

POWER WHEELCHAIR SKILLS TRAINING

Power Wheelchair Skills Training for Pediatric Power Wheelchair Users

Brynn T. Seigel

Department of Occupational Therapy, Indiana University Indianapolis

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Acknowledgements

I am incredibly grateful to the many individuals who have supported, guided, and encouraged me throughout my doctoral capstone experience and occupational therapy school.

First, I would like to thank Dr. Tony Chase, the Program Director of Skills on Wheels and the Content Expert for my project. I appreciate his expertise and guidance throughout the research process. His support and confidence in my abilities motivated me to take on challenges and grow professionally. I would also like to thank Dr. Tiffany Stead, Skills on Wheels Clinical Director, for her support, insight, and encouragement throughout this process. Her passion for pediatric therapy and wheelchair skills training has been a source of inspiration in my learning. A special thank you to Dr. Sally Wasmuth, my faculty mentor, for her mentorship in the planning process of my project and the composition of my capstone paper.

I am grateful to Mackenzie Wolf, my fellow capstone student, for her collaboration and friendship. The program would not be what it is without her. Additionally, I extend my appreciation to Joseph Radabaugh and Emily Miller, whose mentorship and expertise in power wheelchairs have been invaluable. Their knowledge has greatly enhanced my understanding and skills in ways I will carry forward in my career. I would like to thank everyone in the Indiana University Occupational Therapy Department. The support and connection among my professors and classmates have fostered a sense of belonging beyond the classroom.

I would like to express my deepest gratitude to my parents for their unconditional love and encouragement. Their support has been the foundation of my success, and I am forever thankful for everything they have done for me. Lastly, I would like to thank my incredible husband for his unwavering love and patience throughout this journey. I am beyond grateful to have him by my side.

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Abstract

Skills on Wheels (SOW) is a wheelchair skills training program for children who use manual wheelchairs. Although it is recommended that all individuals who receive a manual or power wheelchair participate in wheelchair skills training, very limited training is available. Literature suggests that play-based wheelchair skills training in a safe environment that reflects the values of the child and family leads to improvements in skills capacity, performance, participation, self-efficacy, and quality of life. Unfortunately, clinicians often lack guidance on how or when to provide training and may focus only on basic skills. The effect of wheelchair skills training on participation can be explained using the Person-Environment-Occupation Performance (PEOP) model, which emphasizes how occupational performance is shaped by the interaction of personal abilities and values, with environmental supports and barriers. This model emphasizes strengths over deficits and illustrates how improved mobility skills can support participation in meaningful activities. The capstone student used the recommendations provided in the literature to implement play-based power wheelchair skills training into SOW's existing program by planning games and activities that target wheelchair skills, recruiting participants, recruiting and training volunteers, and ensuring safe and effective skills training. The participant who attended the program demonstrated increased skill performance, confidence, and frequency of skill use. However, there was no increase in participation, possibly due to environmental barriers and limited time for generalization to everyday environments. This project may lead to future research on power wheelchair skills training programs and continued power wheelchair skills training at SOW.

Keywords: wheelchair skills training, power wheelchair, pediatrics, participation

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Power Wheelchair Skills Training for Pediatric Power Wheelchair Users

Despite efforts to make sidewalks, transportation, public buildings, and other areas accessible, wheelchair users still face barriers to participating in activities in the community. Power wheelchair users (PWCUs) have reported encountering ramps that were unsafe, doorways that were too narrow, and bathrooms that were too small to transfer from their wheelchair to the toilet. Unfortunately, these barriers will continue to impede wheelchair users' participation until a systemic change is made. Some accessibility issues, however, can be mitigated through wheelchair skills training programs. For example, PWCUs face challenges navigating uneven pavement, garbage on walkways, and crowded sidewalks. New PWCUs often find it difficult to use the power chair's controls or transfer in and out of their vehicle, even if the car has been designed to be accessible (Torkia et al., 2014).

Children who use wheelchairs want to be able to play and engage in activities with their peers. In a study by Ouellet et al. (2024), pediatric wheelchair users were asked to create goals for themselves. A few goals listed by the children in the study were, "get in/out of the house independently," "chase sisters and cousins," and "get to/from school" (Ouellet et al., 2024, p. 7). These goals portray pediatric wheelchair users' desire to be able to be independent in functional mobility, social participation, and basic self-care. Skills like the ones identified by these children are achievable for many wheelchair users through regular training.

Skills on Wheels (SOW) is the first program of its kind and offers pediatric manual wheelchair skills training (Chase et al., 2024). At the time of this publication, no similar program exists for pediatric PWCUs. The purpose of this project is to expand the scope of SOW to include power wheelchair skills training so that more children who use wheelchairs can increase their independence and participation in everyday activities.

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Needs Assessment for Power Wheelchair Skills Training at Skills on Wheels

Researchers at Dalhousie University designed a Wheelchair Skills Training Program (WSTP) with detailed instructions for training both manual wheelchair users (MWCUs) and PWCUs to navigate their environments in their wheelchairs. Indiana University used this program to create SOW, an organization in Indianapolis, IN that hosts wheelchair skills training each year for pediatric MWCUs. The skills targeted during SOW sessions include basic skills, such as rolling forward and backward, to more advanced skills like performing wheelies and ascending and descending stairs (Chase et al., 2024). SOW was selected as a capstone site because they currently offer skills training to MWCUs, and they have potential to expand their training to PWCUs.

During an interview with the director of SOW, the capstone student found that SOW works with a therapist who conducts research with PWCUs. Additionally, Dalhousie University's program manual, which SOW uses for manual wheelchair skills training, includes instructions for providing wheelchair skills training for PWCUs. Despite these supports in place, SOW has not yet opened enrollment to PWCUs.

Gap Analysis

Rosen et al. (2023) reported that approximately 145,000 children in the United States use a mobility device, such as a walker or wheelchair. Although the World Health Organization (WHO) recommends that all wheelchair users participate in wheelchair skills training, wheelchair users typically receive very limited training (Burrola-Mendez et al., 2022; World Health Organization, 2023).

SOW is a pediatric wheelchair skills training program for children who use manual wheelchairs. SOW hosted their first program in 2021 with four participants (Chase et al., 2024).

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The program is quickly growing, reaching 23 children in 2024. In addition to pediatric wheelchair skills training, SOW also organizes community outings (zoo fieldtrips, baseball games, etc.), caregiver resources, and wheelchair skills training for adults who use wheelchairs.

SOW has greatly impacted the children and families it serves by teaching the skills MWCUs need to fully participate at home, school, and in the community. Currently, the training SOW provides is limited to MWCUs. They could reach more children by expanding to PWCUs, as well. Therefore, the purpose of this capstone project is to offer power wheelchair skills training at SOW's current program.

Current State

Site Profile

Each spring, SOW hosts wheelchair skills training sessions for three hours each week over the course of four to five weeks. While most of the SOW program is completed inside the building with simulated curbs, obstacles, and other materials, the final day of the program is Community Day, which involves time dedicated to practicing skills in the community. This gives the children an opportunity to practice their skills in environments similar to what they may encounter in everyday life. Guided by wheelchair skills trainers, caregivers are invited to practice spotting and training their child on Community Day to increase carryover of skills to their home, school, and community environments.

