

THESIS

PARENTAL PERSPECTIVES OF OCCUPATIONAL THERAPY IN AN EQUINE
ENVIRONMENT FOR CHILDREN WITH AUTISM SPECTRUM DISORDER: A
THEORETICAL QUALITATIVE ANALYSIS

Submitted by

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In partial fulfillment of the requirements

For the Degree of Master of Science

Colorado State University

Fort Collins, Colorado

Summer 2019

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ABSTRACT

PARENTAL PERSPECTIVES OF OCCUPATIONAL THERAPY IN AN EQUINE ENVIRONMENT FOR CHILDREN WITH AUTISM SPECTRUM DISORDER: A THEORETICAL QUALITATIVE ANALYSIS

Objective: Children with autism spectrum disorder (ASD) experience difficulties in occupational performance, which can limit the abilities of both the child and family to participate in valued activities and roles. Occupational therapists have provided equine-assisted interventions (EAIs) to children with ASD to address these difficulties with promising results. The purpose of this study was to assess parental perspectives on the appropriateness of a novel EAI, occupational therapy in an equine environment (OTee). Appropriateness includes the psychosocial aspects of the consumer's experience and whether the consumer believes the intervention beneficially addressed their healthcare needs (Evans, 2003).

Method: This thesis is comprised of three chapters. The first chapter is an introduction to the study that provides an extensive review of the literature, develops a conceptual framework of appropriateness, and describes research methods. The second chapter is a manuscript written for submission to the journal *Occupational Therapy in Healthcare* in which I present a condensed version of the complete thesis. I employed qualitative theoretical analysis to analyze parental perspectives on the appropriateness of OTee. Five parents completed semi-structured interviews in which they discussed their child's experience of the service and the influence of their child's participation on their child's and family's daily lives. The third chapter is a reflection on the

thesis process in which I additionally consider the contribution of this thesis to the field of occupational therapy and the influence completing this thesis had on me as a scholar and person.

Results: Regarding the results of the second chapter, children experienced the service positively due to qualities of the horse and the occupational therapists' ability to integrate tenants of occupational therapy. Prominent areas of carryover to everyday life included an increase in calmness, an increase in social skills, facilitating the parent role, and promoting positive family experiences, among others. The frequency and length of the service, as well as maintenance of effects, concerned the parents.

Conclusion: Findings contribute information on the development of a novel approach to occupational therapy intervention that incorporates horses. Next research steps include examining areas of concern and comparing the appropriateness of the service to the appropriateness of occupational therapy in a traditional service context.

ACKNOWLEDGEMENTS

Thank you to Hearts and Horses and the occupational therapists who delivered the service for the work you do incorporating horses into treatment to improve client's health and well-being.

Thank you to the participants in my thesis, without whom none of this would have been possible.

Thank you to Dr. Wendy Wood, the exemplary advisor. Your enthusiasm for occupational therapy, horses, and research is infectious and energizing. Your kindness and ability to support me while simultaneously allowing me to struggle, and thus grow, is deeply appreciated. Thank you to Dr. Caiti Peters, the model mentor. You have been generous with your time, endlessly patient with my questions, and uplifting when providing guidance. In all aspects of work and life, these women do all they do to the highest caliber, and they do it all with a smile on their face. I am eternally grateful to call these powerful women my mentors and my friends.

Thank you to my committee members. Dr. Sample, your expertise in qualitative research and tenacity in ensuring I remain true to the data and critical of my choice of words helped grow me into an analytical researcher and precise writer. Dr. Hepburn, your expertise in the area of children with autism and families has contributed enormously.

Thank you to my occupational therapy cohort and the forever friends I have made in this program. You have served as life coaches, peer reviewers, and partners in pursuing occupational balance. Thank you especially to Ashley Combs, Christine Dawson, Justine Cawthorne, Becca Lassel, and Emma Kroger for the role they played in my completion of this thesis.

DEDICATION

This thesis is dedicated to my mother and father. Your endless love and support have made all things possible.

Thank you for teaching me to do my best, to love unconditionally, and to cherish a little nonsense, now and then.

ABOUT THE AUTHORS

Dorothy Kalmbach, MSOT is a recent graduate with a passion for pediatrics and an advocate for the inclusion of animals into skilled occupational therapy services.

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Wendy Wood, PhD., OTR, FAOTA is currently Professor of Equine Sciences and Occupational Therapy and the Director of Research of the Temple Grandin Equine Center at Colorado State University. Dr. Wood has extensively published her scholarship and research on topics that include leadership and professionalism in occupational therapy, curriculum development in occupational therapy, quality of life of older adults with dementia, and the incorporation of horses in services to benefit people. She has also played leadership roles in developing innovative entry-level professional degree programs in occupational therapy, as well as PhD programs in occupational science and rehabilitation science. Over her career, Dr. Wood's colleagues have invited her to deliver numerous honorary lectures and keynote addresses nationally and internationally, most recently the 2018 Ruth Zemke Lectureship in Occupational Science and the 2019 Lyle Spelbring Lecture. One of her greatest joys today is mentoring occupational therapy's future scholars and leaders. Owing to these and other contributions, the American Occupational Therapy Association recognized Dr. Wood in 2017 as one of 100 influential people in the first 100 years of the profession of occupational therapy.

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CHAPTER ONE: INTRODUCTION

The purpose of this thesis is to examine the parental perspectives of the appropriateness of occupational therapy in an equine environment (OTee) for children with autism spectrum disorder (ASD). OTee is a novel intervention that integrates unique aspects of the equine environment, activities on and off the horse, and characteristics of the horse to target difficulties in occupational performance. Appropriateness is how the recipient of a service perceives its impact (Evans, 2003). The consideration of appropriateness aligns with the profession of occupational therapy's value of being client-centered (American Occupational Therapy Association, 2014).

With the guidance of the chair of my thesis committee, Dr. Wendy Wood, I have selected a non-traditional format for this thesis. Therefore, elements of this thesis are as follows.

- Chapter One. I begin this chapter here by introducing the structure of the thesis as a whole. The remaining bulk of this chapter provides an extensive introduction to the study that I conducted. This chapter was originally submitted as a proposal for this thesis, and it has been updated based on feedback from my committee. This introduction begins with the problem that my study addressed, which I defined as existing not only for the child but also for the child's family. Following this explanation is an overview of treatment options for children with ASD that includes a look into animal-assisted interventions, especially those including horses. The considerations of children with ASD, their family, and treatment options that affect these parties build my conceptual framework in which I define appropriateness. I use parental perspectives to investigate the appropriateness of OTee for children with ASD.

- Chapter Two. In this chapter I present a manuscript acceptable for submission to the journal *Occupational Therapy in Healthcare*. Rather than completing a traditional five-chapter thesis, I have chosen to distill the thesis into a more concise product. Doing so has enabled me to present the most essential elements of the thesis and move toward my goal of publication.
- Chapter Three. This third chapter is a reflection on the research process, this thesis's contribution to the profession of occupational therapy, and my development as a student and person.

Statement of the Problem

One in 59 children in the United States is estimated to have ASD (Centers for Disease Control and Prevention, 2018). This developmental disorder is characterized by chronic deficits in social communication and social interaction and restrictive and repetitive behaviors, interests, or activities (American Psychiatric Association, 2013). Children with ASD frequently exhibit problematic behaviors described in the literature as hyperactive (i.e., impulsive, distractible, or excessively active) or irritable (i.e., engaging in self-injury or aggression, crying, yelling, and throwing) (Kaat, Lecavalier, & Aman, 2014). Children with ASD experience difficulties in occupational performance connected to these impairments including difficulties in developing, maintaining, and understanding relationships; playing with peers; maintaining safety in community outings; transitioning to non-preferred activities; and experiencing extreme distress to small change (American Psychiatric Association, 2013; Peters, Wood, & Hepburn, 2019).

These deficits and problems can limit the abilities of both children with ASD and their families to participate in valued activities and roles. For the child, these deficits create barriers to participation in play with peers and participation in the student role (Ashburner, Ziviani, &

Rodger, 2010; Ziviani, Rodger, & Peters, 2005). For parents, the challenges of raising a child with ASD can lead to decreased social participation, lifestyle imbalance, and a low sense of self-efficacy in the parenting role (Stein, Foran, & Cermak, 2011). Other potentially adverse consequences of parenting a child with ASD include increased mental health problems compared to other parents, including those of children with other kinds of disabling conditions. Companion to these issues is the important task of searching for interventions and choosing one for their child, a process that has been described as overwhelming and confusing (Grant, Rodger, & Hoffmann, 2016).

The adverse consequences described previously by Stein et al. (2011) may be due to any number of stressors. Bloch and Weinstein (2009) synthesize such stressors in their discussion of the impact of ASD on the family system. Raising a child with ASD impacts the family globally. Parents and siblings alike experience challenges when a family member has the unique deficits and problems commonly present in ASD.

Though children with ASD may have significant deficits, for the most part, they do not differ from typically developing children in their outward appearance. Thus, these deficits are imperceptible to the uninformed observer. As a result, families often experience stress in public situations when their child exhibits disruptive or socially inappropriate behaviors as observers may be prone to attribute the child's conduct to bad parenting (Bloch & Weinstein, 2009). These incidents serve as a continuous, painful reminder of the child's disability to the family. Parents may be inclined to avoid these incidents and abstain from going out in public, which contributes to the social isolation experienced by families with a child with ASD. Further, the parents of the child with ASD may not have the opportunity to participate in events in the community as their invitations to social gatherings may dwindle due to these behaviors (Gray, 2002). Stressful

events are not limited to interactions with outsiders. Autism profoundly impacts the most mundane moments of intimate, daily family life as well.

The neurological deficits underlying the behavioral and sensory issues of the child with ASD profoundly impact the family's life through difficulties in the child completing daily occupations including eating, dressing, and rest (Bloch & Weinstein, 2009). Families with a child with ASD have difficulty managing their family functioning as many of these families are forced to rely on rigid routines tailored to the needs of the child with ASD (DeGrace, 2004). These patterns of routines are so strict that they interfere with the family's ability to create and engage in positive family occupations. For example, families may choose not to go on vacation or out to dinner knowing that the change in routine will only cause distress. Changes in routine are especially difficult for children with ASD. Adjustments that may be considered negligible to most, such as having to run to the grocery store to acquire a last-minute ingredient for a meal, could precipitate a major behavioral meltdown.

Further, some children with ASD are limited in functional communication which may negatively impact parents (Siklos & Kerns, 2006). Children who experience challenges in communicating may have difficulty conveying affection for parents in a typical manner, depriving parents of the affirmation enjoyed by many who parent typically developing children or even children with other disabilities (Bloch & Weinstein, 2009).

