Early Adaptation to a Novel Pediatric Gait Trainer: A Case Series Study

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***Abstract*— Cerebral palsy (CP) is a physical disability that affects musculoskeletal development and limits participation in daily activities. Gait training is essential for promoting healthy growth and functional development in children with CP. The use of gait trainers to support independence and rehabilitation is standard practice. The RooWalk is a novel, prototype gait trainer that features a posterior counterbalance-based partial weight support system and self-balancing motorized wheels for propulsion, along with a design that enhances users' access to their environment. In this study, we examined the early adaptation to the RooWalk over a single day in eight children with CP, comparing gait quality, environmental exploration, and the level of assistance required to their traditional gait trainers. Our findings revealed that the RooWalk facilitated greater independent exploration, reduced the need for assistance, and improved maneuverability. Many participants also demonstrated improved posture while walking; however, the unlearned gait patterns could be slower or less symmetric. This pilot study suggests that even after just one day of use, the RooWalk offers positive benefits for children with CP. However, additional training time is likely necessary for optimal gait adaptation. Further research is warranted to explore the long-term benefits of increased exposure to the RooWalk.**

Keywords*— *Gait Trainer, rehabilitation, cerebral palsy

I. Introduction

Cerebral palsy (CP) is the most common type of physical disability in children, greatly affecting musculoskeletal growth and involvement in everyday activities, such as those at home, school, and in the community [1]. Gait training exercises, particularly those focused on weight bearing and repetitive stepping, stimulate muscle activation and bone loading, promoting healthy growth and development [1]. Following gait training, children demonstrate higher levels of physical activity, achieving up to a 50% increase in their daily step count, which positively influences muscle strength and functional mobility [2]. This also affects their social skills, confidence, and ability to handle everyday tasks and challenges. Children with stronger locomotor skills are often more engaged in their environments, demonstrating stronger social interactions and greater life competencies [3], [4]. The purposeful implementation of gait trainers during gait training enhances the chance for active participation, which is crucial for the overall growth and wellness of children with mobility challenges [5].

There are many commercially available pediatric gait trainers. The gait trainers vary in size, level of support, and geometry. The Rifton Pacer (Rifton, NY, USA), for example (Fig. 1), provides weight-bearing assistance and positioning to users. It uses arm prompts that are designed to help with stability and posture. The base of support is stable, but the large anterior footprint prevents the user from accessing their environment (e.g., items on a shelf). The arm prompts also prevent reaching the floor, where often items of interest lay. Small diameter wheels make the Pacer difficult to manage outside of a smooth surface. The Pacer is often used with a saddle that offers fall arrest and even full weight support. The KidWalk (Prime Engineering, Fresno, CA, USA, Fig. 1), has large wheels enabling zero-point turns for maneuverability and use on non-smooth surfaces. Its posterior support saddle is spring-loaded allowing partial to full weight support if needed depending on height adjustment. It is considered a "hands-free" walker as it does not use arm prompts. Anti-tipping wheels placed anteriorly and a harness system that wraps around the thoracic area of the back both reduce the ability to access the environment. The Nimbo Posterior Walker (Drive DeVilbiss Healthcare, NY, USA, Fig. 1) is the least supportive of the three walkers, with no saddle and hand prompts for weight support. Small wheels are intended for smooth surfaces.

