**Occupational Therapy and Wheelchair Service Provision**

**Hassan Izzeddin Sarsak**

Occupational Therapy Program, Batterjee Medical College, Jeddah, Saudi Arabiahassan.sarsak@bmc.edu.sa, sarsakhassan@gmail.com

**Introduction**

The wheelchair is viewed as one of the most important assistive technology devices used in rehabilitation for individuals who cannot ambulate or have difficulty with ambulation and is one of the most influential factors that affect activity in persons with a mobility impairment. Wheelchairs, both manual and power, are enablers of community participation and are used to enhance function, to improve independence, and to enable a person to successfully live at home and in the community(Sarsak, 2018; Wee & Lysaght, 2009). It is estimated that more than 70 million people require wheelchairs worldwide and only 5 to 15% have access to one. In addition, there is a shortage of health and rehabilitation personnel with the knowledge and skills to provide a wheelchair that meets the user's specific needs (WHO, 2017). Occupational therapists help wheelchair users feel empowered, become more productive, enjoy more leisure, and enhance their functional performance in activities of daily living (ADLs), such as self-care(Sarsak, 2018). To aid in provision of the best quality wheelchairs and service delivery, the wheelchair evaluation should be a continuous thorough process requiring re-assessment of wheelchair fit as users age and their functional conditions change (Sarsak, 2019).

**Role of occupational therapy in wheelchair service provision**

Occupational therapists are experts in helping clients achieve maximum independence in their daily lives and help assess clients’ goals, body structure, activities, environment, medical conditions and other factors to choose the ideal wheelchair not only for current needs but for future ones as well. Occupational therapists are healthcare professionals who apply a client/environment/occupation perspective that considers the interface between these three elements when assessing and recommending complex equipment. To make the best possible fit between the wheelchair and the clients’ needs and goals, an expert occupational therapist takes various factors into consideration, such as (1) the client’s profile, (2) the physical and socio-cultural environments, and (3) the daily activities and social roles that the client performs, and (4) wheelchair characteristics (Karmarkar, 2009; Kenny & Gowran, 2014, Oyster, 2011). Occupational therapists provide in-depth knowledge of occupational performance and participation and bring a distinct perspective on the impact of habits, roles, and routines on the life of the individual to determine what equipment will be most beneficial in all the person’s environments, using a client-centred, participatory approach to intervention to improve functioning and the ability to perform ADLs that are important to the individual (RESNA, 2011). The occupational therapy profession sheds light on that a properly fitted and correctly prescribed wheelchair benefits both client and caregiver and clients use their wheelchairs more often if they receive them from an expert clinician who uses a multifactorial assessment-intervention process(Brienza, et al., 2010). According to the World Health Organization (WHO), the provision of wheelchairs includes eight critical steps for appropriate wheelchair services. These steps are: (1) referral, (2) assessment, (3) prescription, (4) funding and ordering, (5) product preparation, (6) fitting and adjusting, (7) user training, and (8) follow-up and maintenance/repairs. The wheelchair provision 8-Steps have a range of positive outcomes including increased satisfaction with the mobility device and better quality of life([Toro](https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-016-1268-y#auth-1), et al., 2016). Occupational therapists apply the WHO guidelines for wheelchair evaluation process and provide a comprehensive wheelchair services while integrating valid and reliable holistic documentation methods(Pearce, et al., 2016, Sarsak, 2020). Occupational therapy is a vast and varied profession and one of its many specialisms is wheelchair services. Many occupational therapists may consider wheelchair service provision as a speciality area of practice and develop their skills as wheelchair professionals along the continuum from generalist to specialist and assistive technology professional(Schein, et al., 2010). Wheelchair service provided by occupational therapists include specific positioning equipment, mobility devices, durable medical equipment, and complex rehabilitation technology, used to optimize clients’ environmental access and their ability to safely perform daily occupations. Seating systems or equipment are designed to meet individuals’ needs for postural support and alignment, skin integrity, function, and safety. Research shows the positive impact of equipment, such as wheelchairs, on the quality of life for individuals with mobility issues (RESNA, 2011).

