mice and 1 cat
Participant: um mices, cats	
Researcher: You have mice and cats?	
Participant: Mices and cats	
Researcher: Wow, how do you feel about those animals?	"cats make me sad"
Participant: Uh, cats make me sad.	Cat's scratch
Researcher: They do? Tell me about that.	
Participant: Um because they scratch me, upset me, and Shadow meows at me	Likes mice
Researcher: That would make me sad too. What about the mices?	Mice "make me happy"
Participant: The mices are good. And that make me happy	
Researcher: They make you happy too?	
Participant: Yea they make me happy	
Researcher: I love that. Before coming here had you ever ridden a horse before?	
Participant: nnn, yea.	
Researcher: You did? Tell me about that. Where did you ride a horse at?	*Distracted*
Participant: Where's the other lights?	
Researcher: I don't know where the other lights are	
Participant: See that	
Researcher: That's one big light	
Participant: yea	
Researcher: yea	
Participant: Do we have to keep it on?	
Researcher: You want it on? But it's so bright in here with all the windows	
Participant: yea	
Researcher: yea	
Participant: We need some air	
Researcher: You want me to open the window?	
Participant: yea	
Researcher: okay, we can do that. (lot's of noises while I try to open the window) it's not working buddy. It's not working for me.	

Participant: You don't have anywhere to sit	
Researcher: You stealing my seat?	
Participant: I'm, uh, you can sit at that seat	Directing me, the adult, on where to sit
Researcher: I'm happy to sit in that seat if you would like me to	
Participant: yea	
Researcher: okay	
Participant: So I'm going to ask you some questions	Wants to ask me, the adult, questions
Researcher: You want to ask me questions now?	
Participant: Um, so, You have to keep your hands to yourself	Wants me to keep my hands to myself
Researcher: okay	
Participant: and if your cat do scratch you	Cat's scratch
Researcher: oh those cats, so naughty	
Participant: you put a, you can put a cover, a metal cover so they can't scratch you and they'll be sad	Cover self so cats can't scratch
Researcher: Oh	Cats are sad when they can't scratch you
Participant: and then I will take it off and see the mices	No cover needed for mice
Researcher: yea? (laughter)	
Participant: and then I go, they scratch me again and I put it on	Cat's scratch, put on cover
Researcher: wow, wow	
Participant: what do you wanna do on the summer?	*Distracted*
Researcher: What do I want to do in the summer?	
Participant: Yea	
Researcher: Oh man, I wanna go… I don't know maybe I will go horseback riding? I've never ridden a horse before	
Participant: I didn't mean…. Horses don't live in the summer	
Researcher: What do you mean they don't live in the summer?	
Participant: They don't go to the beach because they're only horses. There's a fly!	
Researcher: There is a fly. Adam please don't touch that.	
Participant: I know	

Researcher: okay, let's have you come over here	
Participant: Nope!	Refusing my directives
Researcher: Can I move the wheely chair over away from the desk?	
Participant: Yea	
Researcher: Okay	
Participant: Um so you, when you be, you wanna see the mices, you put some micee	Wants to see mice
gear on and you grab one of them. When a micee get on your hand and then you grab it	Put on mice gear and grab mouse
and they won't feel it	Mice don't feel it
Researcher: Interesting. Are there other animals that make you happy and make you do your happy dance?	
Participant: Um	
Researcher: What other animals do you like?	
Participant: Frogs…. I will turn you around	
Researcher: You're going to turn me around? So wait, what kind of animal did you just say, Fox?	Likes frogs
Participant: Frog!	Confirming, frogs
Researcher: Frog.	
Participant: Yea	
Researcher: Like ribbit ribbit ribbit	
Participant: Yea	
Researcher: So you like frogs, any other animals that you love?	
Participant: Yea, you're gunna read a book.	
Researcher: (Laughter) I'm not going to read a book	Wants to direct me again
Participant: Here you go	
Researcher: Thank you sir, I'm going to put it back over here though because, again, this isn't my room. Oh my goodness	*Distracted*
Participant: Yes it is your room	
Researcher: It's not my room, I'm borrowing it. Just, Just so that we could chat.	
Participant: Hmmm What is this?	
Researcher: Something, something of Ms. Tamara's	
Participant: I can't turn it. Ok so…	

Researcher: Is there something, Adam, is there anything that you're hoping to learn through the riding program. From the horses?	
Participant: no, no, no I was supposed to talk	"I was supposed to talk"
Researcher: Oh because you switched seats for me, you get to ask the questions? But this interview is all about you, it's not about me. It's about you.	
Participant: okay	Wants to lead the interview
Researcher: okay	
Participant: we're switching seats	Switching seats with adult
Researcher: okay, I appreciate that. Alright! Is there anything you are hoping to learn from the horses?	
Participant: no, no. This (inaudible noises) it's going here	*Distracted*
Researcher: okay	
Participant: you're trapped!	Playful distraction
Researcher: AHH!	
Participant: Ha you're staying trapped	
Researcher: hahaha	
Participant: Stay! Trapped! There.	
Researcher: Alright, hold on. It', ow, It's hurting me. Thank you. Oh ow! It's hurting me.	
Participant: (laughter)	
Researcher: It's hurting me.	
Participant: There we go.	
Researcher: Thank you. Thank you	
Participant: Ahhhh	No goal identified
Researcher: So nothing you're hoping to learn, you're just excited to ride the horse?	
Participant: Uh	
Researcher: Is that right?	Playful distraction
Participant: Yea! You're trapped! Your legs are trapped, you can't move.	
Researcher: What is special about horses?	
Participant: you're legs are trapped	
Researcher: Oooh, I can't get up.	
Participant: Yea	
Researcher: I guess I can't go home. I live here now.	

Participant: uh, uh, uh, I got it! Here I go! (crashing noise) Researcher: Oh! Participant: They're not moving Researcher: What makes the horses so special? Why are you excited to come see them? Participant: eee, uhuh Researcher: hm? Participant: You're trapped! You're head is trapped Researcher: nope, we can't keep putting it backwards. Will you answer my question Participant: eeee Researcher: what do you like about the horses? Participant: eeee Researcher: Oh don't fall backwards. Participant: I'm not going to Researcher: I'm going to let go okay there you go Participant: eeee eeeee yea. You're toe's not moving. There. That's one move. I'm telling you, this is, if you, this one doesn't move. The other one moves.	*Distracted*
Researcher: Alright ready. I'm going to sit here and take a really deep breathe because I have (deep breathe in and out) one more question for you Participant: uhuh Researcher: (deep breathing sounds again)	Attempt to try focusing strategies through modeling
Participant: Wait! Can we talk to the other questions about me? Can we switch seats? You can talk about me. Researcher: We can switch seats after you answer my last question (phone rings) Participant: okay Researcher: okay (phone still ringing) Have you done other therapy before? Do you know? Participant: Somebody's calling it Researcher: I know but you know what, it's not my phone. So I am going to let it go to voicemail.	*Distracted*