SOW adapted Dalhousie University's WSTP for use with the pediatric population. The manual training program can be used to teach 30 skills, including rolling forward and backward, performing wheelies, and going up and down curbs (Dalhousie University, 2023). Training at SOW is implemented by occupational therapists (OTs), occupational therapy students, and other healthcare professionals and health professions students. In addition to wheelchair skills trainers,

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peer mentors who are wheelchair users and have graduated from SOW are present throughout the training sessions to provide additional training, feedback, and demonstration of skills. Although there is a need for wheelchair skills training for children who use power wheelchairs, SOW currently serves only manual wheelchair users.

Community Profile

Children may qualify for a manual or power wheelchair if their mobility deficits limit their participation in play, school, social participation, self-care, or other daily tasks (Pride Mobility Products Corp., n.d.). Children who use wheelchairs may have an orthopedic or neuromuscular disability, such as multiple sclerosis, muscular dystrophy, or cerebral palsy. These children may use a wheelchair as their sole method of functional mobility or as an alternative to walking when their lower extremities become fatigued (Redman Power Chair, 2022).

Rosen et al. (2023) recommend power wheelchairs for children who will likely never be able to walk, children who lack efficient mobility, those who acquire a disability that affects mobility, and children whose delayed walking is limiting their participation with peers. Most power wheelchairs fit into one of three categories: travel, full-size, or heavy duty (Silver Cross, 2024). The type of powerchair a child should use is typically decided by the child's pediatrician, OT and/or an assistive technology professional (ATP), and the child's caregiver or caregivers. The child's size, their cognitive and physical abilities, and the environments the chair will be used in are factors that help determine the best wheelchair for a child. The accessibility of the family's home, car, and school are also important factors to consider when choosing a power wheelchair (Pride Mobility Products Corp., n.d.).

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SOW currently serves MWCUs ages 6-17 years with various congenital and acquired disabilities, including spina bifida, spinal cord injury, and cerebral palsy. Most SOW participants live in the Indianapolis area. Caregivers and siblings of participants are invited to SOW sessions to receive education on wheelchairs and to connect with other families of wheelchair users (Chase et al., 2024).

Desired State

SOW is constantly expanding and improving and has recently started a manual wheelchair skills training program for adults. SOW has an impactful training program for MWCUs, and they hope to use this momentum to reach additional populations. SOW wanted to invite pediatric PWCUs to their Spring of 2025 program. Dalhousie's WSTP provides training information for individuals who use power wheelchairs, which will facilitate the addition of power wheelchair skills training at SOW. Using this manual, SOW can provide training over using the powerchair's controls, maneuvering around objects, and controlling speed when navigating ramps and environments with limited space (Dalhousie University, 2023).

Identified Gap

WHO published a document outlining the best practices for wheelchair service provision in 2023. WHO recommends that each individual receiving a new wheelchair be assessed to select an appropriate wheelchair and have the wheelchair fitted to them. WHO also recommends that all new wheelchair users participate in training to learn how to navigate the environment in their wheelchair, how to use the components of the chair, and how to take care of their wheelchair (maintenance, repairs, etc.). Finally, they recommend follow-up appointments throughout the wheelchair user's life to ensure the wheelchair continues to fit properly and the individual is using the wheelchair correctly (World Health Organization, 2023).

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Despite these recommendations, the training aspect of wheelchair provision is often overlooked. Burrola-Mendez et al. (2022) reported that most healthcare professionals who provide wheelchairs do not offer wheelchair skills training. Those who offer wheelchair skills training typically spend 30-45 minutes total addressing wheelchair skills training before discharge. Due to this gap, wheelchair users must learn to navigate the natural and built environment on their own. This can lead to decreased participation, low self-esteem, safety hazards, and even wheelchair abandonment (Kirby et al., 2015).

Gap Analysis Summary

SOW is a fast-growing wheelchair skills training program for pediatric MWCUs. They have reached many pediatric MWCUs and their families with their program; however, they have not yet extended the program to children who use power wheelchairs. The purpose of this capstone project is to increase accessibility of power wheelchair skills training to improve children's competence, confidence, and independence with wheeled mobility and other meaningful occupations.

Literature Review

Wheelchair skills training is instruction to wheelchair users and, sometimes, their caregivers on maneuvering their wheelchair, positioning themselves in the chair, transferring in and out of their wheelchair, and performing basic maintenance on the wheelchair (Dalhousie, 2023). For successful wheelchair skills training sessions, it is helpful to consider the wheelchair users' values, beliefs, support system, natural and built environments, and preferred activities. These factors can all impact participation in meaningful activities (Cole & Tufano, 2020).

Despite recommendations to provide wheelchair skills training to all individuals who receive a wheelchair, many wheelchair users do not have the opportunity to participate in formal

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wheelchair skills training (Burrola-Mendez et al., 2022; World Health Organization, 2023). The ability to navigate one's environment increases participation in everyday activities. Wheelchair skills training is essential for increasing pediatric wheelchair users' safety and independence in functional mobility. Wheelchair skills training can lead to improvements in wheelchair skills capacity and performance, participation, and quality of life (Ouellet et al., 2022).

Effects of Wheeled Mobility Training

Skills Capacity

Wheelchair skills training is correlated with improvements in PWCUs' skills capacity, or their ability to use their wheelchairs in a standardized environment. Improvements in one's wheelchair skills capacity allows for safer and more efficient execution of everyday activities. Training programs such as the Wheelchair Skills Program (WSP) provide a structured training protocol and allow researchers to measure wheelchair skills capacity by providing standardized measures for evaluating skills (Dalhousie University, 2023; Ouellet et al., 2022).

Ouellet et al. (2022) reported significant improvements in Wheelchair Skills Test (WST) scores among eight children and adolescents who use manual or power wheelchairs after two 120-minute wheelchair training sessions. The WST is a standardized assessment that measures a wheelchair user's capacity to execute wheelchair skills that are important for participation in everyday activities. This training program was led by adult wheelchair users in a group setting. Training took place both in indoor and community settings and was implemented based on principles from the Seating To Go program and the WSP 5.0 (Ouellet et al., 2022).

Results from two systematic reviews indicate that participation in a wheelchair skills training program is correlated with significant improvements in wheelchair skills capacity (Keeler et al., 2019; Naaris et al., 2023). Participants of the studies included in the systematic

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reviews were children and adults, and both MWCUs and PWCUs. Interestingly, training programs including only children had more significant impacts on basic mobility skills (Naaris et al., 2023), while programs for only adults yielded larger improvements in advanced wheelchair skills (Keeler et al., 2019). A possible explanation for this difference is that children have less experience using their wheelchairs and need to master basic skills before succeeding in advanced skills. Conversely, adults may already be proficient in basic skills, leading to a ceiling effect, but are still able to improve in more advanced skills.

