Hippotherapy Practice and Safety Patterns in the United States: A Descriptive Survey Study

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Abstract

Objective: The use of equine movement as a therapy tool in a plan of care, or hippotherapy, has grown considerably over the past three decades. However, there is little evidence of safety rates and related practice patterns to guide key stakeholders such as clients, therapists, the health care team, and third-party payers. The purpose of this article is to describe the safety and practice patterns of contemporary use of hippotherapy.

Design: A survey was distributed to occupational therapy (OT), physical therapy (PT), and speech-language pathology clinicians who incorporate hippotherapy into their practice. The survey included questions about clinicians’ practice patterns, safety procedures, and rates of safety incidents.

Results: Results indicate that hippotherapy is most often used by PT and OT clinicians for pediatric clients. Use of hippotherapy varies by geographic location, and frequency and duration vary widely. Clinicians most often contract their services to a program that provides a facility and horses. Recommended safety practices are widely adopted, and rates of safety incidents requiring basic first aid (0.05% of sessions) or off-site care (0.01% of sessions) are low. Emergency dismounts are frequently practiced and often effective in preventing an incident.

Conclusions: Although there are inherent risks to incorporating horses into a therapeutic plan of care, these risks appear to be well managed by recommended safety practices. Results of this study can (1) help clinicians to make informed decisions regarding practice and safety procedures, (2) provide evidence of safety practices and incident rates to clients, members of the health care team, and third-party payers, and (3) maximize safety for clients who participate in hippotherapy.

Keywords: hippotherapy, safety, practice patterns, equine-assisted therapy

Introduction

Hippotherapy refers to the use of equine movement as a treatment tool; physical therapy (PT), occupational therapy (OT), and speech-language pathology (S/LP) clinicians integrate hippotherapy into treatment plans to supplement traditional services. The movement of the walking horse imparts rhythmic movement and multisensory information to the mounted client1; the therapist purposefully manipulates equine movement (i.e., gaits, speeds, directions) to challenge the client and promote responses consistent with the treatment plan.

Increasing evidence supports the use of hippotherapy to improve body functions, such as postural control,2–4 activities such as gait, functional mobility, and dressing,5–10 and participation such as play and social engagement.11–16 Given these promising outcomes, there is a need to track and share practice and safety information. Clinicians, clients, referring physicians, and third-party payers are challenged by a lack of information on safety risks and related practice patterns associated with incorporating equine movement and the larger equine environment into therapy.

A recent review of peer-reviewed literature on hippotherapy found that most frequently, (1) PT clinicians

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integrate hippotherapy into their practice, (2) children with cerebral palsy receive hippotherapy, (3) dosing is diverse, and (4) gross motor function is assessed.17 It is unknown if these patterns found in peer-reviewed literature mirror real-world practice patterns. Authors also concluded that most hippotherapy research represents early stages of scientific development; while many studies focus on outcome evaluation, there remains a need for “consideration of the practical issues of implementation”.18 One practical consideration that merits further scientific investigation is safety.

The Professional Association for Therapeutic Horsemanship, International (PATH Intl.) and the American Hippotherapy Association, Inc. (AHA, Inc.) have published safety recommendations for services provided in equine environments.19,20 For example, AHA, Inc. recommends regularly practicing emergency dismounts, and PATH Intl. recommends procedures for emergency events (e.g., fire, adverse weather). Both organizations recommend policies regarding protective equipment, such as helmets, passive-release stirrups (i.e., “safety stirrups”), and gait belts. While helmets are always recommended if they can be safely worn, the use of safety stirrups and gait belts is dependent on the clinical situation. No research currently investigates when safety stirrups or gait belts are indicated during the use of hippotherapy.

To date, only two peer-reviewed studies have investigated safety concerns related to hippotherapy.21,22 Leveille et al. found that the primary concern of parents of children receiving hippotherapy was risk of physical injury; authors proposed increased education about risks, contraindications, and risk management.21 Cook found that clinicians incorporating hippotherapy report a safety incident rate of 0.03% over a sample of 143,855 sessions.22 The current study aimed to replicate Cook’s safety findings by assessing safety incident rates, and expand upon her study by describing practice patterns of therapy clinicians using hippotherapy. We also sought to improve rigor by piloting the survey with hippotherapy experts, reporting analysis methods, including several open-ended responses, and receiving approval from an ethics review board. Therefore, this study aimed to: (1) describe practice patterns of therapy clinicians that incorporate hippotherapy into their plan of care, and (2) describe safety procedures and safety incident rates when hippotherapy is part of a client’s plan of care.

