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Occupational therapy's role in serving individuals with social, emotional, and cognitive deficits at Cheff Therapeutic Riding Center

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OT 7202: Capstone Experience and Project

Dr. Holly Grieves

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Abstract

This capstone aimed to gain experience and knowledge in developing evidence-based materials that positively affect the programming at the Cheff Therapeutic Riding Center. Within occupational therapy (OT), Equine-Based Therapy (EBT) has demonstrated positive outcomes for improving participation in meaningful occupations. However, based on a needs assessment with the Cheff Therapeutic Riding Center, a demonstrated increased need for outreach and enhanced mental health programming for trauma-related populations was evident. Therefore, the objectives to meet their needs were to develop a sustainable evidenced-based program utilizing EBT for individuals with trauma and provide input for their evaluation process and therapeutic riding classes within an occupational therapy perspective. Positive feedback from mentors and shareholders provided a basis for the capstone result due to limited participant recruitment. This capstone project contributes to the field of OT by providing further evidence of the value of OT in various nontraditional settings and maintaining a client-centered approach.
Introduction

My Doctoral Capstone Experience (DCE) was completed at Cheff Therapeutic Riding Center (Cheff Center), an outpatient facility in Augusta, Michigan. Services provided at the Cheff Center address individuals with a history of substance abuse disorder and individuals with emotional, cognitive, and physical difficulties. Although my DCE utilized the Cheff Center's current populations, my outreach and program development efforts were constructed to address individuals with a history of trauma. My mentors, Emily Fields and Ashton Maguire were instructors at the Cheff Center who managed the programs and facilities. Both mentors are certified in therapeutic riding instruction through the Professional Association of Therapeutic Horsemanship (PATH) organization. Ashton Maguire has a background in childhood development, and Emily Fields received her certification as an Equine Specialist in Mental Health and Learning.

Literature Review

An emerging Occupational therapy (OT) practice area is trauma-related care for individuals. Trauma's defined as a single or cumulative negative experience that is physically or emotionally harmful and significantly impacts an individual's mental, physical, and functional well-being in a lasting way (Trauma and Violence / SAMHSA, n.d.). Trauma occurs at a personal level, within families or relationships, or on a larger scale, a societal level (Statistics for Mental Trauma / How Common Is It & Who It Affects, n.d.). Many individuals experience trauma throughout their lifetime, with about 70% of adults experiencing a traumatic event at least once (Posttraumatic Stress Disorder Fact Sheet, n.d).

In recent years, large-scale traumatic events have brought about traumatic experiences collectively within society. For example, bi-annual increases in incidence rates for mass shootings in the past 30 years have occurred across age spans (Lin et al. 2007). In addition, the development of the COVID-19 pandemic generated significant adverse effects on mental well-being and mood during mandatory stay-at-home orders, creating isolation from others (Ammar
et al., 2020). Additionally, due to stay-at-home orders, domestic violence and abuse victims could not escape their traumatic environment, leaving them in perpetual traumatic experiences isolated from resources (Bean, 2021). The effects of trauma on an individual can occur cognitively, physically, and emotionally (Signs & Symptoms of Psychological & Emotional Trauma | Cascade Behavioral Health, n.d.). Posttraumatic stress disorder (PTSD) is a condition that can develop following a traumatic experience. Symptoms of PTSD vary, ranging from cognitive and emotional symptoms to physical symptoms involving hyperactivity and hyperarousal (Psychiatry.Org - What Is Posttraumatic Stress Disorder (PTSD)?, n.d.).

Similarly, the prevalence of attention deficit hyperactivity disorder (ADHD), a condition highlighted by internalizing and externalizing behaviors, has a significant relationship with the experience of trauma in children. In addition, the experience of trauma impacts the severity and presence of externalizing behaviors in children (Schilzand et al. 2017). Experience of trauma in childhood also correlates with poor academic success, poor mental health, and adverse outcomes following exposure to maltreatment or family discord (Schultz 2005; Trotter 2007; Whitley 2010; Bachi, Terkel, and Teichman 2011, Frederick 2013; Kemp et al. 2014; Pendry et al. 2014). Overall, experiencing trauma has been demonstrated to affect health-related quality of life (HRQOL) negatively (Roberts et al., 2013).