Naaris et al. (2024) conducted a study of 12 children and adolescents who use power wheelchairs to assess the effectiveness of a four-week individual wheelchair skills training program. The participants' average WST scores improved significantly after the training program and did not change after a four-week follow-up period. It is also important to note that all participants were experienced wheelchair users, indicating that wheelchair skills training is effective, even for those who already know how to navigate their environments in their wheelchairs (Naaris et al., 2024).

Skills Performance

While wheelchair skills capacity refers to one's ability to use their wheelchair in a standardized setting, skills performance is how they use their wheelchairs practically in various environments and situations. A wheelchair user might have a high skills capacity, as they can perform wheelchair skills in a controlled setting with a trainer present. However, they might have poorer skills performance, as it is more difficult to perform wheelchair skills in novel environments or without the presence of a spotter or trainer (Dalhousie University, 2023).

Ouellet et al. (2022) found that although the participants' wheelchair skills capacity improved with training, their caregivers reported little to no change in daily use of the skills

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learned. This may be due to the short timeframe (two sessions) of training or the caregivers' natural inclination to help their children, even if their child was able to complete skills during training (Ouellet et al., 2022).

While this study yielded minimal differences in wheelchair skills performance between baseline and post-study, several others indicated that wheelchair skills training can lead to significant improvements in performance. Naaris et al. (2024) used the Wheelchair Skills Test Questionnaire (WST-Q) to assess wheelchair skills performance among 12 children and adolescents who use power wheelchairs. The WST-Q assesses the same skills as the WST but is written in a questionnaire format that includes questions about the wheelchair user's performance, confidence, and frequency with which they use each skill. The researchers found that four weeks of wheelchair training using the WSTP was correlated with significant improvements in outdoor skills performance. Furthermore, children performed outdoor skills more frequently following training (Naaris et al., 2024).

Participation

Improvements in wheelchair skills capacity and performance lead to increased confidence. With increased confidence, wheelchair users are more likely to use and practice the skills they have learned and seek out ways to improve upon their skills. In addition to improving skills capacity and performance, several studies also found significant differences in children's participation (involvement in meaningful daily life activities) following wheelchair skills training (AOTA, 2020; Naaris et al., 2023; Naaris et al., 2024; Ouellet et al., 2022; Rosenberg et al., 2023).

Participants of a four-week wheelchair skills training program were reported to have significant improvements in both performance in everyday activities and satisfaction with their

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performance after training. These findings are based on results from the Canadian Occupational Performance Measure (COPM) and include only mobility-related participation. The COPM is an interview-based assessment in which the client ranks their most meaningful self-care, productivity, and leisure occupations. The client then rates their performance and satisfaction with performance for each meaningful occupation. The authors point out that continued wheelchair skills training throughout childhood is integral to optimizing participation, as children grow and their interests change over time (Naaris et al., 2024).

Ouellet et al. (2022) reported that two two-hour wheelchair training sessions led to improvement in overall participation among children who use manual or power wheelchairs. At the beginning of the study, participants and their caregivers were asked to identify occupational goals and rate the importance and their satisfaction with participation in their targeted occupations using the Wheelchair Outcome Measure for Young People (WhOM-YP). Most of their goals were associated with community engagement, independence in activities of daily living (ADLs), and participation in home management activities. Children and their caregivers completed the WhOM-YP at baseline and after intervention to assess participation in each identified occupation. The results from the WhOM-YP indicated significant differences in perceived importance and satisfaction with participation (Ouellet et al., 2022).

In a qualitative study by Rosenberg et al (2023), camp staff noted improvements in children's participation after engaging in a three-week power wheelchair skills camp. Specifically, the children demonstrated increased independence in mobility, as well as improved attention, engagement, and motivation during camp activities. In addition to improvements in mobility-related participation, the campers were also noted to have an increase in social

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participation. The camp staff noted that the children's communication with staff and peers improved, as well as their ability to initiate conversations and activities (Rosenberg et al., 2023).

A systematic review of pediatric manual and power wheelchair training indicated that wheelchair mobility training may lead to improvements in satisfaction with participation. Two of the studies included in the review used behavioral activation therapy in addition to wheelchair skills training to improve participation (Naaris et al., 2023). Therefore, it is possible that these improvements are related to behavioral activation therapy rather than a direct result of wheelchair skills training. The authors did, however, include studies that discuss the effects of wheelchair skills training on participation without specifically targeting participation during training. Only minimal improvements in participation were found, and researchers noted that some differences may be due to the provision of a power wheelchair to children who did not previously use an assistive mobility device and may not be related to wheelchair skills training itself (Naaris et al., 2023).

Self-Efficacy and Quality of Life

Self-efficacy refers to one's belief about their ability to persevere through challenges of life, while quality of life is based on a person's perspective on their physical, mental, and social well-being. Self-efficacy and quality of life have a strong positive correlation among adolescents (Mikkelsen et al., 2020). Engagement in a group activity, such as a wheelchair skills training program, can lead to increased self-efficacy (Ouellet et al., 2022).

Children who participated in a wheelchair training program for four hours over two sessions showed significant improvements in confidence with using their wheelchair. Additionally, their parents reported increased confidence in their child's ability to use their wheelchair. When parents are confident in their child's wheelchair skills, they will give their

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child more independence, allowing them to further improve and refine their skills (Ouellet et al., 2022).

Rosenberg et al. (2023) surveyed camp staff at a powered mobility summer camp for kids to identify changes in participation and quality of life among children who use power wheelchairs. Overall, they found improvements in mood, behavior, confidence, sense of control, and sense of competency. These changes were evidenced by the campers' increased motivation and ability to initiate activities. Several campers also demonstrated increased social participation, which improved their social support from peers and camp staff (Rosenberg et al., 2023).

Interestingly, despite improvements in quality of life reported by other studies, Naaris et al. (2024) found no change in quality of life. Participants of this study noted improvements in wheelchair skills and participation in meaningful activities, but no significant differences were noted in quality of life. Perhaps this lack of change is due to the short duration of training (four weeks) and short period before follow-up (four weeks). Another possible explanation for this finding is the small sample size of 12 participants (Naaris et al., 2024).

Five studies included in a systematic review by Naaris et al. (2023) noted improvements in children's quality of life following wheelchair skills training. However, three of these studies had a risk of bias and two of the studies included only one participant. Additionally, they found that simply providing a wheelchair to a child without implementation of wheelchair skills training also improved quality of life. Therefore, more research is necessary to determine the effects of wheelchair skills training on quality of life.

Current Wheelchair Skills Training Practices

Despite the evidence that wheelchair skills training leads to improvements in many areas, wheelchair users are offered minimal training when they receive their wheelchair. Clinicians

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report that they typically provide 30-45 minutes of wheelchair skills training over the course of about two sessions to each person who receives a wheelchair. Less than 20 percent of clinicians provide wheelchair skills training after prescribing a wheelchair (Kirby et al., 2020; Kirby et al., 2021).