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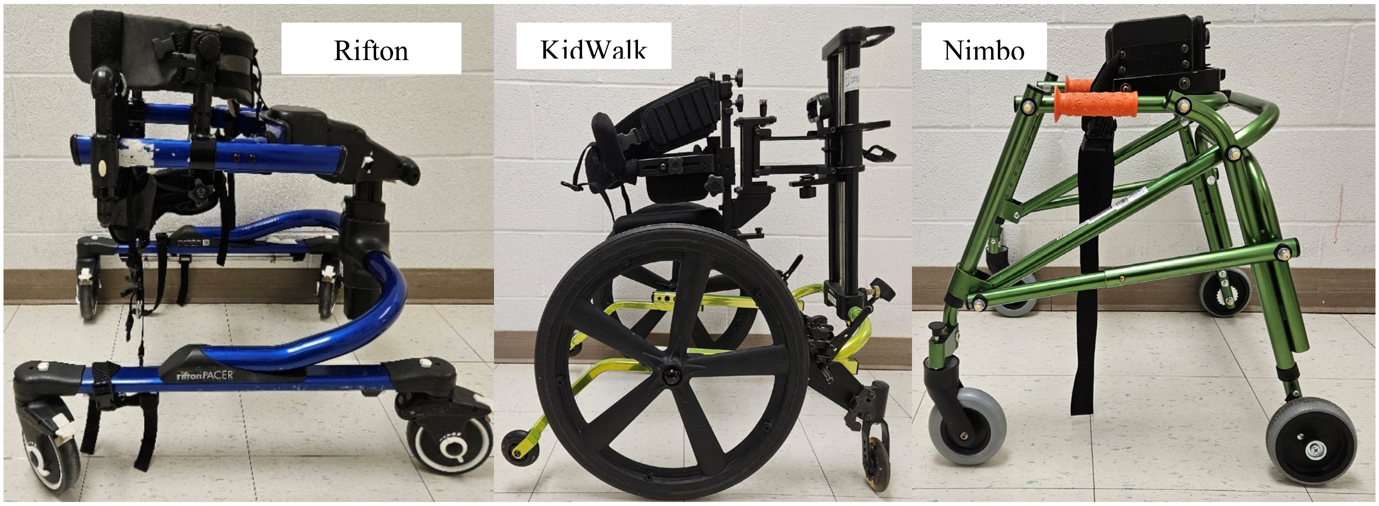

Fig. 1: Traditional gait trainers used by participants.

The RooWalk (RooWalk, Berlin, Germany, Fig. 2) is a prototype that utilizes a novel design focused on overcoming the issues with the aforementioned gait trainers. Instead of a spring-loaded or strap-based saddle, the saddle provides posterior partial weight support via a counterbalance located posteriorly. This translates to fall arrest when the anterior wheels fixed to the counterbalance structure make ground contact. This design allows some vertical motion that enables lower reaching. It also allows the anterior supports to be located closer to the user. The self-balancing motorized wheels activate based on gait intent, measured using inertial measurement units detecting step initiation. The wheels are also larger than the Pacer and Nimbo, but not as large as the KidWalk. Together with the motors, it is designed to be used on uneven surfaces.

The objective of this project was to conduct a first-in-children study to observe early adaptation of children with neurological impairments using the RooWalk prototype in a clinical setting. As a comparison, we used the child's existing gait trainer in a separate session. Since the child was naïve to the RooWalk but not their own gait trainer, this put the RooWalk at a systematic disadvantage. However, it would suggest that observed gait improvements in the RooWalk are reliable. We hypothesized that due to the designed advantages of the RooWalk, we would find: 1) improved observed exploration of the environment, 2) improved gait quality, and 3) less assistance needed to overcome obstacles and maneuver in tight spaces, compared to the typical gait trainer. Thus, here we present a case series of the early adaptation of children in the RooWalk compared to their standard gait trainer.

Fig. 2: RooWalk

II. Methods

A. Participants

Twelve participants were recruited from United Cerebral Palsy of Greater Cleveland (UCP). Inclusion criteria were: children under age 14, diagnosis of neuromuscular disorder or physical disability, GMFCS levels between II and IV, height between 80-130 cm, weight up to 30 kg, no orthopedic surgery or osteopenia/osteoporosis unless cleared by a physician, and English-speaking. Exclusion criteria were: inability for parents/guardians to provide informed consent and inability to travel to UCP for the duration of the experiment. Written informed consent was obtained from the participants' legal guardians in accordance with procedures approved by the MetroHealth Systems Institutional Review Board. Data were collected from all participants using both their own gait trainers and the RooWalk. Due to the limited timeframe for data collection, 4 participants had to be removed from the study because we were unable to obtain data from both gait trainers. Participants' characteristics, GMFCS level, and their traditional gait trainers (Fig. 1) are provided in Table 1.

B. Data Collection

Data was collected from participants in both their traditional gait trainer and the RooWalk over three days. On the first day, the participants used their traditional gait trainer. On the second day, they were familiarized with the RooWalk, and on the third day they used the RooWalk.