Occupational therapists provide wheelchair services across many practice settings, including home health, educational and rehabilitation facilities, private practice, and community-based settings. Occupational therapists ideally work with a multidisciplinary team that includes rehabilitation technology suppliers, technicians, and manufacturers, as well as other health care providers and representatives from funding sources to ensure the provision of proper equipment(Greer, et al., 2012).

The role of occupational therapists providing wheelchair services includes but not limited to:

* Conducting individualized, holistic wheelchair evaluations to determine clients’ skills and priorities.
* Identifying and addressing clients’ needs, interests, goals, and barriers to participation in meaningful activities, roles, and occupations.
* Assessing and recommending wheelchairs and environmental modifications to increase accessibility.
* Providing justification for funding sources of medically necessary equipment and wheelchair technology by completing required documentation.
* Fitting and customizing wheelchair to meet clients’ present and potential future needs and goals.
* Training clients, caregivers, and family members on safe and efficient wheelchair use (AOTA, 2017).

**Importance of occupational therapy wheelchair services to community**

Occupational therapists recognize the value of engagement in meaningful occupations, including daily activities, which are facilitated by appropriately selected wheeled mobility and seating devices to achieve health, well-being, and participation in life. Individuals throughout the life span who have diverse clinical conditions, functional abilities, and mobility goals can benefit from occupational therapists providing wheelchair services. There is a need for more trained wheelchair service provision professionals worldwide. People in developing countries often depend on the donation of wheelchairs, which are frequently of poor quality and neither suitable nor customized either for the users or their environment. Health and rehabilitation professionals are not always trained adequately to ensure people with disabilities get a quality and custom-fitted wheelchair. Furthermore, there is a great variability and inconsistency in what and how wheelchair-related content is taught and evaluated(Sarsak, 2019). The World Federation of Occupational Therapists (WFOT) position paper on the “Occupational Therapy and Wheeled Mobility and Seating Devices” supports the development of wheelchair service provision through establishing collaborative work with global partners and encouraging occupational therapists to do so. In response to the need of competent wheelchair professionals and to enhance the quality of service delivery to wheelchair users, in 2015 until 2017 standardized training packages were developed by a team of experts around the world by the World Health Organization (WHO) in partnership with the United States Agency for International Development (USAID)(Fung, et al., 2017; Sarsak, 2018). In addition, the International Society of Wheelchair Professionals (ISWP) was launched in February 2015 with a mission to serve as a global resource for wheelchair service standards and provision through advocacy, education, evidence-based practice, innovation and a platform for information exchange. The ISWP helps to professionalize wheelchair services around the world, benefitting both wheelchair users and those who provide them services by promoting the WHO Guidelines on providing wheelchairs, promoting training and research activities, integrating wheelchair service provision education into academic and clinical rehabilitation programs worldwide, improving wheelchair design and manufacturing, and coordinating services (Goldberg, et al., 2018).

**Conclusion**

Occupational therapists are highly skilled wheelchair professionals and provide a variety of services to wheelchair users and their families through their use of intervention models that integrate the client, occupation, and environment. Occupational therapy education, application of current best evidence to practice, and clinical competency ensure that wheelchair users can enjoy accessing their community and environment independently, safely, adequately, and freely. The WFOT supports occupational therapists worldwide and always strives to help clients achieve optimal outcomes that include improved functional performance, enhanced community participation, and maintenance of health and wellness. The inclusion of an occupational therapist in the multidisciplinary medical rehabilitation team has a positive significant impact and improves the integrated planning and quality services for wheelchair users.

**References**

American Occupational Therapy Association, 2017. *The role of occupational therapy in providing seating and wheeled mobility services* [fact sheet]. https://www.aota.org/About-Occupational-Therapy/Professionals/RDP/Providing-Seating-Wheeled-Mobility-Services.aspx

Brienza, D., Kelsey, S., Karg, P., Allegretti, A., Olson, M., Schmeler, M. et al., 2010. A randomized clinical trial on preventing pressure ulcers with wheelchair seat cushions. *Journal of the American Geriatrics Society, 58*, 2308–2314. doi: 10.1111/j.1532-5415.2010.03168.x

Fung, K. H., Rushton, P. W., Gartz, R., Goldberg, M., Toro, M. L., Seymour, N., & Pearlman, J., 2017. Wheelchair service provision education in academia. *African Journal of Disability (Online)*, *6*, 1-8.