Yet another disruption to family life is the time and effort required of a parent to secure or provide transportation for their child to attend all the therapies and services they may receive (Bloch & Weinstein, 2009). One study found that parents were using an average of seven treatments simultaneously (Green, Pituch, Itchon, Choi, O'Reilly, et al., 2006). Some therapies can be provided at home, cutting down on transportation needs (Bloch & Weinstein, 2009).

However, having unfamiliar personnel in the home presents a new stressor to the family. The presence of service providers may cause parents and siblings to feel an invasion of privacy or dissolution of the boundaries they are accustomed to experiencing with healthcare professionals.

Siblings of children with ASD are affected as part of the family but also as unique individuals. Bloch, Margolis, and Seitz (1994) examined the experience of siblings of a child with ASD and discussed how these could be negative or positive. Children may feel embarrassment over the range of extreme or unusual behaviors exhibited by their siblings with ASD. The typically developing child may shoulder the burden of success as they feel they must meet their parents' expectations twice over. Siblings may feel the effects of decreased participation in social events as they are limited in opportunities to spend time with extended family. However, the typical child may experience some benefits in having a sibling with ASD. Some children build strengths and skills through the process of effectively coping with this family stressor, which serves them well throughout life. It has been suggested that children who have a sibling with ASD may be more likely to have a positive self-concept as well as increased care-taking and interpersonal skills (Bloch et al., 1994; Macks & Reeve, 2007). The early life experience of living with a sibling with ASD and employing coping strategies often shapes siblings' development, and many of these children grow up to be compassionate, empathetic adults (Bloch et al., 1994). Like their children, parents of children with ASD may also gain strength through coping with their new role.

There is a growing body of literature suggesting that individuals may experience benefits including growth and personal development as a result of facing adversity (Joseph & Linley, 2006). Many parents of children with ASD report a wide range of positive changes resultant of their uniquely challenging experience as it has transformed them as a person and as a parent for

the better. Additionally, these parents have reported that in coping with the challenges presented by parenting a child with ASD, their self-esteem, knowledge, skills, competence, insight, and family balance have improved. In facing the daily challenges inherent in this role, individuals report increasing communication skills, being more insightful parents to their other children, and taking on a new role as advocate. Indeed, many parents employ their new skills and personal growth by joining advocacy groups for the autism community (Bloch & Weinstein, 2009).

Though possibilities for personal growth exist, the experience of parenting a child with ASD is likely to impact the family and the family's daily functioning negatively. This impact on the family's function is an important consideration as there is a reciprocal relationship between child and family functioning (Karst & Van Hecke, 2012). Family factors even have been implicated in lessening or nullifying positive outcomes of interventions for children with ASD. In a study by Osborne, McHugh, Saunders, and Reed (2008), parental stress was associated with reduced effectiveness of early intervention for children with ASD.

Treatment Approaches for Children with ASD

A vast variety of treatment approaches exist and are being developed that aim to diminish the impact of symptoms of ASD on the child's daily functioning. Over one-hundred approaches have been involved in the treatment of autism ranging from pharmacological interventions, to specialized diets and vitamins, to therapies both traditional and alternative, to specific educational approaches, and more (Green et al., 2006). Despite the diverse array of treatments, there is no agreement to date as to which treatment is most effective nor does a single approach exist for the universal treatment of all barriers to participation in valued activities and roles experienced by children with ASD (National Research Council, 2001; Warren et al., 2011).

Animal-assisted interventions for this population are growing in popularity, however, and animals may hold special power for children with autism.

Animal-assisted Interventions

Numerous interventions have been developed on the basis of the strong belief that relationships with animals contribute to the well-being of humans (Fine & Beck, 2015). Interventions developed to leverage this belief are commonly referred to as animal-assisted interventions (AAIs). AAIs are defined as “any intervention that intentionally includes or incorporates animals as part of a therapeutic or ameliorative process or milieu” (Kruger & Serpell, 2006, p. 25). Animals can provide relaxation and social support to the people with whom they interact. In 1980, Friedmann, Katcher, Lynch, and Thomas completed a revolutionary study that found that pet owners in a cardiac unit lived longer than their fellow patients who did not own pets (Serpell, 2015). This study sparked research on the therapeutic benefits of animal companionship and the mechanisms that may explain these benefits.

Serpell (2015) asserted that two mechanisms are commonly considered to explain what is responsible for the health promoting effects of animals. First, animals can induce a physiologically de-arousing state of relaxation simply by attracting and holding our attention (Katcher, Friedmann, Beck, & Lynch, 1983). Second, companion animals can provide individuals with social support, a buffer to stress and facilitator of improved human health and survival (Serpell, 2015). A final mechanism to consider is the power of animals to facilitate increased social interaction among humans. The capacity of animals to act as ‘social lubricant’ has been demonstrated in multiple studies of the ASD population (O’Haire, 2013). In one such study, children with ASD demonstrated more social interaction, prosocial behaviors, and positive

affect in the presence of animals, as compared to in the presence of toys (O'Haire, McKenzie, Beck, & Slaughter, 2013).

As early as 1699, John Locke espoused the belief that a nurturing relationship with an animal could serve an important role in the socialization of children (Serpell, 2015). Recent research demonstrates that this dynamic is likely for children with ASD as well. For example, introducing a pet into the home of a child with ASD has been associated with heightened empathy and prosocial behavior in the child (Grandgeorge et al., 2012). Additionally, the inclusion of a service dog in the home has been associated with improved mood and sense of well-being among the child with ASD and his or her family members (Burrows, Adams, & Spiers, 2008). Physiological data supports the therapeutic effect of animals on families with a child with a developmental disability (Friedmann, Son, & Saleem, 2015). In a study by Viau et al. (2010), stress levels in families of children with ASD were measured by cortisol awakening responses and recorded before, during, and after the family was given a therapy dog. When the dog was introduced to the family, their typically high levels of cortisol were suppressed. When the dog was taken away, these levels reverted to their preintervention quantities.

Over centuries, a diverse array of animals has come to be regarded as therapeutic to a variety of individuals. The horse in particular has received attention for its extraordinary affordances. Not only is the horse typically regarded as captivating due to its stature and beauty, but it allows for multiple therapeutic uses: petting, grooming, riding, and so on (Hart & Yamamoto, 2015). Riding a horse provides physical opportunities including a unique sensation and physical challenge (Hart, 1992). Instructors of equine-assisted therapies (EATs) highlight the unique attributes of the horse as being motivating to participants and an advantage in facilitating treatments (Hart & Yamamoto, 2015). For children who are distractible and hyperactive, the

presence of a horse may calm children and capture and hold their attention to enhance participation in therapy. Additionally, working with horses is social by nature. Not only is interaction with the horse social in itself, in order to access and ride the horse, the individual must interact with a therapist, the volunteers, staff, other participants, or animal handlers.

In particular, equine-assisted interventions (EAI) have increased in popularity as a service for children with ASD. As reported in 2007, as many as 11% of parents caring for children with ASD had tried some variety of EAI (Thomas, Morrissey, & McLaurin, 2007). Rigorous research on EAI is relatively new and wanting: the first published EAI study was as recent as 2003, and as of 2015, only 33 published studies were available (McDaniel Peters & Wood, 2017). To my knowledge, only four studies have investigated an EAI for children with ASD provided by an occupational therapist, and the terms used to describe these interventions differ.

Occupational Therapy and Horses

A handful of studies have examined EATs for children with ASD delivered by occupational therapists specifically. These studies have produced results that indicate these interventions may have a positive impact on the child's everyday life.

Memishevikj and Hodzhikj (2010) reported "equine-assisted therapy" improved core autism symptoms of some participants across domains of speech, socialization, sensory and cognitive awareness. Two studies found that "hippotherapy" provided by an occupational therapist resulted in improvements in fine and gross motor skills of children with ASD, leading to improved performance and participation in daily activities (Ajzenman, Standeven, & Shurtleff, 2013; Liddiard, 2009). More specifically, in the study carried out by Ajzenman et al. (2013), the children with ASD experienced a significant increase in the adaptive behaviors of receptive

communication and coping as well as an increase in participation in daily activities of self-care, low-demand leisure, and social interactions.

Llambias, Magill-Evans, Smith, and Warren (2016) investigated the effects of “equine-assisted occupational therapy” on engagement in children with ASD. Engagement is the active and intentional interaction with the environment (including people and objects), and it is a precursor to learning and development. The authors employed a multiple-baseline design and measured engagement at baseline, during intervention, and at follow-up. Activities at baseline and follow-up were in a play room and activities at intervention were with or related to a horse. Analyses of randomly selected digital video recordings at each phase documented increased engagement of the children with ASD during intervention and follow-up compared to their baseline levels. Importantly, this increased engagement generalized to a child’s behavior in a playroom. Additionally, parents and teachers of the children participating in the intervention reported positive effects of the intervention including more initiation of communication, new words, or longer sentences; improved behaviors at school such as smoother transitions; and improved mood. Furthermore, Llambias et al. (2016) proposed that equine-assisted occupational therapy may be a “good fit” for children with ASD as these effects were observed early in the intervention (p. 6).

In essence, these studies produced findings relevant to the influence of the EATs delivered by occupational therapists on the child’s everyday life. In studies of EATs delivered by occupational therapists, children with ASD improved in overall adaptive behavior, social interactions, self-care, and low demand leisure occupations (Ajzenman et al., 2013); fine and gross motor functional skills (Liddiard, 2009); psychosocial dimensions (Memishevikj & Hodzhikj, 2010); and engagement (Llambias et al., 2016).

Findings from these studies begin to paint a picture of how EATs delivered by occupational therapists may positively impact the everyday life of children with ASD. Notably, only one intervention indicated the involvement of occupational therapy principles specifically in its name (Llambias et al., 2016). Thus, it is difficult to assess whether occupational therapy interventions that incorporate horses are effective for this population. While these interventions share some similarities to the one investigated in the current study, OTee is a novel approach that integrates occupational therapy and the affordances of the equine environment in a way that, to our knowledge, has not been studied. As a novel approach to intervention, there is a need to address its appropriateness to further its basic scientific development.

A Conceptual Model of Appropriateness

Many studies of healthcare interventions are limited in that they examine only efficacy or effectiveness. This focus of examination is incomplete because it is also necessary to know whether or not an intervention is appropriate for its consumer (Evans, 2003). Questions of appropriateness address the “impact of the intervention from the perspective of its recipient” by examining its “psychosocial aspects” (Evans, 2003, p. 81). To determine appropriateness, three questions need to be answered: “What is the experience of the consumer?” “What health issues are important to the consumer?” And, “does the consumer view the outcomes as beneficial?” (Evans, 2003, p. 81).

The concept of appropriateness is often used interchangeably with that of acceptability. Indeed, in studies examining the appropriateness or acceptability of healthcare interventions, these terms are used to define one another (Evans, 2003; Sekhon, Cartwright, & Francis, 2017). I have chosen to use the word appropriateness in this thesis due to the congruence between the questions Evans (2003) proposes asking and the questions we asked participants in the study.