During data collection, participants donned five Movella Dot IMU sensors (Xsens, Enschede, The Netherlands). Sensors were placed on the torso (sternum or T10, depending on the gait trainer), the left and right dorsal wrists, and the left and right anterior ankles. Data was recorded using the Movella Dot mobile app at a rate of 20 Hz. Video recordings of the sessions were also obtained using a Canon T3i Rebel camera. A physical therapist, who the participants were already familiar with, led the sessions during which data was gathered.

During the traditional gait trainer data-gathering session on Day 1, therapists assisted the participant in donning the gait trainer. Once the device was fitted properly, the IMUs were placed as described previously. The therapist then encouraged the participant to reach as high and as low as they could with their hands in the device, which was then measured from the floor. A 6-minute walk test (6MWT) was then performed, with the therapist encouraging the participant to continuously walk. It was noted how many times the participant stopped walking and for how long during the timed walk. The therapist noted when and how much assistance was needed to aid the participant in movement. After completion of the 6MWT, participants were encouraged to walk over various terrains and obstacles and explore the environment. The therapist informed us when and how much assistance was needed to walk over the various terrains and obstacles.

On the second day, participants attended a session to be familiarize with the new device. During this time, the representatives from RooWalk ensured that the device fit properly and set the appropriate counterweight for the participant. This was judged by selecting an initial unweighting level based on the child's estimated weight and functional ability. The unweighting level was then adjusted as needed during the familiarization session to allow for adequate knee extension.

Data-gathering on activities in the RooWalk was collected on a separate day from the familiarization session without participation from RooWalk representatives. During the RooWalk data-gathering session, a therapist assisted the participant in donning the gait trainer and used the same counterweight to match the settings used during the familiarization session. Once the device was properly fitted, the IMUs were placed as previously described. The same activities were performed in both traditional gait trainer and RooWalk sessions.

After collecting data from participants using both the traditional gait trainer and the RooWalk, we asked the physical therapists who participated in the sessions to provide their assessments of the device. This was accomplished using two surveys.

The first survey asked therapists to answer questions about both devices by rating on a scale of 1 to 10. They rated the amount of assistance provided and the ease of donning/doffing the device; the participant's ability to initiate gait; the quality of their gait; their endurance with the device; their mobility; and their ability to explore their environment.

Table 1 Participant information

ID	A (y)	H (m)	GMFCS	RW Asst (%)	Gait Trainer
UCP 01	9	1.22	IV	40.7	KidWalk
UCP 02	9	1.10	III	48.7	Rifton Pacer
UCP 06	2	0.86	IV	40.3	KidWalk
UCP 08	5	1.12	II	28.3	Nimbo Posterior Walker
UCP 09	4	0.94	IV	36.5	KidWalk
UCP 10	1	0.80	III	50	Rifton Pacer
UCP 11	2	0.78	IV	55	KidWalk
UCP 12	3	1.05	IV	80.6	Rifton Pacer

A- Age, H – Height, RW Asst – percentage of weight counterbalanced by RooWalk

They were also asked about likes and dislikes for both the traditional gait trainer and the RooWalk. This survey was completed by each participant whose data were collected for both their traditional gait trainer and the RooWalk.

Based on feedback from the first survey, we asked some additional, more targeted questions. They were asked yes/no questions about the participant's ability to successfully initiate gait and to explore their environment in both devices. This was followed by asking which device they felt better supported the participant's ability to initiate gait and explore their environment. We also asked them to rate the amount of assistance they provided on a scale of 0 to 2 for each of the following conditions for both types of gait trainers: crossing thresholds, changing walking surfaces, and turning/changing direction. This survey was completed for each participant whose data was gathered for both their traditional gait trainer and the RooWalk.

C. Data Analysis

The maximum and minimum heights reached by each participant were compared between when the participant was in their traditional gait trainer and the RooWalk, using a Wilcoxon signed-rank test. Statistical significance was assessed using a two-tailed test with a 5% significance level ($\alpha = 0.05$). Analysis of the data was performed Matlab R2024b (Mathworks, Natick, USA).