Methods

Design

We distributed a survey to assess practice and safety patterns for use of hippotherapy. This study was approved by the Institutional Review Board of Widener University, IRB #40-19.

Participants

Target participants included licensed OT, PT, or SL/P clinicians who use hippotherapy in the United States. An email invitation with embedded informed consent and survey link was sent to AHA, Inc.’s listerv, as AHA, Inc. is the national organizing body in the United States for therapists that incorporate equine movement into their plans of care. Email recipients could forward the link to colleagues who met the inclusion criteria. To be included in analyses, respondents had to self-identify as an OT, PT, or SL/P therapist or therapy assistant in the United States who used hippotherapy within the past 12 months.

Survey development

With permission, we modified the survey that was previously developed and distributed by Cook.22 Modifications included the addition of practice-related questions, revision of safety questions, and change of response formats. The survey was piloted with about 20 hippotherapy experts, leading to final changes for clarity, terminology, and reduced redundancy; these experts were also invited to complete the final survey.

The survey included four sections with closed and open-ended questions related to (1) clinical background, (2) safety procedures, (3) occurrences, and (4) injuries. The clinical background section established participant eligibility and asked questions related to the clinicians’ background (e.g., no. of years as a licensed therapist), and current practice patterns (e.g., client and facility characteristics). The safety procedures section gathered information about trainings, emergency protocols, safety equipment, and emergency dismounts. An emergency dismount was defined as “an unscheduled dismount from the horse, done at the discretion of the therapist.” The occurrences and injuries sections gathered data about incidents that occurred in the past 12 months; an incident was defined as “any adverse event that occurs prior to, during, or after a session that incorporates equine movement. An incident could be either an (1) occurrence: an incident that requires basic first aid on-site, or an (2) injury: an incident that requires more than basic first aid, or requires off-site care.”

Data collection

The survey was distributed through the online survey platform Qualtrics,23 using an anonymous link. The survey remained open for 5 weeks, with a 2-week reminder email.

Data analyses

Responses were excluded if respondents were not PT, OT, or SL/P clinicians (n=13), the respondent did not live in the United States (n=12), or the majority of the response was incomplete (n=18). A total of 92 survey responses were included in final analyses. Missing responses varied by survey item, and some multiple-choice items were not mutually exclusive; therefore, total counts vary across items. Investigators used Microsoft Excel basic functions and pivot tables to calculate descriptive statistics such as frequencies, percentages, and measures of central tendencies. Open-ended responses were downloaded into Nvivo,24 where open coding and code counts revealed the most common responses.

Results

Sample size

It is not possible to determine how many therapists in the United States incorporate hippotherapy into their plans of care, but there are a few indicators that can help to characterize the size of the population. In January 2019 the
AHA, Inc. had 575 professional members, and the American Hippotherapy Certification Board (AHCB) listed 62 AHCB certified therapists and 119 with the designation Hippotherapy Clinical Specialist (HPCS). The current sample includes 92 therapists, 20 of whom reported being AHCB certified and 27 of whom report having the HPCS designation.

**Aim 1: Practice patterns**

**Professional experience.** Most respondents identified as a PT clinician (n = 40) or OT clinician (n = 39), whereas only 13 identified as a SL/P clinician. Number of years as a licensed clinician ranged from 1 to 50 (M = 19.89, SD = 13.17), and years of incorporating hippotherapy into practice ranged from 1 to 39 (M = 9.86, SD = 9.56).

**Location.** Respondents represented a range of states (Fig. 1). Respondents reported providing services in an indoor arena (n = 69), outdoor arena (n = 64), and outdoor trail (n = 50).

**Facility and horse arrangement and handling.** Most respondents contracted their services to the program/facility (n = 61), while fewer leased the facility (n = 10), were directly employed by the program/facility (n = 12), or owned the facility themselves (n = 9). With regard to horses, most respondents contracted (n = 64) or were employed by (n = 15) the program that owns or leases the horses, whereas fewer owned (n = 14) or leased (n = 6) horses themselves. Most respondents reported that horses were led by the head (n = 80) using a halter (n = 64) and/or a bridle (n = 32), and long lining was an additional handling technique (n = 36).

