

WHEELCHAIR SKILLS PROGRAM: MOBILITY TRAINING IN LOW AND MIDDLE INCOME COUNTRIES

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The Wheelchair Skills Program (WSP)¹ includes the Wheelchair Skills Test (WST),² the questionnaire version of the WST (WST-Q)³ and the Wheelchair Skills Training Program (WSTP).⁴⁻⁷ It uses methods based on the rehabilitation, wheelchair and motor-skills literature. It is an integrated system that includes elements that can be used for testing and training clinicians, wheelchair users and/or their caregivers. The WST Version 3.2 is a test of 57 wheelchair skills. The skills are divided into three levels of difficulty: Indoor, Community and Advanced. The program includes less complicated skills such as applying and releasing the brakes and more complex skills, such as performing a wheelie while descending a high curb. The WSTP is a method of teaching these skills.

Now available in both English and French, the WSP can be downloaded for free from our website.¹ Various therapists and groups throughout North America report finding the WSP useful in their own environments. This finding is not entirely surprising given that the skills of the WSP are based upon common barriers within our North American environment. Although the Wheelchair Research Team has been in contact with users of the program in countries such as Sweden, Japan and Australia, the applicability and feasibility of using the WSP in countries with fewer resources is now being more closely investigated. The WSP has been described by Nenad Kostanjsek, of the World Health Organization as a "low tech, high impact" program. This low-tech approach and the low cost of delivering the program facilitate exploring potential use of the program in low and middle -income countries (LMIC). To assess the potential use of the WSP, members and associates of the Wheelchair Research Team have traveled to various countries collecting information about the mobility devices used, the environmental, financial and social barriers and the training currently available.

In 2005, a member of the Wheelchair Research Team traveled with colleagues to India. The trip included visits to a wheelchair manufacturer and clinical centres. Travels through Kanpur, New Dehli and Jaipur provided the opportunity to observe and experience the obstacles facing individuals with mobility impairments.⁸ The use of manual wheelchairs was observed as well as other mobility devices including ground level scooters and two-seated tricycles. The obstacles to mobility that were identified were more numerous and often of accentuated difficulty. Training demonstrations and practice opportunities were provided throughout the trip with wheelchair users. Although, in general, the barriers were of greater magnitude and different methods of mobility were used, there appears to be a need for exploring further the use of the WSP as well as assessing modifications that would need to be made to the program to increase the applicability of the WSP for users of different mobility devices.

In 2006, two members of the Wheelchair Research Team traveled with colleagues to Bosnia and Herzegovina with the opportunity to meet government, non-governmental organizations and rehabilitation professionals in Sarajevo. An experiential workshop was provided with the healthcare professionals and meetings were held with local wheelchair users. The barriers within Sarajevo were found to be similar to North American obstacles, but, as in India, they were more challenging and more numerous. A range of manual wheelchairs were observed including depot-style and titanium frame chairs similar to and the same as brands available in Canada. Due to the nature of the outdoor terrain, wheelchair users were often observed receiving some level of assistance. Attendees of the workshop and NGOs reported that they thought the skills training program would be applicable to wheelchair users and caregivers in their respective facilities and organizations.

Future plans include bringing our Bosnian colleagues to Halifax this fall to further develop meaningful partnerships to ensure that any implementation of the WSP is done in a manner that best meets the

environmental demands, equipment delivery model and cultural needs of wheelchair users in Sarajevo. As well, we hope to explore other areas of Bosnia and Herzegovina that are providing rehabilitation services in 2007.

Alternative methods include gathering information on potential countries and exploring effective methods of knowledge transfer to potential trainers. Currently, information on access to mobility systems, physical environments and current wheelchair skills training methods is expected back soon from students of medicine and occupational therapy who have traveled on placements to Malta, the United Arab Emirates and India. As well, a colleague will be giving a presentation on the WSP to rehabilitation specialists in Jordan in the fall of 2006. The team is continuing to explore methods of facilitating the teaching of wheelchair skills through less traditional methods. More interactive methods of using the internet are being explored and the telehealth network has been used to conduct training sessions for trainers within Canada. Outside of Canada, it is hoped that potential trainers in larger centres would eventually have access to online learning and that they, in turn, could train prospective trainers in more rural setting to provide training to a broad range of wheelchair users.

In summary, although adaptations are required to use the WSP in LMIC, the low-tech and low-cost features of the WSP and the initial reception received abroad, support further investigation and partnerships to facilitate wheelchair skills training in LMIC.

References

1. Wheelchair Skills Program Manual (Version 3.2): this manual can be downloaded from www.wheelchairskillsprogram.ca.
2. Kirby RL, Dupuis DJ, MacPhee AH, Coolen AL, Smith C, Best KL, Newton AM, Mountain AD, MacLeod DA, Bonaparte JP. The Wheelchair Skills Test (version 2.4): measurement properties. *Arch Phys Med Rehabil* 2004;85:794-804.
3. Mountain AD, Kirby RL, Smith C. The Wheelchair Skills Test: validity of an algorithm-based questionnaire version. *Arch Phys Med Rehabil* 2004;85:416-23.
4. Kirby RL, Miffen NJ, Thibault DL, Smith C, Best KL, Thompson KJ, MacLeod DA. The manual wheelchair-handling skills of caregivers and the effect of training. *Arch Phys Med Rehabil* 2004 85:2011-9.
5. Coolen AL, Kirby RL, Landry J, MacPhee AH, Dupuis D, Smith C, Best, KL, MacKenzie DE, MacLeod DA. Wheelchair skills training program for clinicians: a randomized controlled trial with occupational therapy students. *Arch Phys Med Rehabil* 2004;85:1160-7.
6. MacPhee AH, Kirby RL, Coolen AL, Smith C, MacLeod DA, Dupuis D. Wheelchair skills training program: A randomized clinical trial of wheelchair users undergoing initial rehabilitation. *Arch Phys Med Rehabil* 2004;85: 41-50.
7. Best KL, Kirby RL, Smith C, MacLeod DA. Wheelchair skills training for community-based manual wheelchair users: A randomized controlled trial. *Arch Phys Med Rehabil* 2005;86: 2316-2323.
8. Kirby RL, Cooper RA. Applicability of the Wheelchair Skills Program to the Indian context. *Disability and Rehabilitation*. (in press)