IMU data was taken from sensors placed on the right and left wrists, right and left ankles, and torso. Data was processed in MATLAB to quantify movement and gait metrics for comparisons between participants walking in their traditional gait trainer and RooWalk. Bilateral ankle IMU data from each participant's 6MWT were analyzed. Heel strikes were detected using peaks in the acceleration magnitude, and stance periods were identified within each stride cycle using low-acceleration and low–angular velocity thresholds. Forward acceleration was transformed into the global reference frame using quaternion-based orientation, and gait speed was calculated by constraining velocity to zero during stance and integrating acceleration during swing to estimate stride distance [6]. Step-time symmetry was calculated by merging left and right heel strike events, isolating alternating step intervals (left-to-right and right-to-left), and computing a symmetry score as the ratio of the smaller mean step time to the larger mean step time, where values closer to 1 indicate greater symmetry [7].

III. Results

The participants showed a significant improvement in the lowest distance they could reach with the RooWalk compared with their traditional gait trainer (mean difference = 0.17 m, p = 0.008). However, there was no significant difference in maximum height reached between the two devices (p = 0.578).

The distance between the back padding and anterior wheels are reported in Table 2. Because of the different configurations of the gait trainers, these only provide a nominal understanding of the ability to reach objects. A more illustrative example is shown with participant UCP01 in Fig. 3.

Table 2 Gait Trainer measurements

Gait Trainer	Back -wheel support (m)
RooWalk	0.32
Rifton Pacer	0.52
KidWalk	0.45
Nimbo	0.40

A. *Participant Responses*

The following illustrates the case series results. We ordered the participants in terms of how well the children responded to the RooWalk according to therapist feedback from most to least responsive.

UCP08 - M, 5 yrs old, GMFCS II, compared to Nimbo walker

Gait: We found reduced average gait speed during a 6MWT (0.51 m/s in Nimbo, 0.29 m/s in RooWalk). Therapists noted that the hands-free RooWalk created a new walking pattern that prevented the participant from using his arms to unweight himself and thus slowed his gait. We observed slightly improved gait symmetry (0.79 vs 0.86) in the RooWalk. Due to large step lengths taken by the participant, the foot was sometimes temporarily caught under an overhang under the wheel structure.

Fig. 3: (left) UCP01 in her traditional gait trainer (KidWalk) as close to a wall as the trainer will allow. (right) UCP01 in the RooWalk can kiss the mirror.

Exploration: We observed increased ability to interact with the environment enabling a better approach from the front and reaching lower to the ground (41 cm vs. 14 cm). However, the participant did not engage with objects more often in the single session.

Assistance: Therapists reported less assistance needed in the RooWalk compared to the Nimbo in maneuvering in tight spaces. However, there were instances where some assistance was needed in the RooWalk over thresholds to avoid a doorjamb.

UCP06 - M, 2 yrs old, GMFCS IV, compared to KidWalk

Gait: We found increased average gait speed during a 6MWT (0.25 m/s in KidWalk, 0.29 m/s in RooWalk). However, we noted a slight decrease in gait symmetry (0.93 vs 0.90). Therapists reported increased endurance while in the RooWalk. Therapists observed greater use of the more paretic side in the RooWalk, extending through both legs and with greater heel contact. Overall, more walking activity was observed in the RooWalk.

Exploration: We observed increased interaction with his surroundings (e.g., touching a wall, knocking on a door, and playing with toys) and exploring new areas with obstacles and limited space to maneuver around them. We measured improved floor reaching capability in the RooWalk (25 cm vs 8 cm above the floor).

Assistance: Therapists reported needing less assistance during the RooWalk than with the KidWalk, particularly when changing walking surfaces and turning. We observed that UCP06 appeared to have an easier time maneuvering in tighter spaces with the RooWalk, where the space to turn around was limited.

UCP09 - M, 4 yrs old, GMFCS IV, compared to KidWalk

Gait: We found no change in average gait speed during a 6MWT (0.27 m/s in KidWalk, 0.27 m/s in RooWalk). However, we observed an increase in gait symmetry (.78 vs .90). Therapists also noted perceived improved endurance in the RooWalk. Therapists noted greater flat foot contact on left side.