Participant: or I can call it	
Researcher: have you done therapy before? Do you remember?	Attention continues to be difficult *Distracted*
Participant: What is this? What is this?	
Researcher: I don't know	
Participant: Me either, what is this?	
Researcher: oh well that's definitely a lamp.	
Participant: and the picture in it?	
Researcher: Oh there's a horse in that picture	
Participant: yea	
Researcher: they look very happy on the horse	
Participant: and that is for people. hum	
Researcher: please hang that up, it's not our phone. Adam is there anything else you wanna tell me about being in this horseback riding program?	
Participant: because… what is that? Is that a bottle or not?	
Researcher: I don't know. Alright I am going to turn my recorder off. It sounds like we are all finished. Are we done?	
Participant: No.	
Researcher: Oh you wanna tell me something else about horses?	Wants to switch seats and interview me again
Participant: no you can't, we gotta switch seats.	
Researcher: Oh I did promise you that we would switch seats, but only if you answered my question	
Participant: Yea I answered your question. You can turn it off	"and now it's my turn"
Researcher: okay	
Participant: and now it's my turn	

Brian
Interview 1 (10/19/22 at 4pm)

This interview was conducted in a small office within the Riding Center. Brian had just finished his second riding lesson and elected to be interviewed independently, without a caregiver present.

Researcher: Alright
Participant: Okay
Researcher: Okay, how are you feeling about being in the study so far?
Participant: Great! Ah at first, the first day, I felt really stressed because of timing issues. I have to... I always like schedules and ratios and that's not possible with living animals so that was hard the first day. The second day I went in with low expectations because, like, the first day I went in with high expectations.
Researcher: Mhm
Participant: So I went in with low expectations and at first it was hard because it felt like they were, uh, babying me but, uh, that was just for the first part and once I got that over with by basically telling them to be quiet, everything went great!
Researcher: Okay. Um, how did you end up signing up for this?
Participant: Well, I… well my mom said, uh, do you want to join this study that's about horseback riding. 'Cause I had went horseback riding in Hawaii and absolutely loved it. Uh, I don't like this as much because the Hawaii horseback riding was just relaxation horseback riding when this is actually learning, which kinda makes it slightly worse.
Researcher: Yea

Likes program
Timing is stressful

Animals don't always follow schedules

High expectations turned into low expectations

Felt babied at first

Self advocacy – asked the adults to be quiet

Likes program

Mom told him about program

Previous experience with horses

Horseback riding is relaxing

Learning is not relaxing

Participant: But! Yea also so it had to do with kids with autism and I am proud of my autism.	Proud of ASD
Researcher: I love that	
Participant: And I wanted to help move forward scientific innovation! Yea!	Wanted to help researchers
Researcher: I love that too!	
Participant: The money was a good side effect	Wanted the money
Researcher: Yea there's a lot of different things you get money for in this one.	
Participant: 'Cause I'm going to turn my gift cards in for their equivalent with my mom	Turning gift cards into cash
Researcher: Nice. Um so mom found out about it, she let you know, and you were really excited?	
Participant: Yes. And actually I get to miss… I didn't even know I was missing half a day of school for it or else I would have been even more excited. 'Cause at first, because we have a long drive, so at first I thought it, um, I knew, like the first time we went to do the test I missed the second half of school but I thought that was just for the test thing. I thought it would be after school, maybe like ten minutes early. Because I used to go to a social group on Wednesdays and I don't exactly need that.	Missing ½ day of school Likes missing school Long drive Previously attending social group, stopped for horses
Researcher: Sure. So was it worth the drive?	
Participant: Oh Yea! I get to read during the drive. The drive is one of the best parts.	
Researcher: Okay. So you're an avid reader?	Likes long drive
Participant: Yes	Reads on drive
Researcher: Yea, what are you hoping-	
Participant: And a more avid video gamer	
Researcher: Oh well I'm going to have to ask you about that after our official interview.	Loves video games
Participant: What's your favorite video game?	Loves video games
Researcher: Well	
Participant: We will talk about that later.	
Researcher: Um, what are you hoping to learn or gain from the riding program?	

Participant: Uh, more… well uh now or what I was thinking about when I joined it?
Researcher: What you were thinking about when you joined it, like why?
Participant: Well, um, I was just hoping to gain, like, the feeling that I had, uh advance scientific innovations, the money, and uh, and… oh yea, and some free horseback riding.

Wanted the relaxing feeling again, help with research, earn money, and get free horseback riding lessons

Researcher: and some free horseback riding. When you, so you said, um, the feeling. Are you talking about what it felt like in Hawaii?
Participant: yea. It was so relaxing.
Researcher: Yea. Any other words you would use to describe what it was like when you went horseback-

Previous experience on horse was relaxing

Participant: No it was just relaxing
Researcher: Relaxing okay.

"relaxing"

Participant: It's less relaxing now because… the horse aren't stressful but the people are, especially when they are, kinda, babying you.

This is less relaxing
Adults, feeling babied

Researcher: There's a lot more going on?
Participant: Yea.
Researcher: What other therapies have you done before?
Participant: I've done social group, I've done counseling, I've done autism counseling, and now I'm doing another type of counseling.

Previous therapies: social group
Counseling
ASD counseling
More counseling

Researcher: Do you know what the types of counseling are that you did?
Participant: Well uh at first uh we've got like normal counseling, you you
Researcher: Talk therapy?

Counseling

Participant: Yea. The autism counseling was talk therapy but specifically for autism people but it was really expensive. So, and it wasn't worth it.

Talk therapy

Too expensive
Not worth the money

Researcher: Gotcha
Participant: So we stopped because it was basically the same as normal counseling. So know we're back on to normal counseling.