Trauma-related conditions, such as PTSD and anxiety, are commonly treated using various medications and psychotherapeutic interventions (Treatments for PTSD, n.d.). Psychotherapy is the most common treatment for trauma-related conditions, including cognitive behavioral therapy (CBT) and related subsets of CBT (Treatments for PTSD, n.d.). Additionally, medication interventions reduce symptoms, the most common being selective serotonin reuptake inhibitors (SSRIs) (Treatments for PTSD, n.d.). Recently, trauma-related conditions, such as PTSD and anxiety, have demonstrated improvements through effective treatment utilizing animal-assisted therapy (AAT), such as equine-based therapy (EBT), while using a CBT approach (Prothmann et al. 2015, Mueller & McCullough 2017).
Therefore, this capstone aimed to develop an evidence-based program that addresses quality of life and occupational performance utilizing equine-based therapy for individuals who have experienced trauma.

**Equine-Based Therapy**

Equine-based therapy (EBT) is a subset of AAT that therapeutically utilizes a horse to achieve a client's goals with a certified professional (Leaders in Therapeutic Horsemanship / Professional Certifications / PATH Intl, n.d.). A total of five different types of EBT are practiced, including equine-assisted activities (EAA), equine-assisted therapy (EAT), equine-facilitated psychotherapy (EFP), equine-facilitated learning (EFL), and hippotherapy (Leaders in Therapeutic Horsemanship / Professional Certifications / PATH Intl, n.d.). EBT types associated with mental health disorders and trauma are EAA, EAT, and EFP. Each type of EBT comprises horse handling, riding, and developing a therapeutic bond with the horse (Leaders in Therapeutic Horsemanship / Professional Certifications / PATH Intl, n.d., Tsantefski et al. 2017). Due to their nature of being prey animals, horses are sensitive to their environment, which requires an individual to foster a safe, trusting, and respectful relationship with the horse (Burgon 2011, Karol 2007). Through the utilization of horses therapeutically, individuals can improve their self-esteem, personal confidence, trust-building, communication, engagement, and boundary skills (Karol, 2007, Schultz et al., 2007, Chardonnens 2011, Waite & Bourke, 2013).

**Trauma-Related Conditions**

Occupational performance is impacted by PTSD symptoms, such as flashbacks, cognitive and emotional changes, hyperarousal, and other comorbid conditions associated with PTSD (Plach & Sells, 2013, Koren et al., 2005). Utilization of EAT as an intervention for individuals with PTSD provided improvements while developing riding, grooming, and horsemanship skills. In addition, symptoms of PTSD, anxiety, depression, and trauma-related
distress significantly decreased, with increased mindfulness following EAT interventions (Johnson et al. 2018, Earles et al. 2015).

Additionally, children exposed to trauma through problematic parental substance use (PPSU) have difficulty regulating emotions and forming attachments with caregivers and peers (Kroll, 2004; Cook et al., 2005). Following exposure, children exhibit decreased cognitive function, self-esteem, poor self-concept integration, and difficulty managing impulsive behaviors (Kroll, 2004; Cook et al., 2005). Using EAT as an intervention for children exposed to PPSU promotes improved overall well-being, as evidenced by increased participation, decreased challenging behaviors, and reduced anxiety symptoms (Tsantefski et al. 2017).

**Quality of Life**

Exposure to traumatic experiences impacts the quality of life (QOL), as evidenced by lower scores on mental health well-being assessments (Roberts et al. 2013). Lower scores on mental health assessments reflect feelings of hopelessness, need for healing, desire for isolation, and symptoms of depression (Lanning & Krenek 2013). Using EBT improves the quality of life in individuals through an improved willingness for socialization, development of trust, and decreased isolating behaviors. Additionally, general health and overall energy levels improved following EBT interventions (Lanning & Krenek 2013). Resiliency, a significant factor that improves QOL, was increased during EAT interventions (Burgon 2011, Kim et al. 2018). Improvements in resiliency-based protective factors were also evident in EAT interventions, such as improved self-confidence and mastery of horsemanship skills (Burgon 2011).