Exploration: We noted increased ability to interact with the environment when facing the object such as playing with a toy on a low bench. He was also able to explore down a narrow hallway that he previously was unable to access. We also measured lower reach capability in the RooWalk (14 cm vs 7.5 cm). UCP09 required an additional strap for upper trunk support, which reduced low-reaching capability.

Assistance: Therapists reported no change in assistance needed in the RooWalk compared to the KidWalk, although assistance in his traditional gait trainer was already low. Therapists noted improved maneuvering through tight spaces, including through a narrow hallway and door that had not been accessed before by a child in a gait trainer.

UCP11 - F, 2 yrs old, GMFCS IV, compared to KidWalk
Gait: We found a slight decrease in gait speed during the 6MWT (0.24 m/s in Rifton, 0.21 in RooWalk), and a decrease in gait symmetry (.82 vs .68). It should be noted that in this case, the therapist occasionally exerted a small forward push during KidWalk walking, but this was unlikely to have a substantial effect on the 6MWT. Therapists noted that lower extremity alignment was improved in the RooWalk, with hips in a more neutral position and toes facing forward compared to larger hip rotation seen while in the Rifton.

Exploration: We observed increased ability to interact with the environment enabling a better approach from the front (e.g., walking up to a therapist and giving them a hug, approaching a mirror, bouncing, reaching and grabbing toys, and opening and closing cabinets). She would turn away from adults and wander off to explore. The child was also able to reach lower in the RooWalk (13 cm Rifton vs 8 cm RooWalk).

Assistance: The therapists reported needing to provide less assistance while using the RooWalk than with their standard gait trainer, particularly when going through thresholds and changing walking surfaces. UCP11 did not need assistance changing direction in either device.

UCP01 - F, 9 yrs old, GMFCS IV, compared to KidWalk
Gait: Therapists noted a decrement in gait quality while in the RooWalk, evidenced by reduced gait speed (0.48 m/s KidWalk, 0.31 m/s in RooWalk). Step time symmetry remained largely similar (0.78 vs 0.79), but when walking in the RooWalk, the participant often took a tentative, short step with her left, higher-functioning foot, illustrating a lack of comfort with the new device.

Exploration: UCP01's ability to explore increased while in the RooWalk. She was able to get closer to objects (e.g., toys, a mirror, tables, see Fig. 3) and reach toys that were lower on the ground (46 cm in KidWalk, 30 cm above ground in RooWalk). The low-reaching capability was reduced in the RooWalk because she needed an additional trunk support strap (height was 1.22 m). Therapists noted a general increase in mobility and ability to explore their surroundings while in the RooWalk compared to in the standard gait trainer.

Assistance: The level of assistance provided by the therapist, while in the RooWalk, was similar to that provided while in her standard gait trainer. However, UCP01 did go up and down a ramp while in both devices, and the therapist noted that while some assistance was required while on the ramp in the RooWalk, less was needed than when in her traditional gait trainer. Some assistance was required while going through thresholds and changing walking surfaces in both devices, while no assistance was needed when turning.

UCP10 - M, 1 yr old, GMFCS III, compared to Rifton Pacer
Gait: We found no change in gait speed during the 6MWT (0.24 in Rifton, 0.24 in RooWalk) and a decrease in step symmetry (0.74 vs 0.60) while using the RooWalk. UCP10 primarily used jumping as a method of locomotion in the RooWalk rather than a more traditional walking pattern and he was unable to properly initiate gait. UCP10 is new to walking, therapists felt that with more exposure to the RooWalk gait quality would improve.

Exploration: We observed increased ability to interact with the environment due to the hands-free design of the RooWalk, enabling a better approach from the front and reaching lower to the ground (25 cm vs 18 cm). Therapists noted that exploration, in terms of movement was better in their traditional gait trainer, possibly due to being used to navigating in the Rifton, but overall he did not show much interest in exploring or interacting with his environment in either gait trainer.

Assistance: The level of assistance therapists reported needing to use with the RooWalk was comparable to that used in the Rifton. However, the therapist reported more assistance was required to turn while in the RooWalk, which was unique to the rest of the participants.