Back to counseling

Researcher: Okey
Participant: We stopped the normal couns-, we stopped the first normal counseling for a while before we did the autism counseling. And, because I've also gone to social group.
Researcher: Mhm
Participant: Not, um, like still going to it. I put it on hold for this.
Researcher: Okay
Participant: But normally, yea. Um, also, I've gone to… and I think my last one was OT
Researcher: OT, okay.
Participant: which ended once I, uh, got better at it.
Researcher: Mhm, do you remember what you goals were in therapy?
Participant: Just a bunch of them. I can't name all of them. There are so many and it was a long time ago and this therapy had so many I can't list all of them.
Researcher: That's okay. Have any of the adults talked to you about other positive benefits of horseback riding?
Participant: Uh, I haven't actually known about any. But I, I, I read books. Like I know there's, like, um some good ones, like, it helps improve balance, muscles, whatever.
Researcher: Mhm
Participant: You get what I mean.
Researcher: Yup
Participant: Relaxation, whatever. I just, I never heard it had any effect on people with autism. So it's, it personally feels- seems to have a great effect. I mean the worst part of it is the people. Why can't they just let us ride the whole time, just straight and let us ride like down a scenic path? You know?
Researcher: I can appreciate that. So if you could, you would get rid of all humans…
Participant: mmhm yea
Researcher: and just you and the horse?
Participant: Yes

Many changes in type of counseling providers

Social group

Social group on hold for horses

OT

Finished OT

Many goals, can't remember them all

Adults have not talk to him about AAI

Book knowledge about physical benefits

Personal experience with relaxing effect

"the worst part of it is the people"
Adults make it less relaxing

Wants to be alone with the horse

Researcher: I love that. Yea. Do you know, do you have any idea of why that is for you? Like why…

Participant: Yea I don't , first off they were kind of babying me. Second off, learning things, I like learning things but it's kind of not that relaxing and already know what I need to know. 'Cause I literally have done horseback riding once but I learned very fast. I'm a very fast learner.

Researcher: Mhm

Participant: So, I've got all the things I need to ride. You know? Um, and, so like the babying me. First off, they think I know nothing, which is kind of true, but not that really. Also, just the way they act towards me is kind of baby-ish, you get what I mean?

Researcher: Yea, yea. It can be really hard

Participant: Yea. And, uh, it's not that fun if there's just a horse then its…. Also most of them seem to not get me that much.

Researcher: Do you think-

Participant: 'Cause they're volunteers, they're not really specialized in autism. So they, so they don't understand mm, like, they don't understand my need for like times, you get what I mean?

Researcher: Mhm. Yup. Well that was kind of going to be my follow up question there, was… does that happen to you a lot in life? Where the adults make the assumption that you don't know and they kind of give you orders a lot?

Participant: Actually, not that much honestly.

Researcher: Okay

Participant: Like, well, like, um, first off, I am one of those supporters that, I think kids should have, be able to vote. Their decisions- grown-up's decisions affect us too. Like I'm not sure of the exact age difference because it's weird, because um some people, because they need to have

Adults baby me

Learning is not relaxing

Fast learner – feel he already knows

Already knows

Feels adults underestimate his knowledge/skill

Feels babied

Not as fun as just riding

Volunteers don't understand his individual needs

No respectful of his need for a rigid schedule

No all adults baby him

Kids should have more say

Grown-ups decisions impact children

their own opinions not just what their parents tell them. And that differs depending on the person, what age they develop that.	Kids should be allowed to have their own opinions
So its kind of, cause if you go too high then you're miss, making a bunch of people out. I think they should just have a, uh, you take a test to make sure that you're uh, um, able to do it. 'Cause if there's a one year old who can take the test and get it right, to show that they have their own unique opinion and stuff, let them vote.	Judging by age leaves people out Include anyone with independent thought Let kids vote
Researcher: So in general, kids should be listened to more?	
Participant: Yes! I think that as well.	
Researcher: Yea	Listen to kids more than we do now
Participant: Um, uh but, uh I actually enjoy being with adults more than kids.	Enjoys adults over other kids
Researcher: Yea	
Participant: Because they're not as crazy	
Researcher: (laughter)	Kids are crazy
Participant: I mean, currently I call this the 'your mom' stage. This is well, this has happened for a while. It's basically where people make idodic jokes, mainly, including your mom	Your mom jokes Kids his age tell idiotic jokes
Researcher: Are you in middle school?	
Participant: No, I'm in 5th grade	
Researcher: 5th grade oh	5th grader
Participant: Kids in 4th grade are torture, literally! In kindergarten we were, most people were better behaved.	Kinder kids were better behaved than 4th graders
Researcher: That is very true, 5th grade is a rough time. And the 'your mom' jokes I do remember.	
Participant: I mean they are just so Idodic, you know. They don't make any sense.	5th graders tell idiotic jokes "They don't make any sense"
Researcher: Mhm. Alright so you told me a little bit about your past horseback riding experience but have you had other experiences with animals?	
Participant: Well yea. I mean, we have pets.	
Researcher: So you have pets at home?	Has pets at home
Participant: yea.	

Researcher: What kinds of pets do you have at home?	Has 2 cats and 1 dog
Participant: We have two cats and a dog	Cat is best friend
Researcher: Okay	Snuggles
Participant: Uh one of my cats is my best friends. He's named [Cat 1]. He snuggles with me a lot and he's just so cute and fat and he's, he's 14 years old but he acts like 2.	Old age but acts young
Researcher: Got it	Fat and snuggly
Participant: Got it, like he can jump high, he's fat, he's snuggly. He doesn't have like any problems and then, there's [Cat 2] who's a therapy cat.	Other cat – retired therapy cat
Researcher: That's awesome.	Other cat – fragile
Participant: He's more like the fragile, cuddly type the, cause like, [Cat 1]'s just like the, do what ever you want I'm just gunna snuggle with you. [Cat 2] is like the, I am the queen. I am, I am the queen. I am the ice queen, I am a good queen, but I am still THE. QUEEN.	Favorite cat let's you do whatever you want Other cat – is the Queen
Researcher: I've met cats like that before, yes, mhm	Nice queen
Participant: But like nice queen, you know?	Queen cat
Researcher: What do you-	
Participant: Like you my subjects ah. You can do what you want	
Researcher: You said [Cat 1] is your best friend, what do you love about [Cat 1]?	Favorite cat snuggles
Participant: He's just so, he always snuggles with me and, because the problems with [Cat 2] is that when I fidget, which I have to do, she generally moves because she's very very sensitive.	Other cat is sensitive to fidgeting, no snuggles
Researcher: Ah	
Participant: [Cat 1], I can, you can do anything. He's not that sensitive. Like he can feel it but he's just like not annoyed by it. So, and I love petting him and he's just so nice and soft. Like he's not like silky soft like [Cat 2]. [Cat 2] well is actually a retired therapy cat, when we moved to [Redacted] she kind of got ol- she was kind of old and also the	Favorite cat is not sensitive Soft, "silky soft"

drive to the hospital became a lot longer and she hates the, she's always hate the car. And there's a lot big difference between 30 seconds and 30 minutes

Cat hates long car rides

Researcher: It- Yes. Absolutely

Participant: Which it was. So when we moved, we kind of retired her. Though it's kind of sad because we still to this day get emails from people saying they want a therapy cat at the old hospital.