Most clinicians feel that it is very important to provide wheelchair skills training to wheelchair users and their caregivers, but they face several barriers that limit their ability to provide such training. The most common barriers reported by clinicians are limited time to provide wheelchair skills training and insufficient resources. Another potential barrier to wheelchair skills training is lack of knowledge of when to provide training. Clinicians in long-term care facilities felt that training was not beneficial due to the clients' cognitive impairments. Others assume that training is provided during a different stage of care (Kirby et al., 2020; Kirby et al., 2021). These barriers and misunderstandings contribute to a gap in provision of wheelchair skills training.

A cross-sectional survey conducted in Ireland indicated that occupational therapists in primary care, community care, and rehabilitation settings typically provide training in transfers and basic mobility. However, they do not frequently train wheelchair users in ADLs, instrumental activities of daily living, advanced mobility, and maintenance and repair of their wheelchairs. They spend an average of one to four hours over one to five sessions on wheelchair skills training with each client. The most significant barrier reported by these therapists was lack of confidence in providing advanced wheelchair skills training (Mathis & Gowran, 2021).

Best Practices for Power Wheelchair Skills Training

Current literature indicates that play-based training in the participant's natural environment leads to optimal improvements in power wheelchair skill capacity, performance,

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and self-efficacy. Additionally, training should be relevant to the child's and family's goals and values (Kenyon et al., 2018; Kenyon et al., 2020; Rosenberg et al., 2019). The skills offered in wheelchair skills training should include a range of skills from basic (e.g., activating the joystick) to advanced skills (e.g., ascending curbs) (Rosenberg et al., 2019).

Kenyon et al. (2020) expanded upon the three stages of learning power wheelchair skills identified by Field and Livingstone (2018): exploratory, operational, and functional. In the exploratory stage, kids are still getting to know their wheelchair and learning cause and effect of wheelchair controls. At this stage, they recommend providing opportunities for accidental activation of the power wheelchair's controls, such as putting a sticker on the joystick for the child to pull off. When the child is pulling the sticker off, the joystick will be activated, making the wheelchair move. During this stage, therapists should use simple words to describe the wheelchair's movements, such as "go" or "stop," and provide opportunities for safe collisions.

The second stage, operational, involves learning the functions of the wheelchair. In this stage, therapists should help children work through problems, such as getting their wheelchair out of a tight space. This is also a good time to encourage safe use of the wheelchair, such as controlling speed or keeping arms within the boundaries of the wheelchair. In the operational stage, children will start to understand the size of their wheelchair and the importance of being aware of the wheelchair's size when navigating narrow hallways or crowded sidewalks (Kenyon et al., 2020).

The final stage of power wheelchair skills training is the functional stage. This is when children use the skills they learned in the operational stage and apply them to everyday activities. Therapists can assist children in learning how to do their chores, maneuver around obstacles, and

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multi-task. Children should also practice self-advocacy in this stage, such as asking someone to move out of the way or to reach something on a high shelf (Kenyon et al., 2020).

Throughout all three stages, five fundamental principles should be observed:

“Collaborating with others, Ensuring safety, Playing, Providing practice opportunities, and Setting-up equipment” (Kenyon et al., 2020, p. 306). Collaboration is accomplished by considering the child’s goals, values, fears, and emotions related to wheelchair skills training. Training should take place in a safe environment where children can feel confident taking risks. Wheelchair skills training should be play-based and fun to keep children motivated. Regular practice and repetition are vital aspects of learning. Finally, equipment should be tailored to the child by ensuring they have a comfortable seat and controls that are adapted to accommodate their needs.

Guiding Model

The purpose and importance of wheelchair skills training can be described using Person-Environment-Occupation Performance (PEOP) model. The PEOP model explores the effect of intrinsic (e.g., values, beliefs, confidence) and extrinsic (e.g., context, social support) factors on occupational performance. This model was created to decrease the focus on the person’s deficits and instead emphasize their abilities, goals, and supports (Cole & Tufano, 2020).

An individual’s performance in wheelchair skills and their meaningful activities are influenced by their personal factors, including their physical and cognitive abilities, preferences, and values. Aspects of their environment, such as the type of wheelchair and controls they have, their home setup, and built structures in the community, also have an impact on their ability to participate in preferred activities. An individual may choose to participate in certain occupations

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because they have the mobility skills required of the occupation. Conversely, they may avoid certain activities due to the physical demands of the activity (Cole & Tufano, 2020).

Capstone Project Plan and Process

Project Plan

This project aimed to use evidence-based practice to provide wheelchair skills training for children who use power wheelchairs and foster a sense of community for their caregivers and siblings. This need was determined by meeting with the site's content expert and reviewing the current literature. To address this need, pediatric PWCUs were invited to attend four training sessions at SOW. Additionally, OTs and occupational therapy students were recruited and trained to teach power wheelchair skills. The following student learning plan was created in collaboration between the student, content expert, and faculty mentor to ensure that the capstone student was promoting socially responsive healthcare, encouraging critical inquiry and reflective practice, and demonstrating leadership and advocacy skills throughout the project.

Project Goal 1: Student will develop a wheelchair skills training program for children who use power wheelchairs.

Objective 1: Student will recruit three to five children to participate in a power wheelchair skills training program.

Objective 2: Student will plan a wheelchair skills training program based on principles and recommendations from Dalhousie University's Wheelchair Skills Training Program and current literature.

Objective 3: Student will implement a four-week power wheelchair skills training program.

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Project Goal 2: Student will identify best practices for wheelchair skills training by reviewing current literature.

Objective 1: Student will complete a literature review to synthesize current literature on power wheelchair skills training.

Objective 2: Student will use information gathered from literature search to select and modify interventions for PWCUs.

Project Goal 3: Student will provide training to health professions students to facilitate learning safe, effective wheelchair skills training techniques.

Objective 1: Student will use information gathered from literature search to create a training module to instruct staff and volunteers on best practices for teaching power wheelchair skills.

Objective 2: Student will oversee training of wheelchair skills to ensure training is safe and effective.

Evaluation Plan

To evaluate the effectiveness of the power wheelchair skills training program, the caregiver of the participant was asked to complete the Participation and Environment Measure Children and Youth (PEM-CY) prior to and following the four-week program. The PEM-CY is a parent-report assessment designed for caregivers of children ages 5-17 to assess the child's environments (school, home, and community) and their participation within each environment. Specifically, the PEM-CY helps practitioners determine the family's needs (services, information, time, finances, transportation, etc.), the child's frequency of participation, the child's level of involvement in meaningful activities, the caregiver's desire to change their child's participation in activities, and barriers in the child's environments (Coster et al., 2013).

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Data from the PEM-CY allowed the capstone student to assess the correlation between participation in wheelchair skills training and the participant's engagement in occupations within their environments.

Along with the PEM-CY, the WST-Q was also used to track the participant's progress during the program (see Appendix A). The power wheelchair skills version of the WST-Q lists 26 skills that are essential to functional, independent power wheelchair use. For each skill, the participant is asked to answer, "Could you do this skill today in your own setting?" "How confident are you that you could do this skill safely and consistently today in your own setting?" and "How often do you do this skill in your own setting?" (Dalhousie University, 2024, p. 2). Participants answer each question on a scale of zero to three, with three being the most capable, confident, or frequent. The questionnaire also includes a goal question to determine whether the participant is interested in receiving training for each skill (Dalhousie University, 2024). This assessment was used to assess differences in the participant's skill capacity, confidence, and performance before and after the program.