In the case of occupational therapy services for children, both the child and the family are considered to clients, or recipients of services (Fisher, 2009). As a novel intervention, I am interested in studying OTee's appropriateness to ascertain if it is perceived as meeting the needs of the child with ASD and their families. This objective aligns with occupational therapy's value of client-centeredness. My examination of appropriateness will combine parental perspectives on their child's experience of the service as well as the relationship between the service and their child's everyday life and family's everyday life, as illustrated in Figure 1.

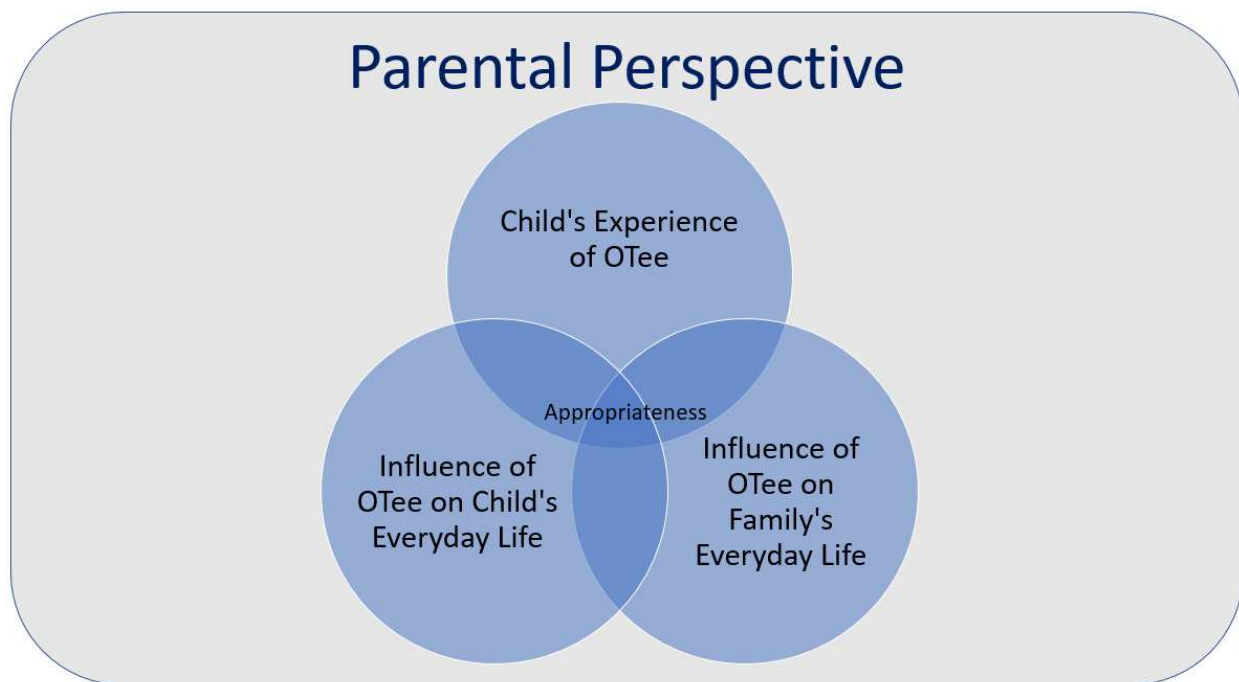


Figure 1. A conceptual model of appropriateness.

Research questions

The following research questions were developed to guide the process of inquiry:

1. How do parents of children with ASD perceive their child's experience of participation in ten weeks of occupational therapy in an equine environment?
2. How do parents of children with ASD perceive the influence of this intervention on their child's everyday life?

3. How do parents of children with ASD perceive the influence of this intervention on their family's everyday life?

Methods

The study proposed in this thesis stems from the mixed methods study that investigated the efficacy of OTee on social, behavioral, and occupational functioning of children with ASD, which influenced the methods of the current study (Peters, Wood, Hepburn, & Bundy, in review). In the efficacy study, seven children with a diagnosis of ASD between the ages of six and thirteen participated in a no-treatment baseline phase followed by ten weeks of OTee. Quantitative analysis found that following the ten-week OTee intervention, all children improved in their individual occupational performance goals and demonstrated a statistically significant improvement in social motivation and social communication scores. Additionally, four of the seven participants demonstrated decreased irritable and hyperactive behavior (Peters et al., in review.)

This exploratory study proposes to investigate the parental perspectives on the appropriateness of a ten-week intervention of OTee for their child with ASD. I will achieve this by conducting semi-structured interviews with parents whose child with ASD completed this intervention for the larger efficacy study. The interview questions are framed on Evans's (2003) definition of appropriateness and address, from the parental perspective, the child's experience of OTee, the influence of OTee on a child's everyday life, and the influence of OTee on the family's everyday life. By recording and analyzing responses from parents, I will interpret parental perspectives of appropriateness based on these topics.

Research Approach

This study will take the form of generic qualitative inquiry, (Percy, Kostere, & Kostere, 2015). Generic qualitative inquiry is used when the research problem requires qualitative methods, other qualitative approaches are not suitable, and the researcher possesses “pre-knowledge/pre-understandings” of a topic that he or she wishes to describe more fully from the perspective of the participant (Percy et al., 2015, p. 78).

Participants

Seven children with ASD completed the mixed methods study. The caregivers of four children with ASD, totaling five caregivers in all, participated in the current study. The parents of the three children who are not represented either did not respond to the invitation to interview or stated they were too busy with family matters to be interviewed. Of the parents who participated, three were Caucasian, one was Hispanic, and one was multi-racial. Annual household income for the parents ranged between \$15,000 and more than \$65,000. Size of household ranged from three family members to six family members. Colorado State University’s Institutional Review Board approved all study procedures. Participants gave informed consent. To protect privacy, parents are described using the pseudonym assigned to their child in Peters et al. (in review).

Description of the Intervention

OTee is an occupational therapy intervention that integrates horses and the equine environment to target occupational performance and participation. In OTee, occupational therapists target barriers to participation faced by the child with ASD, using activities that are therapeutically designed to promote growth across physical, emotional, cognitive, and social domains to ameliorate the child’s ability to participate in valued activities and roles.

The children with ASD participated in the study on a weekly basis for ten weeks. Each child and caregiver was evaluated by the occupational therapist to determine the child's current abilities and the family's priorities for the intervention prior to its initiation. This evaluation informed the occupational therapist's choice of intervention activities. Activities including grooming, tacking, playing mounted games, and riding through obstacle courses were tailored to address each child's unique goals. The occupational therapist manipulated equine movement to affect functional outcomes by providing graded sensory stimulation to facilitate optimal arousal and active engagement in the therapy session. Sessions were between 45 and 60 minutes long with a minimum of 20 minutes of mounted time. Following each session, the occupational therapist provided the caregiver with strategies and tools to try at home.

There was a one-to-one ratio between the child and occupational therapist. Whenever possible, children with similar levels of social communication abilities completed OTee sessions in the same arena simultaneously. In this way, the occupational therapists could structure activities to promote social interaction and provide positive reinforcement for communication.

As part of the larger study, the research team interviewed the occupational therapists who delivered the OTee intervention with the intent to understand the theoretical rationale underlying the intervention. The current study is a further extension of this research with the intent to gain the perspectives of the final key stakeholder, the parents.

Data Collection

Interview procedures. Both initial and member checking interviews were conducted in person at the therapeutic riding center or at a different location of the parents' choosing including a public library and their homes. A professional transcription service transcribed the interviews and I subsequently uploaded the transcriptions into NVivo, a qualitative data analysis software

program, for analysis (QSR International, 2017). The interviews were transcribed in smooth verbatim style to support flow for reading and analysis. Interviews for parents of three of the children were conducted in English. The interviews with the remaining parent were conducted in Spanish with a semi-structured interview guide written in Spanish. Caiti Peters conducted the Spanish-speaking interviews, and a professional transcription and translation service produced an English transcript.

Initial interviews. I co-conducted three interviews with Caiti Peters; Caiti Peters conducted the fourth. Interviews lasted between 30-60 minutes and were audio-recorded. A semi-structured interview guide developed by Caiti Peters guided the initial interviews (see Appendix A for interview guide). The questions were based on the Evans (2003) article. Interviews occurred four to six weeks after the conclusion of the intervention depending on which baseline phase the child was assigned. Interview questions were aimed at elucidating the parental perspectives of the appropriateness of OTee for their child in terms of their child's experience during and following therapy and the child's reaction to the therapy. Additionally, questions concerning the impact of therapy on the child's life at home, in school, and in the community were asked to determine parental perspectives on impact of OTee on the child's daily life. Lastly, parents were shown the quantitative results of the study and asked to give their perspective on if the numbers reflected what they were experiencing on a daily basis.

Member checking and follow-up interviews. All parents who participated in the initial interview were invited to participate in a follow-up interview with member checking questions approximately six months after the conclusion of the intervention. Parents of all four children agreed, however one mother was unable to complete the interview due to personal circumstances. I conducted one interview alone, one with Caiti Peters, and Caiti Peters

conducted the third. Interviews lasted between 30-60 minutes and were audio-recorded. I developed a semi-structured interview guide based on preliminary analyses of the initial interview as well as the conceptualization of appropriateness guided by Evans (2003) (see Appendix B for interview guide). The interview followed a structure guided by the three components of my conceptualization of appropriateness. The discussion of each component began with a member checking portion in which questions sought to provide my interpretation of the parent's responses and offer the opportunity for parents to affirm, alter, or elaborate on my initial analysis. This was followed by a question asking parents to describe how the same consideration was impacting their child's and their family's lives approximately six months after the intervention had concluded.

Data Analysis

Theoretical analysis, a type of thematic analysis consistent with a generic qualitative approach, is an appropriate analysis method when the researcher intends to analyze predetermined concepts derived from the background literature and use these predetermined concepts as themes (Percy et al., 2015). I performed theoretical analysis using the qualitative data analysis software program NVivo (QSR International, 2017). I used the elements of appropriateness I constructed based on relevant background literature as the predetermined concepts in this process. These elements of appropriateness are found in my research questions: the child's experience of OTee, the influence of OTee on the child's everyday life, and the influence of OTee on the family's everyday life.

I used Glaser and Strauss's (1967) three steps of open, axial, and selective coding within this analysis. Analysis began with open coding using the elements of appropriateness as a priori codes. Though these codes eventually served as themes, remaining open to possibility of new

themes existing within the data was integral in the process of theoretical analysis. Thus, I began open coding with apriori codes all the while allowing new themes to emerge from the data. In open coding, I deconstructed the text in order to examine, conceptualize, and categorize the data into the predetermined and potentially new concepts (Strauss & Corbin, 1990). I sub-categorized data within these concepts as appropriate.