**Frequency and duration.** The number of sessions provided each week ranged from 1 to 45 (M = 9.88, SD = 9.05); length of sessions ranged from 19 to 60 min (M = 42.36, SD = 11.12). The number of weeks respondents provided therapy that incorporated hippotherapy within the last year ranged from 3 to 52 (M = 34.78, SD = 14.06).

**Client age.** Respondents reported working with clients across the lifespan, including children 3 years and younger, and adults 66 years and older. The majority of respondents worked with children 12 years and younger, whereas few worked with adults 18 years or older (Fig. 2).

**Aim 2: Safety patterns**

**Safety procedures and equipment.** Clinicians reported safety procedures for unexpected dismounts (n = 86), spooked horse (n = 85), inclement weather (n = 80), client injury (n = 78), fire (n = 72), loose horse (n = 71), or “other” events (n = 13). The most common “other” events included a temporarily incapacitated staff member (e.g., sidewalker tripped; n = 3), an active shooter (n = 3), and staff or volunteer injury (n = 2). The majority of respondents reported safety trainings were definitely required (n = 77) or probably required (n = 2), whereas only a few reported safety trainings were probably not required (n = 5) or definitely not required (n = 2).

Most respondents reported that clients always wore helmets (Fig. 3). The most common reasons why clients did not always wear a helmet included inability to tolerate helmet/sensory concerns (n = 10), poor head or neck control (n = 6), or shape of head (n = 7). Only 42 respondents reported that clients always wore gait belts. Reasons for not wearing gait belts included the client was high functioning.

**FIG. 1.** Distribution of survey respondents by state.
(e.g., good balance, not impulsive, $n=12$), the client was too young or too small ($n=8$), the gait belt interfered with treatment (e.g., gait belt changed impact of equine movement on client response, $n=6$), client sensory defensiveness ($n=4$), or sidewalk holds (e.g., thigh hold) provided sufficient support ($n=4$).

Finally, most respondents indicated they only sometimes or never used safety stirrups, whereas only 30 reported they always use safety stirrups (Fig. 3). Types of safety stirrups included quick release/peacock stirrups ($n=60$), enclosed stirrups (e.g., Tapadero, Devonshire boot, $n=18$), and S stirrups ($n=4$). Of the respondents that did not always use
safety stirrups, most gave the explanation that in some therapy sessions they do not use any type of stirrup (n = 46), often relying instead on other equipment such as a bareback pad.

Emergency dismounts. The 92 respondents reported an aggregated total of 36,349 sessions delivered in the previous 12 months. Number of sessions each clinician delivered per year ranged from 3 to 1,980 (M = 395.10, SD = 447.81). In these sessions, respondents reported 173 emergency dismounts, ranging from 0 to 21 emergency dismounts performed per clinician (M = 1.97, SD = 2.98). Therefore, 0.47% of all sessions involved an emergency dismount; rates of emergency dismounts per session ranged from 0% to 12.5% across clinicians (M = 0.63%, SD = 0.014). Of these 173 emergency dismounts, 17 resulted in an occurrence and 4 resulted in an injury, indicating that 88% of emergency dismounts did not result in a safety incident. Clinicians reported practicing emergency dismounts at hire (n = 40), annually (n = 33), and/or more than once a year (n = 31), whereas only two clinicians reported that personnel at their facility never practice emergency dismounts.

Occurrences. In the 36,349 yearly sessions, clinicians reported a total of 20 occurrences that required basic first-aid on site, ranging from 0 to 5 occurrences per clinician (M = 0.24, SD = 0.74). Therefore, 0.05% of all sessions resulted in an occurrence; rates of occurrences per session differed by therapist, ranging from 0% to 1.43% (M = 0.08%, SD = 0.003). The person(s) that required first aid included the client (n = 8), clinician (n = 5), horse handler (n = 5), assistant (n = 3), or volunteer (n = 1). The causes of occurrences included a horse spooking (n = 5), an unanticipated movement by the client (n = 5), a person getting bit or nipped by a horse (n = 4), a finger pinched in a gait belt (n = 2), a client’s behavior injuring another person (e.g., biting, n = 2), a person getting kicked by a horse (n = 1), a person being stepped on by a horse (n = 1), and an unanticipated movement of the horse during mounting (n = 1). One occurrence involved a client falling from the horse to the ground.