In addition to the PEM-CY and WST-Q, the caregiver was given a brief questionnaire to elaborate on the child's involvement in activities between sessions. In the pre-assessment, the caregiver was asked whether their child planned to attend therapy between training sessions, how the family planned to encourage their child to practice wheelchair skills at home, and if there were any barriers that may make it difficult for the child to practice at home. The post-assessment was used to gather information about the frequency with which the child engaged in therapy between sessions, how they practiced wheelchair skills, barriers that made it difficult for the child to practice, and whether the child sustained any injuries during the program.

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While these assessments and questionnaires were used to track participant data, the effectiveness of volunteer training was assessed with a survey. The aim of the survey was to understand the volunteers' overall satisfaction with the volunteer experience, as well as how the volunteer training benefitted them or how the training could be improved. For a full list of questions included in the volunteer survey, see Appendix B. The volunteer survey was distributed after the third day of the wheelchair skills training program.

Process

Prior to the start of the capstone project, the capstone student conducted a site interview to determine the needs of the site. A gap analysis was conducted, and the current literature was reviewed to understand the current state of wheelchair skills training programs and what is known about best practices. In addition to implementing power wheelchair skills training into the current SOW program, the capstone student served as the Participant Recruitment Manager for the semester. The responsibilities of this role included distributing flyers, reviewing interest forms completed by participants' families, and communicating with families.

During the first three weeks of the capstone project, the capstone student added updated research to the literature review. The student was oriented to the site and became familiar with the materials and resources compiled by previous SOW capstone students. The capstone student gathered or created all materials necessary for participant recruitment, including flyers, consent forms, and email templates. Online programs were researched to digitize participant check-in, form signing, assessment completion, and pre-assessment scheduling.

From week four to week nine, the student recruited participants for the program and communicated with participants and their caregivers to complete necessary documentation and schedule pre-assessment meetings. The capstone student met with the participants to ensure that

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each child was a good fit for the program and that the program would be beneficial to the participants. In addition to recruiting participants, the capstone student also recruited volunteers to work with the PWCUs in the program. A power wheelchair was borrowed from a local children's hospital so that the student could understand the functions of the chair and teach volunteers how to use the power wheelchair. Videos were also created to distribute to volunteers to supplement in-person training. The capstone student met with a rehab product specialist who is familiar with power wheelchairs to better understand how other power wheelchairs might function differently from the wheelchair borrowed from the hospital. The capstone student also observed four pediatric power wheelchair evaluations conducted by an OT and an ATP to learn how power wheelchairs are customized to each person and adapted to fit their needs.

During weeks 10 through 14, the capstone student organized the forms that had been signed by parents and followed up with families who had not completed the necessary documentation. Participants' names were added to OneTap, a check-in software used by SOW. The capstone student collaborated with another SOW capstone student whose focus was volunteer experience and recruitment of manual wheelchair skills trainers. Together, they placed participants into groups based on age, cognition, skill level, and interests. They also paired volunteers with participants based on each volunteer's educational and professional background, experience with SOW, and personality and interests, as well as each participant's skill level, hobbies and interests, and estimated level of assistance required.

Throughout the 14-week capstone project, the capstone student collaborated with the other SOW capstone student, the clinical director of SOW, and research assistants. Together, they created a play-based wheelchair skills training curriculum to increase engagement during the wheelchair skills training program based on recommendations from current literature. The

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students also collaborated with the program director, clinical director, and research assistants to make plans for the program and ensure that all necessary supplies were obtained. They organized name tags, materials needed for games, snacks, signage, and other program equipment in preparation for program days. The day before each program day, several SOW team members worked together to set up activities by assembling ramps, arranging platforms to simulate curbs, creating obstacle courses and scavenger hunts, and posting appropriate signs throughout the building.

Capstone Project Implementation

Participant Recruitment

Participants were recruited by word of mouth, emails to previous participants and families who had indicated interest in SOW, and flyers sent to local clinics and hospitals. Potential participants were children ages 6-17 who use power wheelchairs and control their chair using a joystick. Two participants enrolled in the power wheelchair skills training program; however, one did not attend due to difficulty with transportation and other barriers. One participant was identified as a good fit for the program by the clinical director of SOW. The other participant had attended SOW in previous years when he used a manual wheelchair. He transitioned to a power wheelchair between the 2024 and 2025 sessions and participated in the power wheelchair skills training program in 2025. In addition to the two participants enrolled in the power wheelchair skills training program, 35 children enrolled for manual wheelchair skills training, 30 of which attended at least one day of the program.

Parents and caregivers of interested participants were asked to complete an interest form (see Appendix C for examples of questions on the interest form) to confirm contact information and ensure that the child was appropriate for the program. Then, caregivers were sent research

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consent, assent, photo/video consent, and liability forms to complete. Each child's pediatrician was also sent a physician release form to ensure that the physician did not have any concerns regarding the child's participation in the program.

The capstone student met with each participant and their caregiver prior to the program to gather more information about the child's medical history and precautions, hobbies and interests, and ability to move their wheelchair independently (see Appendix D). This information allowed the capstone students to collaborate to determine which volunteer or volunteers to pair each child with. Children with higher care needs or cognitive impairments were paired with experienced volunteers, while children who do not have as many needs or learning difficulties were paired with newer volunteers.

The participant who attended all four SOW training sessions was an 11-year-old boy with spina bifida and osteoporosis. He had been a wheelchair user for 10 years but had used a manual wheelchair most of this time. He began using a power wheelchair about seven months prior to the beginning of the 2025 program. He used his power wheelchair for the first two days of the SOW 2025 program. However, on day three of the program, he used a manual wheelchair for skills training instead of the power wheelchair.

Volunteer Recruitment and Training

Seven volunteers were recruited to teach the participants power wheelchair skills. Six volunteers were Indiana University Occupational Therapy students identified by the clinical director and program director of SOW, who are professors at the university. These students had volunteered or worked for SOW in the past, demonstrated a willingness to learn, and were passionate about pediatric therapy. One volunteer was an Indiana University Occupational

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Therapy alumnus who had previously worked as a SOW research assistant and was a pediatric OT at the time of the program.

All volunteers received training prior to the first day of the program. Six volunteers attended in-person training, during which they explored the functions of a power wheelchair and practiced driving the power chair. In addition to in-person training, these volunteers also watched a training video that covered logistical information, instructions on training basic skills (e.g., operating the body positioning options of the wheelchair, maneuvering around obstacles), precautions to be aware of, an explanation of safely spotting a PWCU, and general safety information. One volunteer was trained on a video call conducted by the capstone student. All volunteers received the same information, regardless of training format.