Cat retired

People miss cat

Researcher: There's so few therapy cats

Participant: I know! It's just weird. Because [Cat 2] has the ability to, when a person is crying always detect it and run over to them

Cat can detect sadness

Researcher: Wow

Responds to crying

Participant: She's just so nice about that. Like once, um the story was that she um, I wasn't here for it but uh, my mom was carrying her in her stroller and she jumped out of it, which she's not allowed to do. So she had, and she jumped on to a kids bed who was crying. And she just snuggled up close and the kid started petting here and the kid's tears kind of slowly stopped. And it turns out the kid had actually wanted a therapy cat but it seemed like there were none.

Nice cat

Cat uses stroller

Responds to crying

Relieves crying and sadness in others

Researcher: Yea, that's amazing. Animals are just the best.

Has dog

Participant: Yea. We also have our dog, who I don't like as much. Mainly because I have to, um, walk him. And I hate exercise.

Doesn't like dog as much

Hates exercise/walking dog

Researcher: Mmmm

Participant: I mean I know it's not the dog's fault but can't the dog go poop faster!

Dog doesn't follow schedule, poop faster!

Researcher: (laughter) So as an animal he's okay, but as a pet you don't like the responsibility?

Would like him more if they didn't have to be walked

Participant: yea. If you can just make it so that I don't have to walk him, who cares, I like him.

Researcher: Okay. Have you ever done, like other animal assisted therapy stuff?

No additional animal experiences

Participant: No.

Researcher: No? So this is your first experience kind of doing-
Participant: Yea.
Researcher: -this stuff? Would you describe yourself as an animal person?
Participant: Yea I like certain animals. Like I'm not that muddy person, you know? I'm not that kind of person who gets their hands dirty. But I love animals, like I especially like cats and dogs. But I'm not a person who is like afraid of animals, except three
Researcher: Okay
Participant: And that's because of trauma when I was young, anyways…
Researcher: Those are my four questions is there anything else that you want to tell me about
Participant: Okay what's your favorite video game?
Researcher: Alright I am going to turn our recorder off though, then you can tell me about the video games.

Likes animals but doesn't like to care for animals

Not the "kind of person who gets their hands dirty"

Not afraid of most animals

Past animal trauma, not generalized

Brian Interview #2

Brian was interviewed for a second time on 12/14/22 at 5:30. He had just completed his final riding session and met this researcher at Children's Hospital's North Campus for his interview. The interview was conducted in a private therapy office and Brian elected to not have his caregiver present for this interview.

Researcher: And it's on, there we go. Thank you for your patience. Okay. So these are my follow up questions from the last time. And let's just start with, tell me about the program.
Participant: It's great!
Researcher: Yea? What was… walk me through a session. What was it like? What did you do?
Participant: So first we had, uh, first we had a short cool down, okay, at the start. Then we did, uh, one, uh, cool down lap. Then there would be things postered up on the walls, which we would walk our horse around, stop at them, read them, move, stop them, read them, got it?
Researcher: Uhuh.
Participant: Um that was like our um, and then we'd do stretches
Researcher: Uhuh, on the horse?
Participant: Yea!
Researcher: Cool
Participant: And then we'd do a, then we'd be taught a skill. Then we'd do an activity including that skill. Then we'd, uh, do like a cool down lap.
Researcher: Okay
Participant: Um then we'd get off and groom our horses. Then we'd have a cool down inside. That was it.
Researcher: Wow. Okay I have a lot of follow up questions. The posters on the

Liked horseback riding

Frist cool down

Posters on wall

Walk horse, read posters

Stretches on horse

Learning activity

New skill

Cool down lap

Grooming the horse

wall, what were they? Were they different things every week?
Participant: Yes! Like today they were horse files, which is the first thing they were, like of our horses.
Researcher: Oh cool!
Participant: Like um it was just for today because normally we change. Like sometimes it was grooming tools, sometimes it was parts of a horse's body, you get the idea?
Researcher: Yes. Cool and then what was your new skills today that you learned? What was the last one?
Participant: Uh, we didn't really learn a new skill. It was all review
Researcher: Uhuh
Participant: Okay
Researcher: So you walked back through everything you learned today. What did you learn to do on the horse?
Participant: Uh I learned to stop
Researcher: Okay
Participant: Go back, uh turn
Researcher: Cool
Participant: Uh, go into two point.
Researcher: Two point, what's that?
Participant: It's like the thing people do when you're jumping. Got it?
Researcher: Ohh Okay
Participant: I learned how to slow my horse down
Researcher: Okay
Participant: I learned how to speed my horse up.
Researcher: Wow
Participant: I learned how to, uh, (mumbling to self) I learned how to uh well just move my horse
Researcher: Yea. So you learned to…. It sounds like you learned how to control the horse? Is that a good word? How to control it?
Participant: Yea!

Difference every week
Learned about the horse itself
Info changes
Grooming tools
Horse anatomy
Last session was review
Learned to stop
Turn
Two point
Two point
Slow down
Speed up
Learned to move the horse
Learned to control the horse

Researcher: What was it like being up there on the horse?	
Participant: It was great.	
Researcher: Yea? I would imagine that it is different than standing on the ground.	Great up on horse
Participant: Yes! Have you ever uh, ridden on a rollercoaster? Like a slow rollercoaster, you know? So imagine a rollercoaster that's walking forward slowly and it tilts back and forth. Back and forth. Back and forth. Back and forth.	Felt like a rollercoaster, a slow roller coaster Moving back and forth
Researcher: Okay	
Participant: That's how it felt.	
Researcher: Wow. How did you feel up there?	
Participant: Pretty great.	Felt "pretty great"
Researcher: Yea?	
Participant: Calm.	Felt "calm"
Researcher: It wasn't scary?	
Participant: No.	
Researcher: Not at all?	
Participant: Why would it be scary?	Not scared
Researcher: I don't know, some people are afraid of heights.	
Participant: I have anse-acrophobia	Has fear of unsecured heights
Researcher: What is that?	
Participant: I have a fear of unsecured heights	
Researcher: Unsecured heights. Oh your vocabulary is fantastic.	
Participant: I think that my, uh, that my brain thinks are unsecured. Which means that I'll go on any rollercoaster because my brain knows they're secured. You know?	Brain felt secure on horse Security is a perception
Researcher: Ahh	
Participant: But! I'm too scared to go on monkey bars	Scared of monkey bars
Researcher: I got it. So for the horse that didn't kick in at all?	
Participant: No because, first off, there's… it's literally like a two feet fall. You know?	Only 2 feet up
And you feel very balanced, you know?	Felt balanced
That's why, like, unsecured acrophobia is, again, how my brain thinks it and that's why	Brain perceived security

I hang on monkey bars actually really triggers it. You're not stabilized at all, you know?

Monkey bars don't feel stable/secure

Researcher: So you felt very stable and secure

Participant: Yea even though it was probably the same fall distance as the monkey bars, I was stable. Yea.

