
A12: Powered Mobility Innovations: Current Evidence and Emerging Technologies

Magdalena Love, OTR, ATP

Learning objectives:

1. Differentiate two benefits and potential drawbacks of five different power seat functions.
2. Identify two functional benefits of integrating anterior tilt and/or standing into a client's wheelchair base.
3. Verbalise three ways that integrating smart technology connected to the wheelchair can positively impact participation and activity outcomes for the wheelchair user.

Session description:

Power seating is often prescribed to manage the risk of pressure injuries as well as improve a client's independence. Through a clinical applications approach, this course will review various client examples and applications of seating/mobility technology. Included in each example will be a review of clinical needs and the rationale for various seating and mobility solutions as they relate to funding and best practice. Utilizing parameters for best practice and the ICF model, participants will also learn how to better determine the most appropriate power wheelchair and seating system for client success and function while mitigating complications. This presentation will also discuss emerging technology and how clinically connecting the wheelchair with emerging technology and applications provides new opportunities to facilitate client health, function, and compliance. Lastly, a call to arms will be made to clinician researchers – with an example of how a partnership with a technology company can open new doors on what research outcomes can be explored.

Content references:

1. Adriaansen, J., van Asbeck, F., Lindeman, E. v., de Groot, S., & Post, M. (2013). Secondary health conditions in persons with spinal cord injury for at least 10 years: design of a comprehensive long-term cross-sectional study. *Perspectives in Rehabilitation:*

- Developing Robust Research Designs*, 1104-1109.
2. Aissaoui R, Lacoste M, Dansereau J. (2001) Analysis of sliding and pressure distribution during a repositioning of persons in a simulator chair. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 9(2):215-224.
3. Arva, J., Paleg, G., Lange, M., Liberman, J., Schmeler, M., Dicianno, B., et al. (2009). RESNA Position on the Application of Wheelchair Standing Devices. *Assistive Technology*, 161-168.
4. Deitrick, J., Whedon, G., & Shorr, E. (1948). Effects of immobilization upon various metabolic and physiologic functions of normal men. *American Journal of Medicine*, 4(3).
5. Dicianno, B.E., Arva, J.A., Lieberman, J., Schmeler, M., Souza, A., Phillips, K., Lange, M., Cooper, R., Davis, K., & Betz, K. (2009) RESNA Position on the Application of Tilt, Recline, and Elevating Legrests for Wheelchairs. *Assistive Technology*, 21: 13-22.
6. Dicianno, B.E.; Liberman, J.; Schmeler, M.R.; Schuler, A.E.; Cooper, R.; Lagne, M.; et al. (2015). RESNA Position on the Application of Tilt, Recline, and Elevating Legrests for Wheelchairs Literature Update.
7. Dicianno, B; Morgan, A; Lieberman, J; Rosen L. (2013) RESNA Position on the Application of Wheelchair Standing Devices: 2013 Current State of the Literature.
8. Hayhurst, C. (2016) Physical Therapy and the Internet of Things. *PT in Motion*. Sept 2016, 14-20.
9. Henderson JL, Price SH, Brandstater ME, & Mandac BR. (1994) Efficacy of three measures to relieve pressure in seated persons with spinal cord injury. *Archives of Physical Medicine and Rehabilitation*. 75, 535-539.
10. Hobson D.A.. (1992) Comparative effects of posture on pressure and shear at the body-seat interface. *Journal of Rehabilitation Research and Development*, 29(4), 21-31.
11. Jan, Y-K., Crane, B.A., Liao, F, Woods, J.A., & Ennis, W.J. (2013) Comparison of Muscle and Skin Perfusion Over the Ischial Tuberosities in Response to Wheelchair Tilt-in-Space and

A13: Using Experience-Based Design Principles to Enhance Service User Feedback

Joanne Blaiklock, NZROT

Learning objectives:

1. Identify a way to capture client experiences of a service
2. Describe how client experiences can inform and guide service development activities

Session description:

Introduction / Rationale: Services often seek feedback from clients using satisfaction surveys; however satisfaction ratings do not provide rich data to inform practice innovations. Seeking data which promotes understanding of how clients experience the service received and the provision of equipment solutions is beneficial to enhancing practitioner insights and contribute to service development.