Wheelchair Skills Training Days

The 2025 SOW program took place on four consecutive Saturdays for three hours each week at Indiana University Indianapolis's Health Sciences Building. Rooms and open spaces throughout the first and second floors of the building were designated for check-in, the volunteer lounge, Caregiver Corner, Sib Crib, changing stations, a sensory room, and each of the five stations (described below). The first three days of the program were focused on skills training in a simulated environment designed for optimal skills training.

During the first 15 minutes of each of these sessions, the participants engaged in a group warm-up game led by occupational therapy students. The warm-up game was designed to increase engagement with peers and encourage upper-body movement. Following the warm-up game, the participants were separated into five groups and rotated through a series of five stations with their group. Each group spent 20 minutes at each station, with 5- to 7-minute transition periods between stations. At each station, participants engaged in a game or activity

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that targeted several wheelchair skills outlined in Dalhousie University's Wheelchair Skills Program Manual (see Appendix E) (Dalhousie University, 2023). Once the participants had rotated through all five stations, they engaged in a cool-down game with the entire group before leaving. At this time, each wheelchair skills trainer met with their participant's parents and/or caregivers to discuss the skills that were covered, the participant's progress, and how the participant could practice skills at home between sessions.

The fourth session was Community Day, during which participants could show their parents and/or caregivers the skills they have been working on and parents and caregivers could practice spotting and training their children. Participants also had the opportunity to leave the building with their wheelchair skills trainer to practice skills in a more natural environment, using real curbs, grass, ramps, and obstacles. Following skills training, participants, siblings, and caregivers celebrated with carnival games, activities, and prizes.

The PWCU who attended SOW engaged in games and activities with the other children in his group. Because the other children used manual wheelchairs, a few of the activities needed to be adapted by the OT and occupational therapy students working with him. For example, while the MWCUs were practicing wheelies, the PWCU worked on ascending and descending low curbs, using the functions of his wheelchair (elevating the seat, changing the speed, etc.), and maneuvering his wheelchair with control. These alternative activities were explained to the power wheelchair skills trainers in the training video provided to them prior to the first session.

The participant's parents (his primary caregivers) attended the programming offered in Caregiver Corner for part of each session and spent the rest of their time observing the child's participation in games and activities. This allowed the caregivers to communicate with volunteers about their concerns and goals for their child. It also gave the volunteers an

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opportunity to provide the parents education regarding safely assisting with transfers and other necessary skills. The participant benefitted from the increased encouragement from his parents throughout the sessions.

Capstone Project Evaluation

Quantitative data were collected using the WST-Q (power version) and PEM-CY to assess the effectiveness of SOW's power wheelchair skills training. Additionally, a few open-ended questions were added to the surveys to gather qualitative data that can be used for program improvement. Both surveys were administered using Qualtrics, a virtual survey distribution and analysis program, before training began on the first day of the program and during training on the third day of the program. The participant's mother completed the assessments for him.

The WST-Q was scored using Qualtrics and entered into an Excel spreadsheet. The individual questions on the PEM-CY were coded by Qualtrics and exported to an Excel spreadsheet. The capstone student then calculated the PEM-CY scores based on the coded data from Qualtrics and the PEM-CY User's Guide (Coster et al., 2013).

Results

Participant Assessments

The participant showed considerable increases in performance, confidence, and frequency of power wheelchair skill use from session one to session three (see Table 1). While the participant's assessment results indicated modest improvements in most skills, more prominent improvements were noted for the skills ascending and descending steep inclines and ascending and descending low curbs.

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Table 1*Comparison of Participant's WST-Q Scores Before and After Training*

Outcome	Pre-test	Post-test
Wheelchair skills performance (%)	62.8	76.9
Wheelchair skills confidence (%)	57.7	70.5
Wheelchair skills frequency (%)	60.3	74.4

Despite improvements in the participant's wheelchair skills, the PEM-CY results indicated a decrease in participation (see Table 2), as evidenced by decreased frequency of engagement in activities, decreased level of involvement in activities, and an increased desire to change the participant's level of participation. The environmental barriers to participation did not change between pre- and post-test. The participant's mother indicated a slight decrease in overall environmental support and availability of resources between assessment dates.

Table 2*Comparison of Participant's PEM-CY Scores Before and After Training*

Outcome	Pre-test	Post-test
Participation frequency	5.4/7	4.7/7
Activity involvement	3.6/5	2.8/5
Desired change in participation (%)	8	12
Environmental barriers to participation (%)	2.2	2.2
Overall environmental support (%)	96	92
Availability of resources (%)	95	93

The caregiver's responses to the open-ended questions indicated that they appreciated the opportunities SOW provides for "socialization," "trying new things," and "building self-confidence." The caregiver rated Caregiver Corner and the programming offered as "excellent" and expressed interest in increased involvement in future opportunities offered for caregivers.

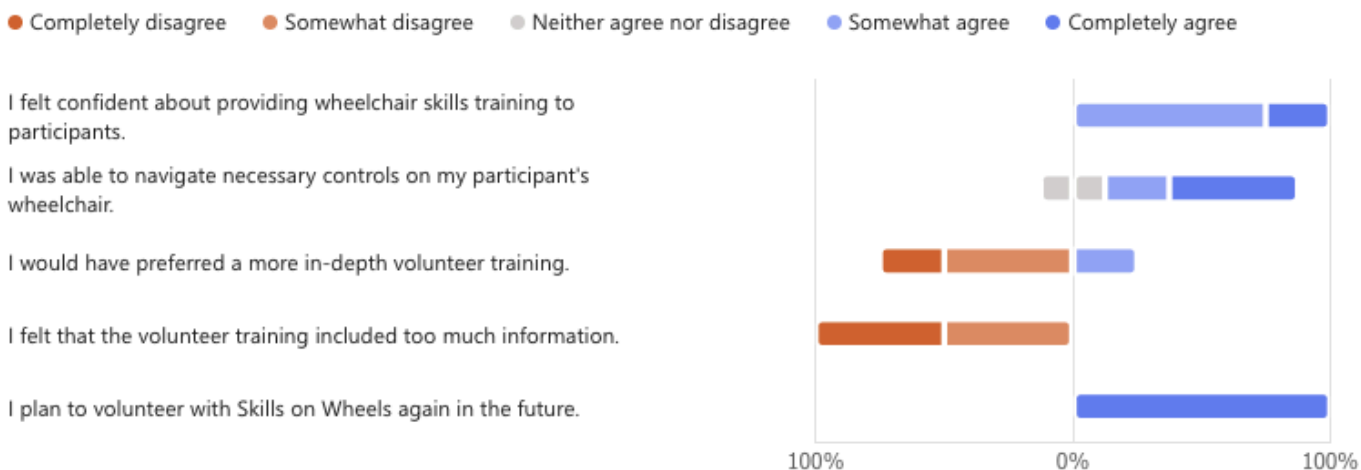
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Volunteer Surveys

Four volunteers completed the follow-up survey. The average level of satisfaction with the overall experience and training was 4.75/5, with 5 being the most satisfied. All volunteers reported that the aspect of training that was most beneficial to their learning was the opportunity to try operating a power wheelchair and using its functions. One volunteer noted that it would have been helpful to watch videos of additional skills (e.g., ascending and descending ramps and curbs) being performed in a power wheelchair or have equipment available for volunteers to practice these skills prior to teaching the skills. Figure 1 presents additional feedback collected from volunteers.