Horse felt stable/secure

Researcher: I would imagine, yea. It is. Did you- I think the last time we talked you mentioned a little bit about feeling a little frustrated that you were going too slow. How do you feel now, at the end?

Participant: Great!

Researcher: Yea. You learned everything you wanted to learn?

Feel great to be finished

Participant: Yea.

Researcher: Glad to hear that. What do you feel like change about you? Like what did you learn that had nothing to do with the horse maybe?

Learned everything

Participant: Uh…

Researcher: That's a hard question, right?

Participant: I mean, nothing. Nothing.

Only learned to ride the horse, no other connections

Researcher: Do you feel like you gained any skills…

Participant: Oh yea!

Researcher: … outside of horseback riding?

Participant: Uh… Uh…

Researcher: That's a tough question, right?

Participant: No.

Researcher: No? Okay. What… How do you see yourself using this in your future life?

Participant: Uh, by riding horses.

Researcher: You want to ride some more?

Wants to ride horses in the future

Participant: To calm, yea because it helps me calm down.

Riding is calm

Researcher: Oh. Tell me more about calming down.

Participant: It's just, because the horse is calm, then I get calm. I guess it feels nice to have somebody who actually listened to me, like, fully. You know?

Calm horse

Feels good to have horse listen

Researcher: Tell me more about that.

Participant: I finally… ‘cause as a child nobody really listens to me.	Nobody listens to children
Researcher: You told me a lot about that, yea.	
Participant: A horse does. Undeniably.	
Researcher: Yea, without a doubt. How do you know that the horse is listening?	Horses listen
Participant: Well it just does what I say.	
Researcher: Yea, you learned all the different commands and…	Horse does what I ask it to do
Participant: yea.	Command words communicate
Researcher: Horses don’t have words, so how do they communicate? How do you and the horse communicate?	
Participant: Uh, body language.	
Researcher: Ok	Body language communicates
Participant: Well they do. I speak to it. They can understand, like, if I say ‘walk up’, then they get faster. Easy means slow down. Walk on means actually move. A whoa means stop. Uh backup means backup. Uh…	Command words communicate
Researcher: So you had to learn each other’s language?	
Participant: Turn, you just have to like pull	
Researcher: Oh so a little bit of movement too.	Movement communicates
Participant: Two point you just have to hold them, you know? Like, there’s movement to all of the things but it’s also commands. Like, it’s commands and movement and the horse, you can tell they’re listening, like, you can tell by their body language.	Movement and words together communicate Body language shows they are listening
Researcher: Okay	
Participant: and they do what you say	
Researcher: yea. Did you have the same horse every week?	Same horse each week (relationship development)
Participant: Yes.	
Researcher: What was your horses name?	
Participant: Lucy.	Horse names Lucy
Researcher: Lucy? Did you like Lucy?	
Participant: yes.	Liked Lucy
Researcher: What kind of personality did she end up having?	

Participant: She's like… she's like…. This is juxtaposition but she is… she kind of likes going fast but she's also kind of shy.	Lucy is fast and shy
Researcher: Oh.	
Participant: Like she's shy but has a big personality.	Lucy has big personality
Researcher: I like that. Did you like that?	
Participant: Yea. Which is helpful because it doesn't mean she acts out, but it also means that if you get her going…	Liked her personality
Researcher: Okay. So was the horse listening to you the only thing that made you feel calm or were there things?	
Participant: Oh like the, um, like the motion of it	Motion of horse is calming
Researcher: It was soothing?	
Participant: Yea. Things like that.	
Researcher: Yea. I think I've heard that a horse's gait is similar to a human's gait. The way they, like, sock their hips back and forth	
Participant: Huh.	
Researcher: So the motion, the listening… anything else?	
Participant: I don't think so.	
Researcher: Yea, those are the two things that really helped you feel calm?	Nothing else to add
Participant: Yea.	
Researcher: Do you feel calm, even like after you get off the horse?	Confirming motion and listening are calming
Participant: Yea for a little bit.	
Researcher: Yea it stays with you a little?	Lasts a little while
Participant: Yea until something comes, which happens like immediately, so it doesn't really last but…	Something comes up "immediately" and it doesn't last
Researcher: Life. Comes at ya.	
Participant: Ok	
Researcher: So you would like to continue horseback riding as a really relaxing hobby	
Participant: Yea, sadly though, part of the study is that I can't horseback- I'm not allowed to do any activities including horses for 6 months	Wants to ride again, long wait (6 months)
Researcher: That's a long time to wait.	
Horse has a personality	

Participant: I mean like, why?	Questioning study protocol
Researcher: Well, I think 'cause they come back and they test…	
Participant: whether it helps later	
Researcher: …stuff again. Yea.	
Participant: Well I pretty sure it won't have	
Researcher: We'll see. Okay. I've got my last two questions here, which will still probably come with a whole bunch of other questions.	Doesn't think it will have lasting effects
Participant: yea	
Researcher: So, last interview you shared with me that you've done a couple different therapies. Social group, individual counseling, OT…	Comparing other therapies
Participant: yea	
Researcher: How does this compare? Do you want to take them one at a time?	
Participant: Uh, yes. So unlike OT and individual counseling, there's more than one person. Unlike social group, it's less than, like 6, so it's more individual.	Different due to size of group
Researcher: uhuh	
Participant: Uh, it was more of like a learning activities than actual… actual… you get what a mean?	More learning than therapy
Researcher: It wasn't, like, direct therapy?	
Participant: No it was just learning how to horseback ride and doing it.	Learning
Researcher: Yea	
Participant: But it just had therapeutic measures.	Had therapeutic benefits
Researcher: Yea	
Participant: But it wasn't like special. You know what I mean?	Not "special"
Researcher: I do get what you mean. That makes a lot of sense. So in counseling and OT you have very specific skills and activities that are therapeutic…	
Participant: Well and mainly just talking	
Researcher: and a lot of talking, yes. A lot of talking, but on the horse you didn't always have to talk or when you did it was really short	Therapy involves talking THR did not involve talking

Participant: No, no, no. You just did, you just learned. It was like a normal horse riding activity. You know? It wasn't like therapeutic, it wasn't specifically…

THR is learning to ride, not therapy

Researcher: Did you like that?
Participant: yea.
Researcher: yea? Would you recommend that to others?

Enjoyed

Participant: Yea.
Researcher: Even though you are a talkative person, it's still nice to do therapeutic activities where don't have to talk?

Would recommend to others

Participant: Uh well yea. Because I… and yea.

Therapeutic activities without talking are okay

Researcher: Yea? No further insights about that?
Participant: No. I mean, I don't mind either one, you know?
Researcher: mmhm. What do you think as far as socialization, right, compared to in a social group versus in this group. There was less kids your age but more adults.