Next, I conducted axial coding in which I reassembled the data in new ways to find connections and relationships between and within concepts and subcategories of concepts. I engaged in reflexive activities throughout the process to capture my emerging thoughts about the relationships between and within the concepts and subcategories of concepts and any new concepts or patterns I detected.

Finally, I engaged in selective coding. In this stage, I identified core concepts in the data that served answer research questions. I synthesized findings to present them in more narrative format. The selection of core concepts could have implications for future theory building.

Additional Considerations

Trustworthiness

As a qualitative researcher, I aim to accurately reflect the unique experiences and perceptions of the experiences of the study's participants. I have considered the four characteristics of trustworthiness in development of this proposal: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985).

Credibility. A study's credibility can be conceptualized as authenticity, or how accurately it has captured the reality of its participants (Brown, 2017). Care has been taken to enhance the credibility of this study through multiple interviews, multiple interviewers, and member checking. Each parent was offered the opportunity to complete a second interview with member-

checking questions. In the second interview, I reviewed the analytical thoughts I constructed when coding the initial interview. I offered parents the opportunity to correct or elaborate on any of these initial analytical thoughts and asked any lingering questions I had in relation to their initial interview. Further, I asked if and how their perspectives had changed in the approximately four months between interviews.

Transferability. The transferability of a qualitative study is the degree to which the findings can be applied to other circumstances (Brown, 2017). I aim to enhance transferability as much as possible in order for practitioners in search of information to determine if this study could be relevant to their practice. I included numerous direct quotations from parents in the results to support my interpretations. These quotations provide a dense description of findings, which Savin-Baden and Major (2013) suggest may enhance the transferability of a study.

Dependability. In dependability, measures are taken to demonstrate that findings are consistent across individuals and time (Brown, 2017). Dependability is addressed in conducting the first and second interview approximately four months apart in order for patterns across time points to be identified. As the sole coder of the transcripts, I employed a code-recode procedure to evaluate if my interpretations were consistent over time.

Confirmability. Confirmability is the degree to which findings can be verified by individuals other than the researcher (Brown, 2017). Care was taken to ensure my perspectives have not misrepresented the voices of the participants. I included a positionality statement to explicate my own subjectivity and potential sources of bias. I accounted for this bias by engaging in reflexive practices throughout my data analysis process. These reflexive entries, as well as transcripts of interviews, serve as an audit trail. Additionally, Dr. Caiti Peters and Dr. Wendy Wood reviewed my analytical thoughts and coding schemes through peer review. We discussed

discrepancies until agreement was reached. I wrote summary memos of these meetings to be included in the audit trail.

Positionality statement

I have been working with children and young adults with ASD since 2009. In my experience, I have met many families that place a great deal of attention on their child with ASD and who are invested in the interventions in which their child participates. I enter into this study with the belief that as their primary caregivers, parents of children with ASD can provide valuable insights into the experience of OTee on their child's life. Additionally, I have loved animals all my life and have experienced their therapeutic power. As a past equestrian, I have a great respect for and positive view of horses. Hence, I might feel resistance in interpretation of any potentially negative experiences with horses. Additionally, I am studying to become an occupational therapist. As such, I may be inclined to view the impact of an occupational therapy intervention more positively than indicated by parents. Care has been taken through reflexive practices and peer review of data analysis to address the possibility for bias.

Significance

Parents are uniquely situated to observe and evaluate changes in demeanor and behavior in their children during and following OTee. The findings represented by parental comment regarding OTee for children with ASD may provide unique and valuable information regarding the influence of such therapy on their child's and family's everyday life. This study could contribute to the profession of occupational therapy by addressing appropriateness of a novel approach to occupational therapy intervention.

Appropriateness must be addressed to ensure that the interventions researchers spend time and resources developing are ones that key stakeholders, in this case parents of children

with ASD, find acceptable and are likely to pursue. Smith et al. (2007) assert that the second phase of research for developing interventions for individuals with ASD should be feasibility testing, a phase that includes assessing the acceptability. This phase produces information about the acceptability of the intervention that investigators can use to revise the intervention activities or procedures (Albano, 2004; DeRosier, 2004). Thus, I propose findings on the parental perspective of appropriateness could serve to modify or inform future OT or EAT interventions.

Additionally, the current study may contribute to the literature by addressing a need previously stated by the autism community for more research that targets the day-to-day living with autism for people with autism, their families, and their caregivers (Pellicano, Dinsmore, & Charman, 2014). By including the subjective experience of parents of the children who participate in the intervention, parents are given a speaking part in research on interventions for ASD. Research directly influences practice and policy, and it is my belief that the voices of these key stakeholders should be included in the literature. The subjective experience of parents and children participating in EATs is meaningful, but currently few studies exist that examine the voices of parents in this context.

Lastly, the current study has implications for future theory-building. Parents' understandings of their child's experience in this EAT as well as how the therapy affects the child's and family's everyday life may generate new hypotheses about how the intervention works.

CHAPTER TWO: MANUSCRIPT

One in 59 children in the United States is estimated to have autism spectrum disorder (ASD) (Centers for Disease Control and Prevention, 2018). ASD is characterized by chronic deficits in social communication and social interaction and restricted and repetitive behaviors, interests, or activities (American Psychiatric Association, 2013). Children with ASD frequently exhibit problematic behaviors characterized as hyperactivity or irritability (Kaat, Lecavalier, & Aman, 2014). Related challenges in their occupational performance and barriers to their social participation include difficulties developing, maintaining, and understanding relationships; playing with peers; transitioning to non-preferred activities; experiencing extreme distress to small change; and participating in the student role (American Psychiatric Association, 2013; (Ashburner et al., 2010; Ziviani et al., 2005). For parents, the challenges of raising a child with ASD can also lead to decreased social participation, as well as to lifestyle imbalances and low self-efficacy in the parenting role (Stein, Foran, & Cermak, 2011). Moreover, parents of children with ASD experience more mental health problems than parents of children with other disabling conditions.

Companion to these issues is the significant task of searching for interventions and choosing one for their child with ASD, a process that has been described as overwhelming and confusing (Grant, Rodger, & Hoffman, 2016). Over one-hundred approaches have been involved in the treatment of ASD, but there is no agreement to date as to which treatment is most effective, nor does a single approach exist for the universal treatment of all barriers to participation experienced by children with ASD (Green, Pituch, Itchon, Choi, Reilly, et al., 2006; National Research Council, 2001; Warren et al., 2011). Equine-assisted activities and therapies

(EAATs) have increased in popularity for children with ASD. Lindly, Thorburn, Heisler, Reyes, and Zuckerman (2018) reported that 10% of parents of children with ASD had tried some type of EAAT.

Occupational therapists have incorporated horses in therapies for children with ASD with promising results. Authors of studies have variously called these therapies *hippotherapy* (Ajzenman et al., 2013; Liddiard, 2009), a generic *equine-assisted therapy* (Memishevikj & Hodzhikj, 2010), and *equine-assisted occupational therapy* (Lambias et al., 2016). Only the study of equine-assisted occupational therapy explicitly indicated the involvement of occupational therapy principles. Given these variations, it is difficult to assess whether these previously studied efforts by occupational therapists to incorporate horses are congruent with the focus of this study, *occupational therapy in an equine environment*. Hence we regard the scientific investigations of occupational therapy in an equine environment as just beginning.

Smith et al. (2007) proposed a four-phase framework for how interventions for children with ASD are best empirically developed. A key task in phase one research is to conduct efficacy studies on an intervention technique to demonstrate the potential therapeutic benefit of a technique. Thus, Peters, Wood, Hepburn, and Bundy (in review) conducted a phase one study demonstrating that occupational therapy in an equine environment may improve occupational performance, social motivation, social communication, and self-regulation of children with ASD. A key task in Smith's second phase of intervention development is to assess the appropriateness of the intervention, often called acceptability. As such, there is a need to assess if parents consider occupational therapy in an equine environment an appropriate service for their children with autism. Questions of appropriateness address the "impact of the intervention from the perspective of its recipient" by examining its "psychosocial aspects" (Evans, 2003, p. 81).

The examination of appropriateness reported in this paper thus combined parental perspectives on their child's experience of the service as well as relationships among the service and their child's everyday life and family's everyday life. We therefore asked:

1. How do parents of children with ASD perceive their child's experience of participation in ten weeks of occupational therapy in an equine environment?
2. How do parents of children with ASD perceive the influence of this service on their child's everyday life?
3. How do parents of children with ASD perceive the influence of this service on their family's everyday life?

Materials and Methods

A fundamental qualitative descriptive design was used to describe parental perceptions of the appropriateness of occupational therapy in an equine environment. This design is the design of choice when investigators seek to *describe* an event, phenomenon, or experience, without layers of interpretation or inference required by other qualitative designs such as phenomenology or grounded theory (Sandelowski, 2000). The Institutional Review Board of [removed for blinding] approved all study procedures.

Participants

To recruit participants for the current study, the research team emailed an invitation to caregivers of the seven children who participated in Peters et al. (in review) study of the efficacy of occupational therapy in an equine environment. The parents of four children with ASD, totaling five parents in all, gave informed consent and participated in the current study. Of their respective four children, all demonstrated improvements in occupational performance goals, and three demonstrated improvements in irritability and hyperactivity. Of the parents who

participated, three were Caucasian, one was Hispanic, and one was multi-racial. Annual household income for the parents ranged between \$15,000 and more than \$65,000. Size of household ranged from three to six family members. Parents are described using the pseudonym assigned to their child in Peters et al. (in review). The four children of these parents were between the ages of eight and 13 and had confirmed diagnoses of ASD (see Peters et al.). Further demographic information of these children is provided in the results section.

The Intervention

Occupational therapy in an equine environment was designed to address individualized occupational performance goals related to social play, social communication, and self-regulation. Two occupational therapists provided the intervention, both of whom had extensive clinical experience incorporating horses and the equine environment within their services for children with ASD. As provided by these practitioners, occupational therapy in an equine environment comprised a comprehensive individualized intervention that followed the process of evaluation and intervention of the American Occupational Therapy Association (2014), and thereby focused on individualized occupational performance goals. This process began prior to the first treatment session with evaluation of the child and parent, by the occupational therapists, to determine the child's abilities and the family's priorities. Guided by evaluation data, the occupational therapists selected and tailored therapeutic occupations that included, among others, grooming and tacking the horse on the ground, and playing games, solving problems, and riding through obstacle courses while mounted on the horse. Accordingly, the occupational therapists continuously integrated horses and elements of the equine environment (e.g., grooming and riding equipment, an indoor riding arena with equipment to create ground courses, an outdoor trail with sensory and activity stations) within therapeutic occupations. The occupational therapists also worked

one-on-one with individual children. When possible, however, they arranged for children with similar social and communication abilities to complete sessions together. This strategy of pairing allowed the occupational therapists to remain focused on individualized goals while concurrently providing structured social activities intended to promote the children's positive interactions and to elicit, from them, positive reinforcements of communication.