Figure 1

Volunteers' Responses to Agree/Disagree Statements



Capstone Discussion and Impact

Discussion

Overall, the student objectives were accomplished through creating and implementing a play-based power wheelchair skills training program based on current literature and Dalhousie University's WSPM. The capstone student also educated students and an OT over best practices

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for training PWCUs to perform wheelchair skills and ensured the safety of participants and trainers throughout the program. This program gave the participant an opportunity to increase his ability to perform wheelchair skills, improve his confidence, and use his wheelchair skills more frequently for everyday activities, as evidenced by his results on the WST-Q.

Despite the participant's increased skill level, his PEM-CY results indicated a decrease in participation in activities at home and in the community. This may be attributed to the short timeframe of the program, which may not have allowed sufficient time for the participant to generalize newly learned skills to his natural environments. Continued practice and support over a longer period may be necessary to see changes in real-life participation.

Another possible explanation for the decline in frequency of participation and level of involvement is the decrease in available resources and environmental support. The family noted that the lift they use to transport the participant's wheelchair broke during week two of the program, and the ramp the participant was using to get into the house was no longer strong enough to support the combined weight of power wheelchair and the participant. The participant's caregiver reported that their church has offered to build a permanent concrete ramp for the participant to be able to safely enter the house in his power wheelchair. This will likely allow him to participate more fully in everyday activities. These are environmental barriers that cannot be overcome by improving power wheelchair skills and may be affecting the child's ability to fully participate.

The feedback provided by the volunteers indicated that the training and volunteer opportunity was a positive experience overall. The results suggested that an appropriate amount and level of training was provided and that the hybrid in-person and video structure was

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effective. Future volunteer training should be consistent with the format and content included in the training provided this year, with additional opportunities to practice advanced skills.

Limitations

One limitation to this study was the small sample size. Despite recruitment efforts, only two PWCUs enrolled in the program, and only one attended. Future studies should include larger sample sizes to increase the validity and generalizability of results. Additionally, the study was conducted during a short timeframe and no follow-up surveys were administered. While the participant demonstrated improvements in wheelchair skills, it is unknown whether these improvements were maintained over time. Other limitations to this study include lack of a control group, single-site study in a controlled environment, and use of subjective measures.

The inconsistency of trainers may have limited the participant's engagement in the program. Due to volunteer availability, the participant worked with several different volunteers over the course of the program. While he was easy-going and able to adapt to working with each volunteer, it was difficult for the volunteers to build rapport with him since they each only worked with him for one or two weeks.

The small sample size also limited the results of the research related to volunteer experience. Seven volunteers were recruited and trained in anticipation of having three to five participants in the program. Because only one participant attended each session, only two volunteers were needed each week. The volunteers that did not work with the PWCU were able to work with MWCUs instead. However, they might have been more confident in training power wheelchair skills if they had been able to work with PWCUs during multiple sessions.

Impact

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This doctoral capstone project played a role in addressing the need for power wheelchair skills training. The child who participated in SOW's power wheelchair skills training program might have not otherwise been offered training on using his new power wheelchair. His improved WST-Q scores indicate that the program increased his ability to use his power wheelchair. Furthermore, the research, collaboration, and planning that were dedicated to this project may allow for SOW to reach more pediatric PWCUs in future years. The addition of power wheelchair skills training to SOW also gave the participant's caregivers an opportunity to learn how to teach their child to use his wheelchair at home and in the community so that he can better navigate obstacles he faces within the natural and built environment.

In addition to the participant, his family, and future participants, this project also impacted volunteers. All of the volunteers who worked with this participant were either occupational therapists or new OTs. This experience gave volunteers the training they need to teach power wheelchair skills and allowed volunteers to practice teaching wheelchair skills to a PWCU. They may be able to use these skills with future patients and clients.

Lastly, the addition of power wheelchair skills training helps SOW achieve their goal of expanding their wheelchair skills training program to reach more wheelchair users. Manual wheelchair users only make up a portion of the pediatric wheelchair user population, and offering power wheelchair skill training will allow SOW to impact more children who use wheelchairs. Some individuals who use manual wheelchairs early in their life need to transition to power wheelchairs as their conditions progress and their muscles become weaker (Buning et al., 2001). Now, SOW will be able to support children as they transition from manual to power wheelchairs, as they can continue improving their skills with SOW.

Sustainability Plan

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In order for the impact of this project to continue in future years, the capstone student created and organized the following materials for future SOW capstone students:

- This capstone paper with a review of the literature
- List of tasks completed by the capstone student in preparation for the program
- Volunteer training slideshow and video
- Qualtrics versions of the WST-Q and PEM-CY
- Excel spreadsheets with formulas to score the assessments
- Feedback from MWCUs and PWCUs who participated in the 2025 program
- Digital folders containing consent forms, flyers, email templates, etc.
- List of supplies ordered for the 2025 program
- Descriptions of the games and activities planned for the 2025 program
- Contact information for previous capstone students, research assistants, a power wheelchair rehabilitation product specialist, an OT who is knowledgeable on power wheelchairs, and local clinics
- Excel templates to organize participant information
- List of potential participants for future years
- Tutorials over online programs used for participant recruitment

The capstone student also met with the 2026 SOW capstone students to discuss the responsibilities of the capstone students, strategies that have worked well for the capstone student, as well as methods that should be revised, and how to locate materials needed for the program.

Future capstone projects related to power wheelchair skills training should further assess the effect of power wheelchair skills training on participation. This study indicated a decrease in

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participation; however, this may be due to the small sample size and confounding variables.

Future studies with more participants may reveal whether power wheelchair skills training is correlated with a change in participation. It would also be beneficial to research the long-term effect of power wheelchair skills training on PWCUs' wheelchair skills performance, confidence, and frequency of use of skills.

Conclusion

Despite research highlighting the benefits of wheelchair skills training for PWCUs and recommendations to provide power wheelchair skills training, most PWCUs do not receive skills training. This gap exists due to a lack of knowledge regarding how and when to provide wheelchair skills training, as well as how to make training safe, engaging, and effective (Kirby et al., 2020; Kirby et al., 2021; Mathis & Gowran, 2021). To address this gap, the student researched best practices, trained volunteers to teach power wheelchair skills, and provided power wheelchair skills training to a pediatric PWCU. The literature revealed that wheelchair skills training for children should be play-based, values-based, and offered in an environment that allows children to safely take risks (Kenyon et al., 2018; Kenyon et al., 2020; Rosenberg et al., 2019). The play-based structure of SOW makes wheelchair skills training fun for participants, and the availability of volunteers who are taught how to effectively train and spot wheelchair skills allows participants to safely try new skills. The purpose of this capstone project was to increase pediatric PWCUs' ability to use their wheelchairs confidently, safely, and independently. While the participant's level of participation did not increase, his skill level, confidence, and frequency of skill use increased greatly. With future research and program development, wheelchair skills training can become more accessible to PWCUs, and programs can be adapted to improve participation for PWCUs.