Likes both approaches

Participant: Mhm. More ratio. Uh, the horse always listened, you get the idea…

Different ratio of kids to adults
Horse always listened

Researcher: Yea. So they're probably a pretty good person to practice socializing on cause they're really good listeners?
Participant: Yea.
Researcher: Hm. Okay.
Participant: If you're shy. If you're shy.
Researcher: If you're shy?

Confirming that horses can be good to practice socialization on

Participant: Like, I just like, if you were shy it would help.
Researcher: Okay. Like the horse would help?

Helpful to others who may be shy

Participant: Yea I think it would because it always listens. I don't know, I'm not shy, but…

Horse always listening would be helpful

Researcher: But if you were shy, you could see how it would help bring out somebody's personality a little
Participant: Yes
Researcher: Okay. How do you feel about the program being over?

Participant: Kind of sad. For two main reasons. One, I can no longer horseback ride. And two, and well I'll miss Lucy. And two, I no longer get to miss school!	Sad it is over – wants to ride again Will miss Lucy Will have to go back to school
Researcher: That was a bonus.	
Participant: Yea!	
Researcher: That was a bonus. So you, even when you get to horseback ride again, it might not be with Lucy	Missing school was a bonus
Participant: Yea…	
Researcher: And that's kind of disappointing	
Participant: Especially because the only reason we do this is because, there's closer horseback riding, you know. So…	Would choose someplace closer to home
Researcher: Oh yea.	
Participant: It's so sad.	Sad not to see Lucy
Researcher: Yea so when you do get a chance to ride again, you'll have to meet a new horse	
Participant: Yea	
Researcher: It's just like making new friends when you move, huh?	
Participant: Except I'm not very good at that. So 'cause I hate making new friends.	Not good at making friends Hates making friends
Researcher: But was it easier to make friends with Lucy than human friends?	
Participant: yes. Cause the friends I want listen. My best friend, well, is my best friend cause I'm super inflexible. My best friend is basically like the most flexible you can get.	Easier to make friends with horse versus humans Self aware of rigidity Best friend is opposite – very flexible
Researcher: Ah. Yin and yang?	
Participant: Except it's good, like basically it means that, like, sometimes it's problematic because he can never answer a question with an opinion. And because he's like 'I don't care, I don't care, I don't care, whatever you wanna do'	Being too flexible can be a problem
Researcher: Ok. Is there any similarity in the horse with that?	
Participant: No	Horse not comparable
Researcher: I mean I guess the horse can let you take control too?	
Participant: Yea but my best friend like there's a little bit more, uh, both thing… it's	Human relationship is more complex not control in my relationships. You get what I mean?

Researcher: I do, I do. Human relationships and animal-human relationships are clearly different, it's kind of a leap

Participant: Because I don't command, you know?

Doesn't need "control"

Researcher: Mhm, the way you command the horse?

Participant: Yea.

Researcher: Yea, yea that's definitely different.

Doesn't use commands with humans

Participant: It's also a problem because when I'm making a friend, I'm less flexible than when… then to a person that's already my friend

Commands are for horses

Researcher: Ah

Participant: So it's like, you get the idea. You know?

Less flexible with new people

Researcher: Uhuh.

Participant: Like I'm worse to people because why should I be flexible to you even if I don't know you. You've never done anything, you know…

More flexible with friends

Researcher: So you have to have a relationship with someone before you start being flexible?

"why should I be flexible to you even if I don't know you"

Participant: Yep!

Researcher: Yea.

Participant: Which means if they sometime don't wanna be my friends because they don't know that I'll become blah blah, anyways. Okay, next.

People have to earn flexibility

Researcher: Those were all my main questions

Participant: Cool, bye.

Being inflexible may be off putting

Researcher: We all finished?

Participant: Yup!

Appendix C

Field Notes

10/18/2022 at 4:15pm
Control Group (Barn Group) Observation
Module 2

- Participant's birthday today (not my interviewee)
- Children meet with Hannah 1:1 to get equipment put on, then transition to the next staff member for cortisol measurement.
- Before class: limit on activity to obtain baseline physiological data
    - Activities included putty
- Large room with square table and chairs around it
- Windows to the riding area are large, no horses were in there initially
    - At 4:25pm a riding group can now be seen through the window
- Large stuffed horse in a stable within the room
- 3 very different children
    - One non verbal youth, had a nose bleed requiring adult support at the beginning of class
    - 2 male, 1 female
- Each child has a volunteer sitting next to them, Marnelle = main teacher
- Group began ~5 minutes late (@4:21pm)
- Theme today: Safety: What to wear
- Uses a tiny horse named Tiny Blue Limoncello to take turns talking

"Why to we have to be safe around horses?"

- Use of pictures, works, and hand gestures in teaching
- Walking around the room during learning.
- Practice safe, gentle touch on the stuffed horse
- Use of stop and go signs to allow the children to review appropriate attire.
- Marnelle dressed up and had students rate her attire: what's wrong, what's right
- Different activities to teach the same things
- 2nd activity is a sorting activity with paper and glue
    - Paper clothing, sort into appropriate and not appropriate
- Adults are smiling, laughing, very engaging with youth
- 3rd activity – horse appropriate clothing word search
    - New words like 'bolo' had pictures with them
- 4th activity – observe riders through the window to evaluate what they are wearing.
    - The riders are a different group, around the same age with adult volunteers as well
- 5th activity – Pictures of clothing on the walls around the room
    - Walk around and give a thumbs up or down on if they could wear this riding
- 6th activity – Paper dolls, dress them up appropriately and not appropriately
- Interviewee was given a reading task instead because she is older and 'higher functioning'
    - Shared that she learned horses are social and can form attachments with other horses and humans
- Final activity – stretching and reviewing the rules for riding safely

- End with singing HBD to participant @ 5:11pm

"What did you enjoy today"

- 5:16pm – Marnelle and volunteers leave for 5 min quiet time
- Silly putty and coloring allowed
- No interaction with the 2 remaining adults who are setting up for the 2nd cortisol test
- You can hear Marnelle talking/debriefing with parents and caregivers in the next room though
- Stuffed horse is named Shiloh

10/19/22 at 3pm
Trial Group (THR)
Module 2

- 3 riders with 2 or 1 volunteer on each side of the horse
- 1 additional lead holding the reins of each horse
- Arena is indoors, sand covered, high ceilings with windows up high
- Parents watch from a room with a one way mirror
- Lots of help to teach children to mount as independently as possible
- Learning about the rules of the barn
- Rules are posted on the wall throughout the arena
- With their teams, the children ride slowly around and stop at each sign to read the rules
- All children get a full 45 minutes every class
- Researchers mark the time of mounting for each child
- 1 central riding instructor in the middle, giving commands and monitoring
- Stretching on the horse, lead instructor shows and explains
- Volunteers very encouraging, hard to be patient with slower learners
- Learning to stop the horse "whoa"
- Take a deep breathe and pause when you stop the horse
- Adults help the children communicate with the horse by reinforcing the instruction the child gives the horses