**Relationship Development**

Relationships that are developed during EAT interventions are similar to secure attachment relationships with caregivers or peers, providing a safe space for individuals to establish a secure base when experiencing difficulties (Bachi, Terkel & Teichman, 2011; Parish-Plass, 2008; Tedeschi et al., 2005). Utilizing EAT with individuals also fosters feelings of security and personal and social development skills (Dunlop & Tsantefski 2018). A sense of
security is established through individuals feeling understood and essential, trusting others, and being able to predict the horse's behavior. Personal and social development is fostered in the relationship with the horse through establishing friendships with peers, improving confidence, learning social behaviors, and overcoming fears (Dunlop & Tsantefski 2018). Establishing a sense of security and personal and social developmental skills can indicate a sense of social competence, a significant indicator of resilience in childhood (Kroll & Taylor, 2003).

**Occupational Performance**

Due to impulsivity and externalizing behaviors, individuals with ADHD can have difficulties participating in meaningful daily activities (Kooij et al., 2019). Using EAT paired with occupational therapists improved occupational performance in self-care activities, school, and leisure activities (Gilboa & Helmer 2020). In addition, strategies addressing attention and memory, such as developing checklists and making intervention goals, demonstrated improvements in occupational performance (Gilboa & Helmer 2020).

**Social Skill Groups and EBT**

An important aspect of occupational performance is participation in social relationships and groups (American Occupational Therapy Association (AOTA) 2020). Social participation utilizes specific skills, called social skills, and OTs use these small groups to develop the skills required for social participation, including communication, emotional regulation, and relationship building (Kauffman and Kinnealey 2015). Trauma negatively impacts these social skills, impacting an individual's development and participation in social settings (Kjorstand et al., 2008). Equine-based therapy has demonstrated a positive impact as an intervention for improving social skills, including emotional and behavioral regulation, communication, and relationship building (Waite & Bourke, 2013, Dunlop & Tsantefski, 2018, Karol 2007, Schultz et al., 2007, Chardonnens 2011). Although evidence has demonstrated a positive effect when addressing social skills with EBT, there are limited findings on the impact of EBT and social skills within the population of individuals with a history of trauma.
Needs Assessment

After completing the needs assessment with the Cheff Therapeutic Riding Center, I was able to ascertain various needs that could benefit from my capstone project. These needs included increased outreach to various organizations throughout Kalamazoo to improve their program's diversity and support, limited mental health-focused programs, and the impact of COVID-19 on their current programming. Additionally, during the needs assessment, the benefit of providing an occupational therapy perspective on their evaluation process and current programs was discussed as an objective to meet the needs of their clients. Throughout my capstone, I addressed these gaps in their organization through the completion of the objectives that I developed.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
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<tbody>
<tr>
<td>• Education for instructors and volunteers</td>
<td>• Reduced staffing</td>
</tr>
<tr>
<td>• Careful selection and number of horses</td>
<td>• Equipment/Space for additional services and community outreach</td>
</tr>
<tr>
<td>• Well-established reputation in the community</td>
<td>• Limited Mental Health scope</td>
</tr>
<tr>
<td>• A safe place for self-growth/provides support</td>
<td></td>
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| Opportunities                                                            | Threats                                                                    |
|--------------------------------------------------------------------------|                                                                           |
| • Improved community involvement                                         | • COVID-19 Financial Impact                                               |
| • Donations (horses, equipment)                                           | • COVID-19 Program/outreach Impact                                        |
| • Fundraiser Events                                                      | • High cost of operations/animal care                                     |
| • Marketing: using social media, television                              |                                                                           |

Figure 1: Needs assessment results of Cheff Therapeutic Riding Center
Objectives Achieved

Three objectives were achieved throughout this DCE, and each addressed the needs of the Cheff Center identified from their needs assessment. This DCE's primary objective was to develop a sustainable evidenced-based program that utilized EBT for individuals with a history of trauma. Additional objectives for this DCE included the development of a functional upper extremity protocol for Cheff Center's evaluation and to provide input on their programs from an OT perspective.

The primary objective, developing a sustainable evidenced-based program, was achieved by completing a program manual and materials. Unfortunately, I could not implement this program due to a lack of participant interest. However, I believe the lack of interest could be due to the financial burden of each session required from the Cheff Center for their services and equipment. Further program development research was completed on the benefits of social skills groups and the principles of a trauma-informed approach to social groups. Both topics provided a guideline for developing the activities and structure of the sessions.