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Appendix A

WST-Q Powered Wheelchairs

Wheelchair Skills Test Questionnaire (WST-Q) Version 5.4 Form**Powered Wheelchairs**

Name of wheelchair user: _____

Person completing questionnaire (if not user): _____

Tester: _____ Date: _____

#	Individual Skill	Performance (0-3) *	Confidence (0-3)*	Frequency (0-3)*	Training Goal (Y/N)
1	Positions controller				
2	Turns power on and off				
3	Operates battery charger				
4	Disengages and engages motors				
5	Changes program modes				
6	Changes speed setting				
7	Operates body positioning options				
8	Rolls forward				
9	Rolls backward				
10	Turns in place				
11	Turns while moving forward				
12	Turns while moving backward				
13	Maneuvers sideways				
14	Reaches objects				
15	Shifts weight				
16	Performs level transfers				
17	Performs ground transfers				
18	Gets through hinged door				
19	Ascends slight incline				
20	Descends slight incline				
21	Ascends steep incline				
22	Descends steep incline				
23	Rolls on soft surface				
24	Gets over obstacle				
25	Ascends low curb				
26	Descends low curb				
Total scores:**		%	%	%	
* See criteria on next page.					
** See formula on next page.					

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Performance question: "Could you do this skill today in your own setting?"		
Answer	Score	What this means
Yes, very well	3	I could do the skill safely and very well.
Yes, but not well	2	I could do the skill safely, but not well.
Yes, with help	1	I could do most, but not all, of the skill or I could direct a stranger to help me do it.
No	0	I have never done the skill or could not do it right now.
No part ¹	NP	The wheelchair does not have the parts to allow this skill.
Testing error	TE	When answers have not been recorded (e.g., inadvertently or because the test subject did not understand the question).

Confidence question: "How confident are you that you could you do this skill safely and consistently today in your own setting?"		
Answer	Score	What this means
Very confident	3	I am very confident.
Somewhat confident	2	I am somewhat confident.
Somewhat unconfident	1	I am somewhat unconfident.
Very unconfident	0	I am very unconfident.
No part ¹	NP	As for performance.
Testing error	TE	As for performance.

Frequency question: "How often do you do this skill in your own setting?"		
Answer	Score	What this means
Always	3	Always when I need or want to.
Sometimes	2	Sometimes when I need or want to.
Rarely	1	Rarely when I need or want to.
Never	0	Never or less often than once a year.
No part ¹	NP	As for performance.
Testing error	TE	As for performance.

Goal question: "Is this a skill for which you would be interested in receiving training?"		
Answer	Score	What this means
Yes	Y	I am interested in receiving training for this skill.
No	N	I am not interested in receiving training for this skill.

¹ This option is only presented for skills where such a score is a possibility.

Formulae for calculating WST-Q total percentage scores:	
•	Total Performance Score = sum of individual skill scores / ((number of possible skills – number of NP scores – number of TE scores) x 3) X 100%
•	Total Confidence Score = sum of individual skill scores / ((number of possible skills – number of NP scores – number of TE scores) x 3) X 100%
•	Total Frequency Score = sum of individual skill scores / ((number of possible skills – number of NP scores – number of TE scores) x 3) X 100%

General comments:

Details about the WST can be found in the WSP Manual at <http://www.wheelchairskillsprogram.ca/eng/manual.php/>.

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POWER WHEELCHAIR SKILLS TRAINING

Appendix B

Volunteer Satisfaction Survey

1. Which training format did you attend?

In-Person

Zoom

Video

2. How satisfied were you overall with this volunteer experience and training?



3. Please indicate how strongly you agree or disagree with each statement.

	Completely disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree
I felt confident about providing wheelchair skills training to participants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to navigate necessary controls on my participant's wheelchair.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have preferred a more in-depth volunteer training.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt that the volunteer training included too much information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I plan to volunteer with Skills on Wheels again in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. What aspect of volunteer training was most beneficial for your learning?

5. What should be done differently in the future to improve volunteer training?

6. Do you have any other feedback or comments related to volunteer training? (optional)

POWER WHEELCHAIR SKILLS TRAINING

Appendix C**Participant Interest Survey Questions**

Your name:

Phone Number:

Your email:

Child's name:

Child's address:

Child's primary diagnosis:

Child's secondary diagnosis:

How long has the child been a wheelchair user?

Child's date of birth:

Has your child participated in Skills on Wheels, The Wheelchair Skills Training Program, or any other wheelchair skills training? (Options: Yes, No)

What do you hope your child gets out of this program?

What issues does your child currently have navigating the community in their wheelchair?

Appendix D

Participant Pre-Assessment Form

Skills on Wheels: Participant Pre-Assessment	
<p>Name: _____</p> <p>DOB: _____</p> <p>Date of Eval: _____</p> <p>Primary Contact: _____</p> <p>Phone Number: _____ Text / Call</p>	Hobbies & Interests:
Past Medical History:	
Precautions:	
Allergies and Severity:	
Recent Surgeries:	
Type of Wheelchair: (if power: what type of controls, does caregiver have remote stop/attendant control)	
Wheelchair User Since:	
Sensory Sensitivities:	
Communication Preferences:	
Do you have any concerns about any functions on your wheelchair that may need looked at prior to the program?	
Shirt size:	
Siblings at Program:	
Wheelchair Skills	
Reach outside BOS:	
Follow One-Step Directions:	
Propel self forward/operate drive controls of power chair:	

POWER WHEELCHAIR SKILLS TRAINING

Appendix E

Play-Based Wheelchair Skills Training Stations

Station Number	Games/Activities	Skills Targeted
1	<ul style="list-style-type: none"> • Red Light, Green Light • Asteroid Destroyer • Sharks and Minnows 	<ul style="list-style-type: none"> • Rolls forward • Rolls backward • Turns in place • Turns while moving forward • Turns while moving backward
2	<ul style="list-style-type: none"> • Pirate Scavenger Hunt 	<ul style="list-style-type: none"> • Maneuvers sideways • Gets through hinged door • Performs level transfers • Performs ground transfers
3	<ul style="list-style-type: none"> • Obstacle Course 	<ul style="list-style-type: none"> • Reaches objects • Shifts weight • Rolls on soft surface • Gets over obstacle
4	<ul style="list-style-type: none"> • Bean Bag Toss • Fishin' off the Dock 	<ul style="list-style-type: none"> • Ascends slight incline • Descends slight incline • Ascends steep incline • Descends steep incline • Reaches objects
5	<ul style="list-style-type: none"> • Curb Practice and Operating Power Chair 	<ul style="list-style-type: none"> • Positions controller • Turns power on and off • Operates battery charger • Disengages and engages motors • Changes program modes • Changes speed setting • Operates other controller features • Operates body positioning options • Ascends low curb • Descends low curb