Methods: The Mobility Solutions Service User Feedback (SUF) tool was redesigned using Experience-Based Design (EBD) principles to gain specific information about clients' lived experiences at different stages of service provision, rather than simply gaining a satisfaction rating alone. Discharged clients were routinely sent the SUF with a self-addressed envelope over a seven month period; the approximate return rate being a third of all discharges in that period. Data was thematically analyzed and a report written to inform staff, management and the Ministry of Health, and used to implement change where required.

Results: Rich data was gained through implementation of the EBD redesigned SUF. Client experiences were most frequently described as 'happy and content' through all stages of service provision. Feelings of 'frustration', 'confusion', 'worry' and 'upset' were more apparent during 'waiting for assessment', 'equipment trial' and 'decision making' stages. The top three reported differences from equipment solutions included 'improved independence', 'improved comfort' and 'improved postural support'. Therapist qualities valued by clients related to staff being 'knowledgeable',

'professional' and 'helpful'. Such data would not have been revealed in the standard satisfaction rating survey.

Conclusion/ Practice Implications: Seeking client feedback should extend beyond capturing satisfaction ratings to gaining in-depth data that supports better understanding of what it is like for clients during various stages of service provision. This in turn will support quality initiatives to better serve clients' journey through the service.

Content references:

1. Coulter, Angela et al, 2009. The Point of Care. Measures of patient's experience in hospital: purpose, methods and uses. The Kings Fund. Retrieved from www.kingsfund.org.uk
2. Bate, P and Glenn, R. 2006. Experience-based design: from redesigning the system around the patient to co-designing services with the patient. *Quality Safety Health Care*;15:307-310
3. Bate, P and Glenn, R. 2007. Bringing User Experience to Healthcare Improvement: The Concepts, methods and practices of experience-based design, Radcliffe Publishing, Oxford
4. Doyle, Cathal et al. 2013. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open*

A14: Sociology of wheelchairs and seating: How the non-human world can alter dominant social forces in healthcare provision

Mary Silcock, OT
Maxine Campbell, PhD
Clare Hocking, PhD
Craig Hight, PhD

Learning objectives:

1. To stimulate thinking about wheelchairs and seating as being part of networks of power
2. To encourage reflection on micro-level practice and the opportunities this presents
3. To draw attention to how practice is part of wider societal structures

Session description:

Wheelchair and seating services have a highly specialised niche of service provision in Aotearoa New Zealand that cuts across all funding streams, socioeconomic classes and cultural groups. This presentation reports a case study, which contributed to a larger project which involved observations of the day to day activities of occupational therapists working for a wheelchair service. In this everyday work, wheelchairs, seating products, equipment and other non-human elements were seen to exert a significant influence on the therapists' practice, suggesting they were imbued with a power of their own. The therapists spent a lot of their time accommodating the non-human world by tinkering with products and in practical tasks such as filing, writing detailed records and storing essential objects, photos and spare parts. This directly involved the non-human world in ways that were not immediately connected to the usual directives of healthcare provision - enterprise, the law and political governance. Wheelchairs and seating products do not respond to financial, legal or political power. Instead, the combined capacity of human and non-human agency creates a different set of power relations that enabled the wheelchair therapists to bypass other forces that might shape their practice. I present a critical analysis of when and how this bypassing took place. This micro-level analysis of practice allows us to

understand opportunities available to wheelchair services. These opportunities are largely unspoken but have the ability to alter the trajectory of the dominant forces currently shaping healthcare in ways that directly impact on real outcomes for people who use wheelchairs.