Injuries. In the 36,349 yearly sessions, therapists reported five injuries, ranging from zero to three injuries per clinician (M = 0.05, SD = 0.74). Therefore, 0.01% of all sessions resulted in an injury; injury rates differed by clinician, ranging from 0% to 0.56% (M = 0.01%, SD = 0.0007). The person(s) requiring medical care included the client (n = 3), clinician (n = 3), or horse handler (n = 3). All three clinician injuries involved the same therapist, who incurred a sprain and back inflammation each time. One client injury was a sprain, and the other two were not reported. Types of injuries to the horse handler were not reported. The causes of injuries included a horse spooking (n = 4), an unanticipated movement by the client (n = 2), and an unanticipated movement of the horse during mounting (n = 1). One injury involved a client falling from the horse to the ground. No injuries resulted in a hospital admission or liability claim.

Discussion

This study aimed to describe the practice and safety patterns associated with the incorporation of hippotherapy or equine movement into PT, OT, and SLP clinical practice occurring in the United States. Results revealed common practice patterns, widespread adoption of recommended safety procedures, and low rates of safety incidents.

Practice patterns

To our knowledge, this is the first study to characterize real-world practice patterns of clinicians who use hippotherapy. Consistent with Wood and Fields’ findings of practice patterns in peer-reviewed literature,17 PT clinicians, followed closely by OT, are more likely to incorporate hippotherapy in practice than SL/P clinicians. This may be explained by the emphasis on using hippotherapy to address motor outcomes.17 While hippotherapy has its historical roots in clients with motor impairments (e.g., Polio, cerebral palsy),25 clients with social, behavior, and cognitive impairments are increasingly participating in equine-assisted services (e.g., autism, at-risk youth).26 As demand for equine-assisted services continues to broaden, the demand for SL/P clinicians who incorporate hippotherapy may increase.

While clients across the lifespan participate in hippotherapy, the current study also mirrored previous findings that most clinicians work with children.17 Equine-assisted services are most often provided to individuals with developmental disabilities such as cerebral palsy and autism17,25,27; across practice settings, children with developmental disabilities are served at higher rates than adults with developmental disabilities, which may help to explain the emphasis on pediatric clientele. Finally, this study found considerable variability in the amount of time hippotherapy was used during a session (i.e., 19 to 60 min), mirroring the frequency and duration variability found in other literature.17,27 This variability suggests that the amount of time hippotherapy is used within a session should be guided by professional reasoning, likely influenced by client goals, activity tolerance, and the overall treatment plan.

This study also illuminated practice patterns not addressed in previous literature, including geographic location, therapist credentials, and relationships of clinicians to facilities and horses. Our results suggest a higher concentration of clinicians who use hippotherapy in California, Colorado, Texas, and Virginia, with relatively fewer in the Midwest; this pattern appears to be representative of AHA, Inc. members.28 About half of respondents reported some level of AHCB certification; future research can investigate if certification is associated with client outcomes or safety. Most clinicians contract with a program that provides the facility and horses, which may limit clinicians’ influence over safety procedures and equine management. However, results suggest that this contracting model does not interfere with implementation of recommended safety practices, as discussed next.

Safety procedures

Results indicate that clinicians generally follow industry-recommended safety practices, such as implementation of emergency procedures and safety trainings. Use of safety equipment varied by equipment type; helmets were used most often, indicating compliance with AHA, Inc. and PATH Intl. recommendations for helmet use. Although PATH Intl. standards require helmet use at all times, AHA, Inc. recommends helmets “for clients who can safely wear
Conclusion

This study characterized the practice and safety patterns of the use of hippotherapy as part of a therapeutic plan of care. Results indicate widespread adoption of recommended safety procedures and low rates of safety incidents. Results can (1) help clinicians make informed decisions regarding practice and safety norms, (2) provide evidence of safety practices and incident rates to key stakeholders, and (3) maximize safety for clients who participate in hippotherapy.

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