Greer, N., Brasure, M., & Wilt, T. J., 2012. Wheeled mobility (wheelchair) service delivery: scope of the evidence. *Annals of Internal Medicine*, *156*(2), 141-146.

Goldberg, M., Pearlman, J., Rushton, P., & Cooper, R., 2018. The International Society of Wheelchair Professionals (ISWP): A resource aiming to improve wheelchair services worldwide.

Karmarkar, A. M., Collins, D. M., Kelleher, A., & Cooper, R. A., 2009. Satisfaction related to wheelchair use in older adults in both nursing homes and community dwelling. *Disability and Rehabilitation: Assistive Technology, 4*, 337–343. doi: 10.1080/17483100903038543

Kenny, S., & Gowran, R. J., 2014. Outcome measures for wheelchair and seating provision: a critical appraisal. *British Journal of Occupational Therapy*, *77*(2), 67-77.

Oyster, M. L., Karmarkar, A. M., Patrick, M., Read, M. S., Nicolini, L., & Boninger, M. L., 2011. Investigation of factors associated with manual wheelchair mobility in persons with spinal cord injury. *Archives of Physical Medicine and Rehabilitation,* 92, 484-490. doi:10.1016/j.apmr.2010.09.025

Pearce, P. F., Ferguson, L. A., George, G. S., & Langford, C. A., 2016. The essential SOAP note in an EHR age. *The Nurse Practitioner,* [*41(2)*, 29–36](https://journals.lww.com/tnpj/toc/2016/02000). doi: 10.1097/01.NPR.0000476377.35114.d7

Rehabilitation Engineering & Assistive Technology Society of North America, 2011. *RESNA wheelchair service provision guide.* Retrieved from http://www.resna.org/sites/default/files/legacy/resources/position-papers/RESNAWheelchairServiceProvisionGuide.pdf

Sarsak, H. I., 2018. Role of wheelchairs and wheelchairs assessments: A review. *Advances in Orthopedics and Sports Medicine: AOASM-101. Vol. 1*

Sarsak, H. I., 2018. Developing wheelchair training program for rehabilitation and occupational therapy students. *MOJ Yoga & Physical Therapy, 3(4):*79‒83. doi: 10.15406/mojypt.2018.03.00049

Sarsak, H. I., 2019. *Functional assessment of wheeled mobility and seating interventions: Relationship of self-report and performance-based assessments*. American Journal of Biomedical Science and Research. Arcadia, CA: BiomedGrid.

Sarsak, H. I., 2019. Occupational Therapy: From A to Z. *Journal of Community Medicine and Public Health Care, 6(4):*1-6. doi: 10.24966/CMPH-1978/100059

Sarsak, H. I., 2020. Wheelchair Evaluation Process for a Patient with Spinocerebellar Disorder: A Case Report. *Annals of Clinical Case Reports, 5:* 1-5.

Sarsak, H. I., 2022. Occupational Therapy and Wheeled Mobility and Seating Devices [Position statement]. https://wfot.org/resources/occupational-therapy-and-wheeled-mobility-and-seating-devices

Schein, R. M., Schmeler, M. R., Holm, M. B., Saptono, A., & Brienza, D. M., 2010. Telerehabilitation wheeled mobility and seating assessments compared with in person. *Archives of Physical Medicine and Rehabilitation*, *91*(6), 874-878.

[Toro](https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-016-1268-y#auth-1), M. L., Eke, C., & Pearlman, J., 2016. The impact of the World Health Organization 8-steps in wheelchair service provision in wheelchair users in a less resourced setting: A cohort study in Indonesia. *BMC Health Services Research,16(26),* 1-12. doi 10.1186/s12913-016-1268-y

Wee, J., & Lysaght, R., 2009. Factors affecting measures of activities and participation in persons with mobility impairment. *Disability and Rehabilitation, 31*, 1633-1642. doi: 10.1080/09638280902736346

World Health Organization, 2017. Disability and Rehabilitation. Retrieved September 20, 2017 from http://www.who.int/disabilities/technology/wheelchairpackage/en/