The intervention consisted of ten, once weekly, 45- to 60-minute sessions. Each session included at least 20 minutes of mounted time, during which the occupational therapists varied the horse's speed, gait, and direction as needed to grade sensory stimulation and optimize the child's arousal and engagement. Hence the treatment tool of hippotherapy, as defined by the American Hippotherapy Association (2017), was intermittently incorporated in mounted therapeutic occupations. As much as possible, each child was paired with the same horse. After each session, the occupational therapists provided parents with strategies and tools to try at home.

Data Collection

The first and second author conducted semi-structured interviews. Two interviews involved both parents of the child (Ryan). All other interviews were with mothers only. Initial interviews occurred four to six weeks after the intervention concluded. Member checking interviews occurred six months after the intervention concluded. All parents agreed to both interviews, but the mother of one child (David) was unable to complete the second interview due to personal circumstances. Interviews with parents of three children were conducted in English. Interviews with one parent (Jorge's mother) were conducted in Spanish. Interviews ranged from 30 to 60 minutes. Interview questions were framed on Evans's (2003) definition of appropriateness. For example, we asked about the child's experience of and reaction to the service. We asked how participation in the service affected the child and family and probed to

examine impacts of the service in different contexts including home, school, and the community. Professional transcriptionists transcribed the interviews and we then uploaded the transcriptions into NVivo, a qualitative data analysis software program, for analysis (QSR International, 2017).

Data Analysis

The first author used theoretical analysis, a type of thematic analysis consistent with fundamental qualitative description. Theoretical analysis was chosen due to this method's usefulness in analyzing predetermined concepts derived from the literature, in this case, elements of appropriateness (Percy, Kostere, & Kostere, 2015). The steps of theoretical analysis can be likened to Glaser and Strauss's (1967) three steps of open, axial, and selective coding. First, the first author inspected the transcripts line by line to examine, conceptualize, and categorize data into one of three categorical bins, which aligned with the three elements of appropriateness (Strauss & Corbin, 1990). She subcategorized data within these bins as appropriate. Second, the first author reassembled data in new ways to find connections and relationships between and within concepts and subcategories of concepts. Finally, the first author identified core concepts in the data that served to answer research questions. In this way, elements of appropriateness served as apriori codes, but throughout the analytical process the first author remained open to organic emergence of new themes and sub-themes without preconceived notions of what these might be. The first author synthesized findings to present them in a narrative format.

Trustworthiness

We enhanced credibility by conducting multiple interviews with participants and asking member-checking questions during the second interview. In member-checking, parents had the opportunity to state if their perspectives had changed over the course of four months and to correct or elaborate upon initial analyses. We included numerous direct quotations from parents

in the results to support our interpretations. These quotations provide a dense description of findings, which Savin-Baden and Major (2013) suggest may enhance the transferability of a study. We increased the study's dependability by conducting interviews four months apart to identify patterns across time. The first author employed a code-recode procedure to evaluate if the analyses of data were consistent over time. We increased the study's confirmability through peer review and reflexive activity. The second and third authors reviewed the first author's analytical thoughts and coding schemes, and all authors discussed discrepancies until we reached agreement. During analysis, the first author wrote reflexive entries in NVivo to track personal assumptions and emerging understandings. These reflexive entries, along with transcripts of interviews, serve as an audit trail.

Results

Three major themes encapsulate this study's main results. The first two of these themes corresponded to concepts in the research questions: namely, the child's experience of occupational therapy in an equine environment (theme one) and the relationship of the service to the child's everyday life and the family's everyday life (theme two). The third major theme pertained to areas of parental concerns and dissatisfactions related to the service.

Child's Experience

Parental perspectives of their child's experiences helped to elucidate qualities of occupational therapy in an equine environment that were both beneficial and detrimental to its appropriateness. These perspectives fell into two overarching sub-themes. The first sub-theme pertained to qualities of the horse and of the occupational therapist that contributed to the child's experience. The second sub-theme pertained to the child's emotional experience during and surrounding participation in the service.

Qualities of the horse and occupational therapist. All five parents viewed the horse to be a powerful element of occupational therapy in an equine environment. Indeed, it was not uncommon for parents to call the service simply “horse therapy.” Parents believed that their child benefitted physically and emotionally from their interactions and relationship with the horse. More exactly, three parents mentioned the importance of interacting with a horse to offer appealing, multisensory experiences; such experiences provided the children with opportunities to do things they found engaging. For instance, David’s mother noted that “the more activities he can do physically and not just mentally is helpful” because he “likes” and “needs” physical experiences. Further, David’s mother believes “he learns best” through engaging in physical activity “and not just [observing].” Similarly, Josh’s mother noted that the physical stimulation of riding the horse allowed her son to “regulate his body.” Although swimming had the same effect on him, she noted that occupational therapy in an equine environment had the advantage of “[reaching] his mind” as well as his body. Ryan’s mother reported that the rhythm of the horse’s movement brought calmness to her child.

Four parents highlighted that qualities of the horse were attractive to the extent that even thinking about the horse motivated their children to attend and participate in the service. For example, Josh’s mother noted that Josh finds very few activities appealing, and she emphasized the importance of findings activities that motivate Josh. She considered the horse’s ability to motivate her child to be powerful and unique:

When we were going to an occupational therapist...she had every toy you could ever imagine and he still wasn't internally motivated... [the service] was an internal motivation, and...that's a huge thing about horse therapy. ...For many people it is

derived from horses being gentle and the interaction that they can have with them...So horse therapy is set apart on its own as being something that can motivate.

Ryan's parents reported that Ryan was fascinated by the horse and felt brave when riding such a large creature. According to his mother, Jorge appreciated the horse's patience with him. Further, Jorge considered the horse to be sensible and strong, characteristics he saw reflected in himself.

Parents discussed qualities of the interactions with the horse as well. By nature, occupations that involve interactions with horses such as grooming, mounting, and riding follow discrete steps in predictable sequences. Ryan's parents and Jorge's mother noted that their children benefitted from these highly structured interactions. Ryan's parents agreed that the predictable routines in riding were helpful because Ryan knew what to expect, which made him less anxious. Jorge's mother noted that because her son struggles to organize his ideas, highly structured horsemanship activities help him feel "functional" and "useful;" however, she also described the disadvantage of the imposed structure of the sessions in that it limited Jorge's ability to enjoy himself.

Parents also identified beneficial qualities of the occupational therapist. Jorge's mother noted that the occupational therapist was knowledgeable about autism, which helped Jorge to feel understood, safe and relaxed and, in time, to come to trust the occupational therapist. She attributed Jorge's progress throughout his participation in the service in large part to this relationship. Josh's mother made a similar attribution and perceived the occupational therapist to be "strong and direct" and able to "read Josh's verbal cues wonderfully." Coming "from an occupational therapy standpoint," the occupational therapist was also able to recognize "thresholds" when Josh was "pushed too far" or could be pushed "a little bit further." Ryan's parents noted his willingness to participate in the service to the presence of the occupational

therapist and side-walkers. Ryan felt safe, comfortable, and relaxed in the presence of these individuals whom he perceived as kind. In this context, Ryan enjoyed cracking jokes and being the center of attention.

Perceived emotional experiences during or surrounding sessions. An emotional experience that parents associated with their child's anticipation of the service was that of *excitement*. As David's mother's recollected, "he's always looking forward to it... We tell him the night before and so he gets all excited. He'll verbalize it. He's like 'horse, horse riding.'" Jorge's mother reported a similar experience:

I did see something positive and that was whenever I mentioned therapy like, "Today we are going to see the horse," his behavior did change. He would be happier and his disposition would change... His eyes would light up. It was like something that enlightened his soul and he would do everything in his power to be there.

Notably, in these quotes, excitement was either expressed or elicited in relation to the horse, rather than other elements of the service. Indeed, all parents perceived their child's excitement to be directly tied to the opportunity to interact with the horse.

All five parents perceived that *enjoyment* was an important emotional experience of their children during occupational therapy in an equine environment. Three mothers attributed at least part of their child's enjoyment to the physical and sensory elements associated with riding and interacting with the horse. David enjoyed the "interactive" nature of the service and especially enjoyed his experience riding on outdoor trails. Once, David experienced disappointment rather than enjoyment because he was unable to ride the horse. Ryan's parents believed that Ryan enjoyed the novelty of sitting on a tall animal. Jorge's mother expressed that Jorge enjoyed his

relationship with his horse and the “stimulation” that riding provided. In her view, participation in sessions served as an outlet for Jorge to vent stress and frustration related to his difficulties adjusting to a new home and school. She believed that riding allowed him to be himself and live in the moment, which she thought improved his quality of life. In her words, occupational therapy in an equine environment, “was like a little ray of light” and “a little star in the dark sky.” Because Jorge enjoyed the service so much, it provided a “ray of hope amidst the chaos, amidst all of the different and new things.” She emphasized that the service acted as a haven for Jorge, a place where he could escape the stress related to the major changes in his life and lose himself in the pleasure of interacting with the horse. Unfortunately, she believed Jorge’s enjoyment was tinged by frustration and disappointment when the session ended as Jorge wanted to spend more than the allotted one hour with the horse.

Relaxation was another emotional experience that parents perceived to be associated with their child’s participation in occupational therapy in an equine environment. For example, three parents noted that, although their children frequently experienced anxiety, they were not anxious during sessions. Josh’s mother considered the fact that the service did not provoke anxiety in her son to “[say] a lot about horse therapy.” Ryan’s mother shared a similar sentiment, stating that Ryan’s experience “was as positive as it could possibly have been.” She described that when starting new activities, Ryan is typically hesitant and expresses his nervousness continuously. She described his reaction to occupational therapy in an equine environment in comparison, “but with the horseback riding, he got kind of excited for it.”

Perceptions of feeling relaxed seemed to relate to the qualities of the horse and the occupational therapist that parents identified as beneficial. For example, Ryan’s parents

attributed his lack of anxiety to the occupational therapist's ability to set an appropriate level of challenge so that he never became overwhelmed.

Influence on the Child's and Family's Daily Life

All five parents described ways in which the service positively influenced the daily lives of their children and families. With respect to their children's daily lives, all five parents attributed improvements in individualized occupational performance goals to the service. Parents also perceived that the service conferred social benefits; namely, their child's social interaction skills advanced and frequencies of their positive social interactions increased. Four parents additionally noted that participation in the service favorably influenced their child's calmness in daily life as variously demonstrated by decreased levels of hyperactivity or irritability, fewer acts of violence, and fewer tantrums or meltdowns; these parents also felt an overall sense of their child as being more peaceful. With respect to their families' daily lives, all five parents recounted ways in which the service seemed to benefit them as parents by, for example, decreasing their stress and providing strategies for effectively managing their child's behavior. All parents reported enjoying positive social interactions more frequently due to their child's increased ability to relate to and interact with family members. In all, parents perceived that their child's participation in the service made their role of parenting somewhat easier and their day-to-day running of family life go more smoothly. Importantly, there are limitations to these benefits which are discussed in detail in the final theme. These commonalities noted, however, the parents' perceptions also differed in nuanced yet important ways. To capture both commonalities and differences, we next provide a synopsis of key findings pertaining to perceived influences on the daily life of the child and family for each child.