"why can't we just ride and not do lessons" (Interviewee: Brian)

- Brian is frustrated that they have to keep stopping
- Manure is removed immediately by another staff member
- Able to hug and pet the horse when they have to stop
- Today's focus is on steering the horse, communicating with the horse through your body and the reins
- Practice 1st by turning their heads
- Giving the older, calm presenting child some more advanced skills to try while the other 2 continue to work on steering the horse's head
- Brian is irritable today, crying on horse, arguing with his instructors
- As some children begin to master the skill, the volunteers loosen on their rein to allow the child to take over control of the ride

Obstacle Course! – weave through cones, circle barrel, stop in box

- Practice all the skills from last week and today
- Hand over hand when needed for child who is comfortable with that
- 3:45pm – cool down after all 3 children had a turn leading through the obstacle course
- Children then help take off the riding gear and groom the horses, carried the saddles to the wall
- Each horse has its own bow of grooming supplies

Appendix D

10-week Curriculum from Dr. Gabriels' Study

Module	Theme	THR Lesson Plan	Barn Activity Lesson Plan
1	Getting to know one another	Introductions & review horse safety rules. Holding reins correctly, basic riding position, halting and walking on, safely approaching and walking around horse. Learn the sitting trot.	Introductions & review horse safety rules. Safety rules work sheets. Take turns demonstrating safe vs. unsafe approaches with stuffed horse.
2	Many parts make a whole; Anatomy and gear	Learn steps involved in lengthening and shortening reins, steering a horse and sitting trot. Identify horses' ears, tail, mane, hoof, withers. Unbuckle girth & remove saddle & pad.	Learn clothing required to ride a horse. Identify horses' ears, tail, mane, hoof, withers. Glue riding clothing on cut-out person. Take turns identifying parts of horse on stuffed horse.
3	Talking with our bodies: Emotions and body language	Refine and improve steering and basic riding position Demonstrate basic arena figures including circling, half turn and change of rein across diagonal. Learn connection between horses' ears & feelings while grooming.	Learn horse emotion and body language. Human and horse emotion pictures to cut and paste on to emotion matching worksheet. Turn-taking activity: Demonstrate horse emotions by changing ear positions on stuffed horse.
4	Listening to our horses: Horse anatomy	Learn horse anatomy and how it relates to riding. How to adjust and correct rein length. Safe spacing and cues that tell us we are too close to another horse. Demonstrate aids for walking.	Learn horse anatomy. Word searches or coloring page on horse anatomy. Turn-taking activity: Taping labels of horse anatomy to appropriate area on stuffed horse.
5	Partnering with our horse: Grooming and speed changes	Learn circling for control. Learn the etiquette of passing another horse. Trot in two-point position. Discuss horse emotion and body language and notice horse color when passing other horses. Label grooming tools while grooming.	Learn names and proper use for grooming tools. Crossword puzzle and/or grooming riddle sheet. Turn-taking activity: Facilitator sprinkles baby powder on stuffed horse and participants take turns grooming it off.
6	Together we are strong: Teamwork and tacking	Work at the walk with less volunteer assistance. Learn the age of their horse and compare it to themselves and other horses in the group. Discuss	Learn horse needs and parts of the saddle and bridle. How to take care of a horse art activity. Turn taking game identifying

		horses' need for food, water and shelter.	parts of the bridle and saddle on the stuffed horse.
7	Picking up on subtleties: Horse Colorado and markings	Participants "form a ride" keeping safe spacing while working together. Attempt posting at the trot. Introduce horse characteristics (e.g., color, markings)	Learn horse coloring combinations. Word scramble, crossword puzzle or matching activity. Turn-taking game: Matching pictures of horses with correct labels.
8	Be yourself: Horse breeds	Use skills learned to "form a ride" and go on trial ride or to a different arena to ride through trail obstacles. Name their horse's breed and 3 characteristics of the breed.	Learn different breeds of horses. Individual project: Word scramble and matching exercise with different breeds. Group activity: Pin the horse breed on the picture.
9	Adding it all up: Measurement	Continued work on horsemanship skills. Posting trot for advanced groups. Learn to measure their horses' height in hands.	Learn to measure horses in hands. Crossword puzzle and outline of child's body on butcher paper to measure how tall they are in hands. Measuring height of stuffed horse.
10	Celebrate your work!	Review skills learned, certificate & picture of horse, closure activity with horse and volunteers.	Review skills learned, horse mounting activity on mounting barrel, certificates and closure activity with volunteers.

Appendix E
Recruitment Flyer

Dear Participant,

My name is Tiffany Banks and I am a researcher from Colorado State University in the Social Work department. We are conducting a research study on the impact of animal-assisted therapy on youth with Autism. The title of our project is *Animals and Autism: A Critical Review of Evidence*. The Principal Investigator is Helen Holmquist-Johnson (Human Animal Bond in Colorado and School of Social Work) and I am the Co-Principal Investigator, Tiffany Banks (Doctoral Candidate at the School of Social Work).

We would like you to consider an optional addition to your current participation in the research study at Hearts in Horses. This study intends to interview the youth participants on their opinions and experiences in the therapeutic horseback riding program. Participation will consist of 2 interviews lasting at least 30 minutes. These interviews may be completed in shorter, more frequent interviews to meet your child's needs. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

We will take all precautions to protect you and your child's private health information. When we report and share the data to others, we will combine the data from all participants and remove any identifying information. While there are no direct benefits to you, we hope to gain more knowledge on how and why animal-assisted therapy impacts youth with Autism. You will receive a $10.00 gift card after completion of each interview as a thank you for your time and participation.

It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential (but unknown) risks.
If you have any questions about the research, please contact Tiffany Banks at tnbanks@colostate.edu or Helen Holmquist-Johnson at Helen.Holmquist-Johnson@ColoState.edu. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Dr. Helen Holmquist-Johnson
Principal Investigator

Tiffany Banks, MSW, LCSW, ABD
Co-investigator

If you are interested in having your child participate, please contact Tiffany Banks at 410-900-5911 or tnbanks@colostate.edu to schedule your in person appointment.

Appendix F
Assent Form

Hello and welcome!

I'm a student at Colorado State University. I study the relationship between animals and humans like you. This is called research. My research is about the experience of therapeutic horseback riding and what it means to the young people who participate. I am asking you if it is OK that I ask you questions about your experiences for my study.

If you say it is OK, we will meet at least two times. During these meetings I will ask you questions about your life and record our conversation. There are no right or wrong answers, and you can decide to skip a question or end our conversation at any time. Each meeting will last around 30 minutes but could be longer or shorter. You can decide if you would like to talk with me by yourself, or you can invite whoever brought you here today to join you.