UCP02 - F, 9 yrs old, GMFCS III, compared to Rifton Pacer
Gait: We found slightly decreased average gait speed (0.18 m/s in Rifton, 0.17 m/s in RooWalk) and reduced step symmetry (0.74 vs 0.57) for UCP02 while using the RooWalk. She also took small steps in both devices and had difficulty initiating gait while in either trainer.

Exploration: UCP02 was able to get closer to objects in front of her in the RooWalk. She was also able to reach slightly lower while in the RooWalk (22 cm) than she could in the Rifton (25 cm). UCP02 needed an additional strap for upper trunk support. Therapists noted that UCP02's ability to explore her environment appeared to increase while in the RooWalk.

Assistance: Therapists reported that assistance was needed for both gait trainers. The assistance of the RooWalk was for both propulsion and for unweighting. Some of this difficulty likely stemmed from scoliosis and increased muscle tone.

UCP12 - M, 3 yrs old, GMFCS IV, compared to Rifton Pacer
Gait: We found a decrease in gait speed during the 6MWT (0.97 m/s in Rifton, 0.87 m/s in RooWalk), though this child took the least amount of steps of any participant during the 6MWT. UCP12 used jumping as their method of locomotion over a traditional walking pattern. Therapists noted that UCP12 could not initiate gait while in either gait trainer.

Exploration: The child did not appear to explore in either gait trainer, although we measured a lower reach in the RooWalk (10.5 cm) than in the Rifton (18.5 cm).

Assistance: The therapists noted that slightly less assistance was needed in the RooWalk when turning and changing walking surfaces. The added strap to the RooWalk enabled a straighter posture.

It should be noted that this participant did not receive a familiarization session with the RooWalk.

IV. Discussion

This project aimed to evaluate the early adaptation of walking with the novel, prototype RooWalk motorized gait trainer compared to each participant's standard gait trainer. We hypothesized that the RooWalk's features, including motorized assistance, would enhance gait characteristics, independence, and environmental exploration within a single session. A case series was conducted with eight children diagnosed with cerebral palsy and related disorders, ranging in age and classified as GMFCS levels II–IV. We observed how participants interacted with their environment using both devices, gathered therapists' assessments of performance and gait quality, and measured outcomes such as gait speed and step symmetry. Our findings indicated increased ability for environmental exploration and greater independence during walking with the RooWalk. The RooWalk reduced the need for gait propulsion compensations, but the limited training time was insufficient for full adaptation and more natural gait patterns. This study represents the first evaluation of the novel RooWalk gait trainer prototype.

The RooWalk provided children with greater opportunities for independent exploration. It has the shortest anterior distance to the front support wheels. This allows for more access to the environment, including the ability to fully access walls. Additionally, the counterbalance-based design allows for increased range in vertical reach capability, which was somewhat mitigated for some participants who needed additional upper trunk support. While the full benefits of increased environmental access were not immediately clear, we speculate that with more time to familiarize with the RooWalk, greater exploration would follow. We are unaware of any commercially available gait trainers that allow for this level of physical access to the environment. The ability to access the environment while being mobile is an important aspect of independence and in childhood development [1], [8], [9]. Whether the RooWalk could foster this higher level of independent exploration is an interesting area for future research.

Overall, our observations suggest that the RooWalk would be ideal for kids with delays but an intent to move. It would be best in cases when a child is early in the process of learning to walk, as the RooWalk is designed to encourage good walking habits. Unlike robotic exoskeletal training [10], [11], it does not control lower limb kinematics but allows the child to find their own gait pattern, which is more closely aligned with guidelines of physical therapy [12]. Because the RooWalk is a partial weight support device, the foot will be in full contact with the ground, encouraging using the whole foot to propel forward, versus in the traditional gait trainers children often use just their toes to propel forward. There was also a perceived increase in endurance while in the RooWalk; many participants tolerated being in the RooWalk longer than therapists expected. This is good to encourage 60 min of activity, which is ideal for child development.

RooWalk reduced the amount of propulsion assistance needed in most cases. This was expected given that the RooWalk is motorized. There was an increased ability to overcome thresholds. However, one child who responded well to the RooWalk (UCP08) needed greater assistance over thresholds due to navigating a narrow door jamb. The motorization also helped the children maneuver around tight spaces when they wanted to explore them. In one child (UCP01), the RooWalk assisted with inclined ramp walking. We were unable to fully explore the effects of motorized assistance on rough terrain, which would likely reveal the greatest differences compared to standard gait trainers, particularly those like the Rifton Pacer that use small wheels.