Session topics for the groups were broken into various critical social skills for developing healthy relationships. Four sessions were created, each highlighting a different social skill required for success in social occupations. For example, a session was focused on emotional regulation skills and identifying horse emotions to provide a safe environment for the participants to share their feelings. This session incorporated emotional regulation into the activities, an essential skill for building healthy relationships. The remaining sessions had different focuses, such as teamwork and relationship building. However, each social skill continued to be incorporated throughout each session despite the main topic. Activities and their materials were developed and selected to include horses and the use of a social skill that could transfer learning to everyday occupations (see Appendix A1 and A2).

Through discussions with mental health professionals currently instructing similar programs, I decided to utilize a ground program approach or activities that incorporate working
with horses without riding. A ground program was selected to establish safety, improve relationship building and provide essential preparatory skills if the participant continues the therapeutic riding programs provided at Cheff Center. Each session was structured to begin with classroom activities, followed by a barn and then arena activity, to provide transparency into each session for the participants (see Appendix B). The participant prerequisites included an ACES score of at least 1 to indicate a history of trauma-appropriate ages for selected social skills, a guardian liability signature, and a doctor's consent for their health and safety (Centers for Disease Control (CDC) 2022). To obtain participants, I contacted a local organization that focuses on providing care for individuals with a history of trauma, the Resiliency Center. A pre- and post-assessment with a self-rated Likert scale was developed to determine the participant's confidence with each social skill addressed (see Appendix C).

The next objective, developing a functional upper extremity protocol, was achieved through various discussions with the Cheff Center mentors to determine their evaluation needs. We highlighted the importance of assessing multiple upper extremity aspects, including functional grip, range of motion, and strength, and I completed an activity analysis on the therapeutic riding classes. Following the activity analysis, I determined that a functional grip and resisted elbow flexion and shoulder extension were required to steer and stop while riding safely. Additionally, to successfully saddle a horse, a functional grip and resisted elbow extension and shoulder flexion were required functional range of motion. Finally, functional strength would be assessed using a weighted object similar to the force needed for steering and stopping a horse. My final product for the functional upper extremity assessment included a 3lb weighted object with an attached rein for the participant to grip (see Appendix D).

The final objective, providing input on the Cheff Center's programs from an OT perspective, was achieved through observations of their therapeutic riding classes. After several weeks of observations, I identified common difficulties the clients and instructors faced during each class. These included increased problems with behavioral and emotional regulation,
following directions, and attending to tasks. Next, I researched various principles to improve these difficulties, including regulation and heavy work activities, adapting reins, and providing visual aids. Activities that address each principle include deep breathing exercises, setting up obstacle courses, or petting the horses. Additionally, I offered safety guidelines for using gait belts while getting on and off the horse. Finally, the Cheff Center was provided with a manual explaining the benefits of the activities selected for regulation and heavy work, how to adapt their reins, and adequately set up visual aids (see Appendix E).

Developing a sustainable evidence-based social skill program for individuals with a history of trauma addresses the gaps identified during the needs assessment with my mentors at the Cheff Center. In addition, communicating with local organizations for participants and providing literature on the Cheff Center for participant recruitment of the DCE program provides opportunities for outreach to local organizations. The program developed incorporated a mental health focus, such as mindfulness practices and social skill development, contributing to the growth of their current mental health-focused programming. Finally, this DCE addressed the Cheff Center’s need for recommendations in current programming from an occupational therapy perspective. An upper extremity assessment procedure and manual were developed to provide program recommendations to improve participation and safety for their therapeutic riding classes.

**Implications**

Although I was unable to pilot my program developed for the Cheff Center, I was able to implement some of the activities with similar programs. For example, with a women’s self-care group hosted by the Cheff Center, I successfully sampled various breathing techniques and teamwork activities with success based on feedback from the participants. Additionally, I could not observe the impact of these materials due to the time frame in which I provided my upper extremity assessment and OT input products. However, from the feedback received from my mentors and shareholders, I feel that these materials will be beneficial as guidelines for them to
follow as necessary. Developing a sustainable social skills program utilizing EBT is beneficial to OT because it provides further evidence for the value of OT in various nontraditional settings and maintaining a client-centered approach. Using the developed program manual and materials supplied to the Cheff Center, my mentors and future DCE students can sustainably implement this project for various organizations around Kalamazoo.