Ryan. Ryan is an eight-year-old Caucasian male who lives with his parents and three siblings. Ryan's mother described improvements in Ryan's ability to handle disappointment, to transition to non-preferred activities with less resistance, and to control his violent reactions; in short, in Ryan's ability to remain calm. For example, Ryan's younger brother once bit Ryan. Despite seeing "rage so intense" in Ryan, Ryan was able to resist violent actions and verbalized, "that hurt me" instead. Ryan's mother partially attributed the increase in calmness to participation in the service but added that her new policy for restricted screen time may also have been linked to this change. Ryan's mother noted he still demonstrated hyperactivity and irritability, but she was pleased with their decreased occurrence.

Ryan's parents believed that Ryan improved his social skills as a result of interacting with the horse and qualities of the equine environment. For example, Ryan learned to read facial expressions in conversation partners by first learning to read and react to his horse's signals when riding. Ryan's father attributed his son's increased awareness and understanding of the need to follow directions to the equine environment, a space where Ryan "actually had to listen" to maintain his own safety and the safety of his horse. Ryan's parents indicated that these experiences contributed to Ryan's progress on his goal behavior of engaging in reciprocal conversation on a topic chosen by a peer or family member.

These changes brought benefits to Ryan's parents and facilitated positive family interactions. Ryan's mother, who described Ryan as "a bit more manageable now," felt less "helpless" because "he's not as out of control as he was before." She reported receiving helpful recommendations from the occupational therapist including giving warnings before taking something away from Ryan. Ryan's father added that by enrolling Ryan in the service, he, the father, experienced a "paradigm shift." That is, he now saw Ryan not simply as a disobedient

child but, rather, as a child with autism who he can help. Ryan's father provided an example of this paradigm shift in action in an instance when Ryan was not joining an activity with others during a family trip. "Before," he said, "I would have forced it [and] it would have turned out badly." He instead let Ryan continue to play on his own and everyone, including Ryan, enjoyed themselves. Ryan was also better able to enjoy other family occupations including watching movies or playing board games without leaving or tantruming. Indeed, Ryan's father noticed a general improvement in Ryan's relationship with his siblings in that he was, "more easygoing" and "less demanding of them." Ryan also took on more responsibility caring for his baby sister.

Ryan's parents noted that Ryan's confidence also increased following his participation in the service. Ryan had more varied interests and was more willing to try new things. One new pursuit was engaging in the Catholic ritual of first confession, an act valued by his parents. Ryan's parents attributed his engagement in this ritual to occupational therapy in an equine environment, which was both something new to Ryan and something in which he had succeeded. Ryan's success with the service "increased confidence in his abilities" and helped him become "more willing to try [things that scare him]." Since the service's conclusion, Ryan's parents reported that he had become more "daring" on playground equipment, jumped off the high dive at a swimming pool, tried new foods, and agreed to go swimming with dolphins on a family vacation. In this way, Ryan's parents perceived the service to have favorably influenced Ryan's life by increasing his confidence and openness to experience.

Jorge. Jorge is an 11-year-old Hispanic male who lives with his parents and two siblings. Like Ryan, Jorge improved in his ability to follow directions and "listen to the voice of someone else who wants to help him." This social lesson was made possible due to the fact that Jorge felt understood by his occupational therapist and trusted that she wanted to help him. Although her

son still struggled to organize his ideas, Jorge's mother noted that the highly structured horsemanship activities helped Jorge feel "functional" and "useful." Further in her view, the physical stimulation he received from horsemanship activities enabled him to think more clearly and be able to learn the cause and effect of following directions and being given a reward. For Jorge, time with the horse was a powerful reward. Interacting with the horse was such a strong motivator that Jorge improved his behavior at home whenever the horse was mentioned as a later reward. Jorge's understanding of the link between good behavior and rewards promoted his performance on his goal behavior, transitioning to adult-directed activities. Jorge's mother reported improvement on this goal, noting he reacted more quickly to instructions.

Though these changes were noteworthy, Jorge's mother described the greatest influence of the service on her son's life as the happiness that it brought him. As she described, when Jorge "improves his mood then everything else improves. His behavior improves, his will to cooperate with the family improves, even his discipline. Everything improves. Everything." Jorge's family benefitted from his happiness in that when Jorge is "happy and structured" they are all "calmer and at peace." She attributed his happiness to "[doing] things that he likes;" in this case, riding and building relationships with horses. Beyond an overall sense of well-being associated with Jorge's happiness, Jorge's mother noted that the family enjoyed Jorge being more playful and initiating more play with family members and people outside the family. Jorge's mother noted these positive influences were most powerful during and immediately following the ten weeks of intervention. At the time of the second interview, she stated many benefits had diminished.

David. David is a 13-year-old multi-racial male who lives with his mother and older brother. David's mother reported that the frequency, length, and intensity of David's tantrums decreased following occupational therapy in an equine environment. Similar to Jorge's

happiness, David's enhanced calmness was significant given the impact of his moods on the well-being of his family members. As David's mother put it, "when David is happy, we're happy. It all depends on David. So we've been pretty happy." Additionally, improvements in David's social abilities facilitated more positive family interactions. "He seems to even laugh appropriately to TV shows and things that I do," his mother observed. "I'll make faces at him and he'll find it hilarious and he'll just crack up." His mother reported enjoying watching David produce more speech. His speech was frequently used to communicate his excitement over attending the service. Lastly, David's mother reported a sense of relief in relation to David's improvement in his goal behavior (to increase safety in community outings), stating, "That's one thing I don't have to worry so much about."

David's participation with his family also improved in an especially meaningful way from his mother's perspective. Following participation in the service, David was able to sit on the couch with his mother and brother in the family room. David had not been in the family room, or any family room in other houses, since his Dad's passing seven years prior:

He used to never sit on the couch ever. Any family room area, he won't go to. Now he comes and sits on the couch. Yeah, ... right by me. I'm like, "Come here, sit on the couch by me," and he'll come and sit for a while. He doesn't always stay but that's like huge. He never did that before ever....after his dad passed because we used to gather in that area quite a bit and so when his dad passed, he refused to come even near that room.

She elaborated, "Now he's sitting on the couch when I ask him to...He'll put his head on my lap and we'll watch cartoons together. I think whatever it is, it just has helped." In this way, following occupational therapy in an equine environment, David became able to enjoy time with

his mother and brother in a place that holds memories for the family and facilitates positive interactions between family members.

Josh. Josh is an eight-year-old Native American male who lives with his adoptive parents and two adoptive siblings. Like the other four parents, Josh's mother identified improvements in her son's occupational performance goal behavior, social interactions, and calmness. Josh's mother believed that the physical stimulation of riding the horse helped Josh to regulate his body. From her perspective, when Josh "can't get his body regulated," he creates "enormous chaos." She elaborated, "We don't see that [chaos] after he's done horse therapy...we can take all of that energy and we can use it for constructive rather than destructive" purposes. In addition to being calmer and more "approachable" on the days of the service, Josh was better able to focus, which helped him academically. Being better able to interact with students, follow directions, and behave appropriately in the classroom, Josh improved in math, money management, and writing. Josh's mother credited occupational therapy in an equine environment with this progress, noting "Without a doubt, without a doubt, because he can settle down and focus." Beyond classroom skills, Josh's mom stated that he received a "broad education on life." She noted that the service was a new experience for Josh, which helped him gain the "bigger picture" of life.

Additionally, Josh improved in his goal behavior of transitioning to adult-directed activities, though he still required extra time to transition to new environments. Josh exhibited less escaping, fewer rebellious behaviors, and greater compliance with demands. Josh's mother partially attributed his increased compliance to his increased calmness and the helpful strategies provided by the occupational therapist. Josh's mother considered his improvements in calmness and compliance as an outcome of his participation in the service but noted that he additionally experienced major medication changes over the course of the study. She considered the

medication change to be the main catalyst for Josh's changes in behavior with occupational therapy in an equine environment as a secondary but significant contributor.

Josh's mother attributed his participation occupational therapy in an equine environment to improved interactions and relationships with his peers, siblings, parents, and pets. For example, he asked to stay at school for lunch to talk with his peers, and play dates with his half-brother and family outings ran more smoothly. His relationship with his mother is "definitely improving" in that he had begun telling her she is "the best mom ever" and that he loves her. Josh's mother noted how important it was for her to hear such loving statements because Josh had "frequently" before said things like "I hate you," "I wish you were dead," and "I'm going to shoot you." Josh's mother also credited with one social benefit that had enormous influence on Josh's life: gentle touch. Through learning to interact with his horse, Josh became "far more gentle" with and gained more "respect" for animals. These areas of growth translated into his interactions with family members. For example, Josh formerly would be too forceful when family members tried to connect with him by high fiving, which would "turn the connection into a correction." With the service, Josh began responding with "appropriate effort." Gentle touch also translated to pets. Previously, Josh had taken pleasure in "scaring and hurting" pets, which escalated to him killing the family's baby chicks. But by the time of the second interview, Josh was caring for his own cat as well as twelve baby chicks. His mother described how he sat quietly with the animals, touched them gently, and brought them food. Josh had even sat and sung to the chicks until they fell asleep.

Concerns and Dissatisfaction

Although parents' perspectives of occupational therapy in an equine environment were largely positive, they also expressed several concerns and areas of dissatisfaction. In particular,

most all gains noted by the parents had limitations in their nature. For example, the gains typically occurred in the day of or days surrounding the service. Jorge's mother noted "a positive reaction" regarding his happiness and ability to follow directions "between Sunday, when he would wait for the therapy, on Monday, when he received it, and on Tuesday, with the memories of it...the rest of the days, he didn't have any motivation." By the second interview, positive outcomes had diminished because Jorge no longer remembered his experiences. Similarly, Josh's mother noted his ability to focus and learn was most heightened on the day of the service.

Gains in social skills and calmness also had limitations. Jorge continued not keeping appropriate space from others. His desire to be close was a "cultural problem," which his mother believed would "take time" to change. Although Josh improved in gentle touch, he still hit family members. Of the four parents who described their children as calmer, all mentioned continued incidences of hyperactivity and irritability. Yet these parents had not expected all irritability or hyperactivity to disappear in ten weeks and were relieved by their reduction. Ryan's mother stated, "boys are active, and I don't think that therapy is going to change that."