Agreeing to be in this project cannot hurt you. It won't help you, either. You don't have to do it. If you say "yes" now but later change your mind, you can stop being in the research any time by just telling me. When you finish each meeting with me, you will get a $10.00 gift card to thank you for helping me.

I will ask your parents if it is OK that you do this, too. If you want to be in this research, sign your name and write today's date on the line below.

_____ _____
Participant Date

_____ _____
Researcher Date

Appendix G
Consent Form

Consent to Participate in a Research Study
Colorado State University

Study Title: Animals and Autism: A critical review of evidence
Principal Investigator: Dr. Helen Holmquist-Johnson
Co-investigator: Tiffany Banks, MSW, LCSW, PhD Candidate

Your child may be eligible to take part in a research study. The information that will be discussed gives you important information about the study. It describes the purpose of this research study, and the risks and possible benefits of participating.

Why are you being invited to take part in this study?

Your child is being invited to take part in this research study because they are a participant in the therapeutic horseback riding research program at [redacted].

What is the purpose of this research study?

We are conducting research on the real-life experiences of individuals with Autism who have engaged in animal-assisted therapy. The purpose of this research is to better understand, from their perspective, how and why animals impact their lives.

What is involved in the study?

If you agree to have your child take part in this study, we will ask them to engage in recorded interview sessions to answer a few questions about their experiences. If you and your child agree, the interviews consist of 4 questions and will be conducted in-person. It is estimated that the interviews will last at least 30 minutes and will be scheduled at your convenience. Interviews may be broken into shorter, more frequent sessions based on your child's needs and preferences. Participants who can, will be interviewed one-on-one without a parent/guardian/caregiver present to provide them with privacy and confidentiality. If you or your child feel that they would benefit from the presence of an adult support for any reason, you are invited to be present and observe the interview.

What are the risks and benefits of this study?

As with any study involving collection of data, there is the possibility your confidential information will be shared with others. Every precaution will be taken to secure your personal information to ensure confidentiality. There will be no direct benefit to you or your child from taking part in this study. The knowledge gained from this study may help enhance our understanding of the human-animal bond.

Audio Recording: The interview will be recorded. No one other than the research team will hear the recordings. If someone's name is mentioned, it will not be included in any published material.

Risks associated with audio recording: The main risk to you and your child is that someone could find out they were in this study. I will do my best to keep your information confidential, so I believe this risk to be very low. Some people may feel uncomfortable having the interview recorded. Your child may skip any question or stop the interview at any time.

Do you need to give your consent in order to participate?

By signing below, you are indicating that you have had your questions answered, and you agree to have your child take part in this research study.

Participation in this study is voluntary. If you decide not to take part or if you change your mind later there will be no penalties or loss of any benefits to which you are otherwise entitled. You can stop the interview at any time.

What about privacy and confidentiality?

We will do our best to keep your personal information private and confidential. However, we cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law.

The results of this study will be utilized as part of the co-investigator's doctoral dissertation. Identifiers will be removed from all data collected from this project and will not be used or distributed for future research studies. We will keep your identity private in any presentation or written assignment about the study.

Financial Information

Each participant will receive a $10.00 gift card upon completion of each interview.

What if you have questions about the study?

If you have questions about this specific study, you may contact:
Co-investigator (Tiffany Banks; tnbanks@colostate.edu)
Primary Investigator (Helen Holmquist-Johnson; Helen.Holmquist-Johnson@ColoState.EDU)
The Colorado State University Institutional Review Board (csu_irb@colostate.edu)

*PARENTAL SIGNATURE FOR MINOR

As parent or guardian, I authorize _____ (print minor's name) to become a participant for the described research. The nature and general purpose of the project have been satisfactorily explained to me by _____ (print name of research staff reviewing form) and I am satisfied that proper precautions will be observed.

_____ _____
Minor's name Minor's date of birth

_____ _____
Parent/Guardian name (printed) Phone number/Email

_____ _____
Parent/Guardian signature Date

----------Use the following only if applicable----------
Signature Line Below for studies including children ages 13-17 who can read this form.

Note: children 7-12 should sign a SEPARATE Assent Form.

Signature: _____ Date:
(Child Subject 13-17 years old; In addition to Parent Signature)

Print Name: _____

Appendix H

Interview Guide

Below are the two research questions that are guiding this project. They are included as a reference that will guide the interview guide creation. Each interview will consist of four questions. Examples of follow up questions or reframed wording for different developmental levels is included below each question.

What are the experiences of individuals, diagnosed with ASD, who engage with animal-assisted interventions?

How do experiences with animal-assisted interventions impact the lives of people with autism?

1st interview
Interview Guide:

1. What are your feelings about being in the study so far?
    a. Do you feel any pressure associated with participating?
    b. What do you think about being in the study?
    c. Why this study?
2. What are you hoping to learn from being in the 10-week study?
    a. How will you know that treatment has impacted/helped you?
    b. What are your expectations from participating in the study?
3. What, if any, therapies have you engaged in previously?
    a. Tell me about your experiences with these other therapies.
    b. What role did you have in selecting your therapies?
    c. In your opinion, what were the most/least effective parts of these therapies?
4. Tell me about any previous experiences you have had with animals?
    a. Do you have previous experiences with animal-assisted therapies?
    b. Do you have previous experiences with horseback riding?

2nd interview
Interview Guide:

1. Tell me about your experience over the last 10 weeks
    a. How did this therapy make you feel?
    b. What parts of the program did you enjoy, if any?
    c. What parts of the program did you not enjoy, if any?
    d. Walk me through a typical session.
2. What do you feel you have learned during the 10-week study?
    a. What has changed since participating in this study if anything?
    b. Tell me about an experience you didn't expect?
    c. How will you apply this to the future?

    d. Follow ups can be specific to: What did you learn about interacting with others, what did you learn about your emotions?
3. In our last interview you reported (insert information from question 3), how does this compare to previous treatments you have participated in?
    a. *Follow ups will depend on respondents' previous experiences shared during the first interview*
4. How do you feel about the program being over?
    a. Would you want to continue this kind of therapy? Why or why not.
    b. What about this experience would help you decide if you would or would not recommend this program to others?
    c. What is next for you?

Appendix I
Zones of Regulation Feelings Chart

Supplementary Reproducible E for Elementary Ages

THE ZONES OF REGULATION

The ZONES of Regulation

Blue Zone	Green Zone	Yellow Zone	Red Zone
Sad	Happy	Worried	Overjoyed/Elated
Bored	Focused	Frustrated	Panicked
Tired	Calm	Silly	Angry
Sick	Proud	Excited	Terrified