Conclusion

While at the Cheff Center, I was fortunate to learn abundant information and strategies for EBT during my DCE at the Cheff Center. This information includes leading a small group, developing a multi-session program, and utilizing horses as therapeutic partners. Recommendations for future DCE students would be to complete grant applications to decrease the financial burden of the sessions for families with the hopes of increasing participant interest. Additionally, I recommend beginning participant recruitment before the DCE due to the limited time frame to develop and conduct a program. As a result of my DCE and the Cheff Center, I provided evidenced-based and sustainable programs, assessments, and input to enhance their current programs and improve their outreach to local mental health-focused Kalamazoo organizations.
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Appendix A

Example: Session Activities

**Barn Activity: Five-Senses**

Duration: 15 minutes

Directions:
- Instruct participants through the 5 senses as they groom their horses
- Have the participants tell their horses the answers
  1. 5 things that they can see
  2. 4 things they can hear
  3. 3 things that they can touch
  4. 2 things that they can smell
  5. Have the participants think of one food that the horse may like to eat and what that might taste like

**Arena Activity 1: Horse Behavior Observation**

Duration: 15 minutes

Materials/Requirements:
- 4-5 horses that will demonstrate good herd dynamics

Directions:
1. Release the horses into the arena and have the participants sit on the bleachers
2. Have the participants observe the horse behaviors and point out what they are seeing
3. Have them relate the current behaviors to the PowerPoint game
4. Finally, ask the participants if they have felt the emotions they observed with the horses

Appendix A1. Example of session activities developed for the social skill EBT
Appendix A2. Example of material developed for the activities of the social skill EBT program
Appendix B

Example: Emotional Regulation Session Structure

Objectives:
- Discuss different emotions and what they can look like
- Define and demonstrate what horse behaviors look like
- Discuss calming behaviors
- Introduce sensory grounding activity
- Put together a grounding box
- Continue trauma-informed principles
  - Safety: Emotional and physical
  - Transparency
  - Collaboration
  - Empowerment and choice

Session Activities:
- Welcome
- Ice Breaker
- Classroom activity 1
- Classroom Activity 2
- Arena Activity 1
- Grooming
- Barn Activity
- Arena Activity 2
- Closing
- Hand out:
  - Calming behavior Canva
  - 5 Senses Canva
Appendix C

**Example: Social Skills Assessment**

1. How confident are you with making friendships?
   - 1
   - 2
   - 3
   - 4
   - 5

2. How confident are you with coping or managing your emotions?
   - 1
   - 2
   - 3
   - 4
   - 5

3. How confident are you with working as a team with others?
   - 1
   - 2
   - 3
   - 4
   - 5

Appendix C. Example of pre and post assessment developed for the social skill EBT program
Appendix D

Example: Upper Extremity Assessment Manual

**Observations**

**Grip**
- Full Grasp around rein
- Straight wrist while holding the rein
- Able to maintain hold of weight through the entire assessment
- Any differences between the two upper extremities

**Range of Motion**
- Able to straighten their arms
- Able to pull the weight back towards themselves
- Able to reach upwards towards the ceiling
- Any differences between the two upper extremities

**Strength**
- Able to pick up the weight
- Able to hold the weight unsupported through the entire assessment
- Able to hold the weight with arm straightened
- Able to push the weight above their heads towards the ceilings
- Any differences between the two upper extremities
Appendix E

Example: OT Recommendations

Regulatory Activities

- Improves:
  - Attention to task
    - Ex: Looking forward during obstacle courses
  - Emotional Regulation
    - Ex: Remaining calm during frustrations with horses
  - Following Directions
    - Ex: Completing obstacles or steering as directed
  - Sequencing tasks
    - Ex: First you say woah, then pull back reins
  - Motor Coordination
    - Ex: Steering a horse through cone weaving

- Activities:
  - Dragon Breathing
    - Inhale deeply, exhale forcefully until empty
    - Providing a description of a dragon breathing fire
  - Petting the horses
    - Provides proprioceptive and tactile sensory input
  - Humming
    - Provides proprioceptive and auditory input
    - Not loud and disruptive to class or horse
  - Pointing out obstacles/colors
    - Provides a purpose to focus
    - Can make this a game to increase interest
  - Squeezing a soft ball
    - Provides proprioceptive and tactile input
    - Soft adaptive reins work as well

Appendix E. Example of Input provided for Cheff Center programs from OT perspective