The parents also had concerns about how the service was implemented. For example, three mothers found the frequency and length of the service to be limiting. Ryan's and David's mothers expressed that though they saw improvements in their child's behavior and mood, they expected these improvements would have been greater had the service occurred more than once a week. Jorge's mother added that the length of individual sessions as well as the ten weeks of intervention were too short. She stated that Jorge felt frustrated and disappointed when his time with the horse ended; hence, "he was always limited and he never got to really enjoy it."

Further, Jorge's mother found the service's delivery to be too rigid, limiting Jorge's ability to enjoy his time with the horse. Though attributing the high level of structure to Jorge's

ability to feel “functional,” she believed Jorge felt “pressured with the [occupational therapist’s] instructions” and wished he could have been “freer” with the horse. In her view, had the occupational therapist “allowed him to enjoy the horse a little bit more, like hugging him more or having more contact without being pressed for time,” then Jorge might have improved more.

Lastly, all parents expressed interest in continuing the service for their child, but concerns of feasibility interfered with two of the parents doing so. Jorge’s mother was unable to afford enrolling her son in the service. Ryan’s father wished Ryan could continue the service and his mother stated she would have agreed; however, the long drive to the therapeutic riding center discouraged her from pursuing it. Josh continued enrollment in the service past the conclusion of the study, and David continued attending the therapeutic riding center but switched to receiving the services of a speech-language therapist who incorporated horses.

Discussion

Overall, occupational therapy in an equine environment was well-received by parents of children with ASD. The perspectives of parents supported the service’s appropriateness, particularly that their child had experienced the service positively and that it had benefitted the daily lives of their child and family. As such and as next developed, corroborating evidence of the quantitative findings of the efficacy of occupational therapy in an equine environment (Peters et al., in review) was found, further underscoring the promise of this service.

Findings reported here support the positive quantitative findings reported by Peters et al. (in review) related to improved performance of goal behaviors, fewer irritable and hyperactive behaviors, and improved social motivation and social communication. Importantly, our findings also suggest how these quantitative changes carried over into daily life. Namely, in the children’s daily lives, their parents believed that they experienced fewer negative emotional episodes,

created and experienced less chaos, and were able to handle daily situations more smoothly. These findings are consistent with those in Tan and Simmonds (2018), who explored psychosocial outcomes of EAATs for children with ASD. In this study, parents reported their children experienced less anxiety, more calmness, and greater happiness.

In terms of the influence on the child and family's everyday life, similarities between the children suggest these common outcomes of the service: improved occupational performance goal behavior, increased calmness, increased social skills and number of social interactions, facilitation of the parent role, and promotion of positive family experiences. Importantly, many parental perspectives suggested causal linkages between the service, or particular elements of the service, and positive improvements in their child. Regarding the child's experience of the service, children felt excitement, enjoyment, and relaxation during or surrounding sessions. Parents believed certain elements of the service elicited these emotions.

From the parents' perspective, the horse added special value to the service and distinguished it from other approaches to occupational therapy. Interacting with and enjoying unique qualities of the horse was an important element of their child's experience. Riding contributed to their child's excitement to attend the service and the enjoyment they experienced once there. Similarly, Bass, Duchowny, and Llabre (2009) reported higher levels of motivation in children with ASD who participated in therapeutic riding and proposed that this motivation was due to the child's perception of the physical act of riding as a rewarding stimulus. Riding a horse also allows for a multitude of sensory experiences that may optimize arousal during sessions (Gabriels et al., 2012). Horseback riding is recreational and fun in nature, and it has been suggested that children may benefit physically, socially, and emotionally when engaging in this sensory-rich physical activity (Liddiard, 2009). Additionally, the parents in this study

believed that their children built emotional relationships with their horses, which further kindled their motivation to attend therapy. Similarly, Berg and Causey (2014) suggested the bond between the participant and horse is a likely a great source of motivation across different types of EAATs and different populations. The findings of the current study align with conclusions made by Llambias et al. (2016), who studied task engagement in children with ASD during “equine-assisted occupational therapy.”

The parents in this study also identified other distinctive elements of the equine environment beyond the horse itself as having been beneficial. For example, the structure that the occupational therapists imposed by incorporating horsemanship activities alleviated the children’s anxiety, and the children were relaxed during sessions. It has been suggested that for children with disabilities, EAATs may be an outlet for emotional expression and occur in a setting in which the awareness of their disability is decreased (Zabriskie, Lundberg, & Groff, 2005). Jorge’s mother’s comment that Jorge felt that he could relieve his stress and be himself during occupational therapy in an equine environment seemed to corroborate this suggestion.

Children enjoyed aspects of the environment including the outdoor trails. Positive views of the equine environment are supported by Liddiard (2009), who proposed that the context in which EAATs occur may be motivating for children with disabling conditions. Findings suggest that occupational therapy in an equine environment is motivating to attend, which has implications for the appropriateness of the service. Attractive elements of the service seemed to facilitate the child’s willingness to participate, which relieved the parents of some burden in that they did not have to convince their child to attend. This enhanced willingness is relevant to any parent, but it is especially relevant for parents of children with ASD, as these children often have restricted interests, and convincing a child to attend a demotivating therapy can be taxing on a

parent (American Psychiatric Association, 2013). Additionally, in a paper detailing theory underlying EAATs for children with ASD, Peters, Wood, and Hepburn (2019) reported that many studies of EAATs note that motivation to attend therapy encourages active and sustained engagement in the session, which improves outcomes.

Altogether, and as reflected by the perspectives of parents, the provision of occupational therapy in an equine environment appeared to be strongly aligned with the profession's best practice guidelines for improving social and behavioral outcomes in individuals with ASD. Those guidelines include the use of activity-based interventions and physical activities while incorporating behavioral techniques, preferred interests, joint attention training, and multi-sensory experiences (Tomchek & Koenig, 2016). As described by the parents, the occupational therapists incorporated elements of the equine environment, especially horses and horsemanship activities, to facilitate their children's active engagement in therapeutic occupations, most of which were highly physical in nature. The practitioners also took advantage of the structured nature of horsemanship activities to facilitate children's joint attention to horses or other children; they provided and modulated rich multi-sensory experiences; and they targeted individualized goals. The parents furthermore perceived that the occupational therapists provided levels of assistance that enabled their children to complete therapeutic activities at a just right level of challenge. Parents also believed that the horses heightened their children's interests in and motivation for therapy. Another critical element of the service were the strategies that the occupational therapist provided to the parents in an effort to extend what worked in an equine environment to the home environment. Parents reported that many of these strategies were realistic and helpful, and enhanced the daily lives of their respective children and families.

Yet also meriting consideration are the parents' expressed areas of concern and dissatisfaction. One concern, expressed by three mothers, was that if the service had more, and more frequent, sessions, then it might have benefitted their children more. Relatedly, Holm et al. (2014) examined how different "doses" of therapeutic riding affected target behaviors in children with ASD, finding that increased weekly frequencies favorably impacted the magnitude of positive behavioral changes. Another concern pertained to maintenance of positive effects, since parents perceived that the biggest changes in their children's behaviors occurred on the days of and surrounding therapy. Maintenance of effects was not examined in the present study nor, to our knowledge, have other studies on EAATs provided by occupational therapists examined maintenance effects. Another concern pertained to access. Whereas all parents expressed some interest in continuing the service, some parents were concerned about being able to access the service in the future. Because considerable space is needed to accommodate the buildings, fields, and animals of a therapeutic riding center, many centers are in rural areas that pose transportation barriers such as time-consuming drives or no access to public transportation. Parents also identified affordability of the service as another potential barrier to access.

Lastly, concerns expressed by some parents raise these questions: should occupational therapy in an equine environment be more free-flowing? Should part of the session be scheduled for the child to be with the horse and enjoy it with no demands otherwise made by the occupational therapist? Of relevance to these questions, the benefits of play in promoting development are well documented (Ginsburg, 2007). Child-directed play contributes to the development of decision-making skills and allows the child to engage completely in the passions they yearn to follow. Conversely, when play is adult-directed, children may concede to externally imposed rules and structure and miss out on potential benefits of play, especially in

cultivating creativity, group play skills, and leadership (Ginsburg, 2007; MacDonald, 1993).

Thus, lessening demands on the child could infuse more playfulness within occupational therapy in an equine environment and enhance its fun and benefits.

Limitations and Next Research Steps

Only five parents participated in this study, therefore, generalizations regarding their perspectives must be undertaken cautiously. Because the service was provided free of charge, parents may have felt an obligation to report only positive results. Hence only parents who had positive feelings about the service were willing to be interviewed. The parents of the three children from the efficacy study who are not represented did not respond to the invitation; two of these three children improved in their occupational performance goal but did not demonstrate improvements in irritability and hyperactivity. The third demonstrated improvements in occupational performance, irritability, and hyperactivity (Peters et al., in review).

As occupational therapy in an equine environment for children with ASD continues to be developed, the next step in Smith et al.'s (2007) framework is to create an intervention manual and assess its feasibility. Next research steps therefore are to examine (a) incorporation of more playful elements in the service, (b) longer durations or greater intensities of service delivery, (c) maintenance of effects, (d) issues of access, and (e) acceptability to a multitude of stakeholders, including a broader range of caregivers, occupational therapists who implement the service, administrators at facilities where the service takes place, and children who receive the service.

Conclusion

Occupational therapy in an equine environment was found to be acceptable to parents and congruent with the principles of best practice in occupational therapy for children with ASD. Indeed, the incorporation horses and elements of equine environments may have facilitated the

realization, by occupational therapists, of best-practice principles in especially powerful and poignant ways. These promising findings support further scientific investigation of the feasibility of this novel intervention.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Declaration of Interest

The authors have no conflict of interest to declare.

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CHAPTER THREE: REFLECTION

Completing a thesis has shaped my graduate school experience. Looking now at my completed thesis, I see it as a mosaic. From afar, it is a clear and attractive pattern, a unified figure that is easy to comprehend. As its creator, I see the component parts and remember the care and diligence that went into cutting and placing each tile. In the final chapter of this thesis, I will reflect on the research process, my hopes for this thesis's contribution to the profession of occupational therapy, and how completing this thesis shaped me as a student and person.

The Research Process

Existing literature and the data I collected are the tile pieces in the mosaic of this thesis. Like an artist searching for the tile that offers the perfect color, thickness, and shine, I delved into the literature, seeking information to lay the groundwork for my topic. I came to understand the broad impacts of ASD on those with the disorder and their families, the interventions that sought to address these impacts, and the process involved in creating new interventions. The pieces of literature I found were full, glossy tiles that stood on their own. I nipped the tiles into the sizes and shapes I needed to create my mosaic. In laying the tile, I came to see where gaps existed, where I needed more tile to complete the figure. In data collection, I created my own material that served to fill these gaps. Data from parent interviews served as tile, but a more complicated process was needed to determine how to cut and place the pieces.