Gait in the RooWalk changed unevenly in the participants, reflecting different levels of adaptation over a single session. We observed improved posture in the RooWalk (e.g., UCP08 and UCP09) with no instances of decrements in posture. Therapists noted compensatory patterns learned in traditional gait trainers carried over to subsequent RooWalk use, complicating learning this new walking pattern. The RooWalk allowed users to walk with a flatter foot, which causes an altered gait pattern from the toe-walking pattern in their traditional gait trainer. It is likely that the impact of this new gait pattern caused children to walk more slowly when in the RooWalk. Gait symmetry varied among individuals, with no clear explanation for this variance. Interestingly, one participant who responded well to the RooWalk (UCP08) occasionally had a foot get caught under the wheel structure, but we note that this child took longer steps than the other participants, and further, used his arms to support his weight during walking in the Nimbo. Our findings suggest that days or weeks of RooWalk exposure are needed to determine responders to gait training.

This study has several limitations. First, participants completed only a single familiarization and walking session with the RooWalk, compared to their extensive experience with traditional gait trainers. This design was intentional to ensure that any observed benefits of the RooWalk were not confounded by unfamiliarity with the traditional device. However, this approach may have placed the RooWalk at a competitive disadvantage, and we cannot determine how gait parameters might improve with increased exposure and practice. It is also worth noting that some gait trainers used arm or hand prompts, which allowed users to unweight themselves, making a direct head-to-head comparison of gait parameters more difficult to interpret.

Another limitation was the challenge of collecting rigorous, quantitative performance data. Young children often found it difficult to complete standard clinical tests, maintain attention, and perform repeated movements consistently. For instance, during the 6MWT, participants sometimes jumped, wandered, or stopped, which limited our ability to rely on quantitative gait outcomes and necessitated a greater emphasis on qualitative observations from therapists and video recordings. Quantifying aspects such as independence, environmental exploration, and therapist assistance was also difficult within the clinical setting.

Additionally, our small cohort was highly heterogeneous in age, height, Gross Motor Function Classification System (GMFCS) level, and prior experience with gait trainers. Despite these challenges, several children demonstrated new and meaningful interactions with their environment while using the RooWalk, which is particularly notable after just one day of use.

As a case series, this study provides valuable insights that will inform the design and outcome measures of future clinical trials aimed at establishing conclusive evidence regarding the benefits of the RooWalk. Finally, it is important to note that the RooWalk is still a prototype, and ongoing design improvements are expected to address some of the limitations identified in this study.

This study is particularly unique because the creators of the RooWalk, still in prototype phase and not yet commercially available, demonstrated commendable openness by permitting an independent pilot investigation directly comparing their device to traditional gait trainers, despite the inherent disadvantage of user unfamiliarity with the RooWalk. While studies have compared gait trainers from large, established companies whose products are well-integrated into the market [13], such head-to-head comparisons are rare among startups. For example, although a commercially available powered gait trainer has been independently evaluated for usability, user opinions, and clinical outcomes [10], [11], [14], [15], these studies have not directly compared the device to existing technologies. Yet, this type of comparison is crucial for informed decision-making by parents and caregivers [16], even though choices are often made based on face validity rather than direct evidence [10], [17]. Currently, there is no equivalent of *Consumer Reports* for rehabilitation technology. As such, the head-to-head approach taken with the RooWalk should be encouraged, with the understanding that technologies evolve and improve over time. Therefore, it is important not to render definitive judgments based on early comparisons alone.

V. Conclusions

The RooWalk's novel design sets it apart from commercially available gait trainers. It enables greater exploration and maneuverability compared to participants' standard devices. The motorized wheels were particularly beneficial for children who demonstrated an interest in independent movement and environmental exploration, suggesting the RooWalk may help facilitate increased daily activity. However, further research is needed to fully assess its impact on gait quality and overall clinical outcomes.

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Conflicts of Interest

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