I used theoretical analysis to analyze my data. Informed by the literature and the work I had done arranging it into a cohesive whole, I knew the approximate size and shape of the holes I needed to fill. I did not, however, know exactly how the tiles I had would look once I let them break apart. I did not know the orientation I would place them in. Similarly, following the steps

of theoretical analysis, I used pre-existing literature to determine the concepts I would examine with the thought that these concepts would become themes. However, the sub-themes and perspectives within the themes were not preconceived, and I allowed the parents' voices to come through authentically. I used these new pieces of tile to fill the gaps, and in doing so answered my research questions.

My mentors and committee members, especially Dr. Wood, completed extensive edits and made helpful suggestions on my literature review, data analysis, and manuscript. Like a mosaic, I placed all the tiles to create my figure. My committee helped me to arrange the tiles so that they flowed and created a more cohesive whole. They altered the orientation of the tile so that the final image was as clear as it could possibly be. Dr. Wood was essential in this process. Her edits, infused with distinctions, clarifications, and beautiful prose, served as the grout that bound the pieces I placed into a robust and enduring piece of art.

Lastly, it was up to me to polish the piece and show it to the world, which I completed through final edits, my defense presentation, and my imminent submission to the respected journal, *Occupational Therapy in Health Care*. I look forward to sharing my manuscript, my mosaic, with the world. I look forward to contributing to the conversation on occupational therapy that incorporates horses into treatment for children with autism. I hope that my mosaic will come to serve as raw material for other researchers to incorporate into their mosaics, too.

This Thesis's Contribution to the Profession

It is my hope that this thesis contributes to the research on occupational therapy in an equine environment, an intervention that I believe holds promise for improving the lives of children with autism and their families. By considering appropriateness, I have furthered the process of developing this service as an evidence-based intervention by contributing findings on

its feasibility. By including the parental perspectives, I have addressed a key consideration of occupational therapy interventions, client-centeredness. I have given parents of children with autism a speaking part in the research. Because research directly influences practice and policy, I believe that in doing so, I have contributed to the profession's value of being client-centered. I hope that this thesis will help researchers select research questions and spend time and resources developing interventions that key stakeholders, in this case parents of children with ASD, find acceptable and are likely to pursue. Lastly, I asserted previously that this thesis may have implications for future theory-building. I was unable to reach that step in the process, but I hope that the findings presented in this thesis may contribute to future research in this area.

My Development

Before I begin the final section, I would like to state a clarification. I use the word "I" throughout this reflection; however, it is only through the support, mentorship, and direction of my research team, thesis committee, family, and friends that I was able to make these strides in my development. Thank you, sincerely, for all you have given me. I feel that I have stood on the shoulders of giants, and I look forward to any opportunity I have to give back, or to help the next one in line.

At convocation, Dr. Bundy urged us new students to think and act as though we were already occupational therapists. I took this advice to heart, and it increased my confidence which enabled me to build competence. I failed, however, to translate this advice into the onset of my career as a student researcher. I remember seeing the task of crafting a literature review as insurmountable. I received excellent advice from the research team to begin reading. I read and I read and I read. I took notes. I read those notes. Slowly, I began to notice patterns. I found myself able to take existing literature and use pieces of it to build a case for what I intended to

study and why. It was like putting together a word puzzle, or a mosaic. This shift in my abilities was enormous, as I felt like I finally began to understand the concept of ‘constructing knowledge.’ Knowing that I myself could build my knowledge, rather than having it handed down from on high, empowered me and enabled me to attack the rest of the thesis process with more confidence. Nothing in my academic career has come close to being as valuable.

In writing my thesis, I learned about myself as a writer and as a person. I am thorough. I seek a deep understanding of the topics I write about, and I want to share that understanding with my reader. In the same vein, I am verbose. Dr. Wood has enabled me to develop as a reader-centered writer. She encouraged me, in the words of Dr. William Strunk Jr. (1999), to make “every word tell” (p. 32).

In crafting my thesis, making every word tell transcended clear writing. It included truthfully representing participants’ voices, a task I took seriously. I became introspective and contemplative. I became acutely aware of the influence of my voice. One misstep could misrepresent a mother’s belief, downplay an important contribution, or exaggerate a trifling matter. When plagued by worries regarding my potential bias, assumptions, or misrepresentations, I took the advice of Dr. Sample and *returned to the data*. I immersed myself in the data so much so that I found myself memorizing significant passages unintentionally. I then took this data, and I strove to write about it in a way that allowed no possibility of misinterpretation. As a result, I have presented findings that are true to the perspective of the participants.

Completing this thesis changed me as a person, too. To more eloquently express this, I turn to concepts of occupational science I learned about in my first semester of the program. Completing a thesis has been a meaningful occupation for me, an occupation that has contributed

to my personal identity. As a first year student, I defined meaning as an individual's subjective experience of an occupation combined with the purpose the individual derives from that occupation. Occupation gains meaning through an individual's personal perception of the event and its significance as it relates to what is important to him or her, including goals, values, and beliefs (Matuska & Christiansen, 2008). My subjective experiences ranged from confusion over where to start, to satisfaction regarding the perfect fit of 'tile pieces,' to excitement when interviewing parents, to trepidation when beginning data analysis, to thoughtfulness in writing, to joy and concern over what parents discussed in the findings, and now, to a bittersweet happiness that I am nearing the final stage. No matter what the subjective experience, I have always found this occupation to be purposeful. It aligns with my goal of making a contribution to the field of occupational therapy, my values of the importance of hard work and deep thought, and my belief that I am capable of doing these things.

In short, the thesis process has been incredibly meaningful. McAdams (1997) asserted that occupations gain meaning over time as they are reflected upon and become part of an individual's personal narrative. These reflections are ultimately translated into personal identity through a process called 'selfing.' Hasselkus (2011) discusses the process of selfing and asserts that an individual comes to know oneself through occupation. One "synthesizes and unifies" past experiences together to understand them as one's own, with the final product being the creation of personal identity (Hasselkus, 2011, p. 26). An individual then expresses her personal identity to the outside world through occupations. I identify with this process when I consider my thesis journey. Through the occupation of writing a thesis, I have come to understand myself and my values and beliefs more clearly. My perception of self has shifted. I see myself as a researcher, someone with an analytical mind who can present a case, gather the data, and engage in dialogue

with other academics. Like Hasselkus (2011) said, I then express this personal identity to the outside world through occupation. The creation and sharing of my manuscript are the concrete ways in which I choose to present my personal identity. I will submit the manuscript to a journal with hopes of sharing a piece of myself with the world.

Though I do not intend to pursue a PhD immediately, I will continue presenting my personal identity of a researcher to the world through my clinical practice. I will work in a pediatric setting, and I hope to work in animal-assisted therapy. I want to be a scholar-practitioner, incorporating evidence into my practice and keeping my analytical mindset when it comes to identifying and approaching problems in the clinic. I will not only draw from best evidence, but I hope to continue to contribute to it. It is my hope to find a job where I can partner with a university or hospital and carry out research in practice. I may then one day return to the world of academia, once I get my feet wet in clinical practice.

Conclusion

I leave this project with an expanded understanding of animal-assisted interventions for children with autism, a practice area and clinical population I have great enthusiasm for. I also take with me an increased confidence in my abilities to be analytical and produce high-quality research. Lastly, I take with me lessons about hard work, mentorship, and the necessity of the highest academic standards I have learned from my research team.

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APPENDIX A

Semi-Structured Interview Guide (Initial Interview)

Appropriateness

1. Can you tell me your thoughts or reactions to your child's experience in equine-assisted occupational therapy at Hearts and Horses?
2. Did this therapy seem like a good fit for your child? Why or why not?
3. Can you tell me about your child's reaction to equine-assisted therapy? For example, was he scared? Excited? Disappointed? Did he have fun?

Impact on Everyday Life

4. How, if at all, do you believe participating in equine-assisted therapy affected your child?
5. After therapy, did you notice any changes in your child at home? If so, please tell me about that.
6. After therapy, did you notice any changes in your child in the community? If so, please tell me about that
7. After therapy, did you notice any changes in your child at school? If so, please tell me about that.

Explanation of Quantitative Results - Specific to Each Participant

Show the results of each outcome measure. After explaining the results of each outcome, ask the following questions. Of note, these questions will be individualized based on each child's results.

1. Do you agree that [SUMMARIZE RESULTS]? Can you tell me about that?
2. Can you tell me about if, and how, this impacted your child's daily life?
3. Do you have any guesses as to why equine-assisted therapy may have led to this outcome?

APPENDIX B

Semi-Structured Interview Guide (Member Checking Interview)

Child's Experience of OT^{ec}

1. Last time we spoke, you described your child's experience of equine therapy [in these ways]. Am I interpreting that correctly? Is there anything you would like to change?
 - *For example:* Josh found the therapy internally motivating, and the intervention did not provoke anxiety in Josh.
2. What about now that it has been about four months since we spoke? Are there ways in which your child's experience of equine therapy have changed or stayed the same that you would like to touch on? (Adjust phrasing based on if the child is continuing therapy or not).

Influence of OT^{ec} on child's everyday life

1. Last time we spoke, you described equine therapy as influencing your child's daily life [in these ways]. Am I interpreting that correctly? Is there anything you would like to change?
 - *For example:* This therapy allows Josh to participate more fully in school, he has made academic progress, and overall he has been calmer.
2. What about now that it has been about six months since therapy ended? Are there ways in which participation in this therapy have influenced your child's daily life positively or negatively? Or has it had no effect?
 - *For example:* In our last interview, you mentioned that Josh was mellower the days of therapy and created less chaos. Is this still the case, or has anything

changed in the past three months? Can you speak to the days in between therapy sessions?

Influence of OT^{ec} on family's everyday life

1. Last time we spoke, you mentioned your child's participation in this intervention had [this effect] on your life as a parent. Am I interpreting that correctly? Is there anything you would like to change?
 - *For example:* The therapists gave you realistic strategies to use with Josh and Josh was more compliant in social situations or when given a demand.
2. What about now that it has been about four months since therapy we spoke? Are there ways in which participation in this therapy have made your life as a parent harder or easier? Or has it had no effect?
 - *For example:* You mentioned that Rose was able to give you some realistic strategies to try out at home such as using the dry board in Josh's room. Have you continued to use these strategies or have you since stopped? Have you learned any new strategies? Could you speak to what some of those strategies were, and if they had an impact on Josh's life, your life as a parent, or your family's overall life?
3. Last time we spoke, you said your child's participation in this intervention had [this effect] on your family's life. Am I interpreting that correctly? Is there anything you would like to change?
 - *For example:* Gentler with animals including your 3 dogs and 1 cat. Playdates with Josh and his half-brother have been running more smoothly.

4. What about now that it has been about four months since we spoke? Are there ways in which participation has made your overall family life harder or easier? Or has it had no effect?

- *For example:* Has Josh's participation in this therapy helped your family's ability to do things together? Or have things stayed the same?