CANWHEEL

improving wheeled mobility of older adults

Think Tank on Power Mobility

Toronto, Canada

June 9-10, 2011

Summary Report

UBC a place of mind

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This Think Tank was funded through a Canadian Institutes of Health Research (CIHR) Meeting, Planning, and Dissemination Grant held by and Dr. Bill Miller from the University of British Columbia (UBC). The development of the Think Tank was undertaken by the Planning Committee, listed below.

Planning Committee	
Claudine Auger	Post doctoral Trainee, Dept. of Epidemiology and Biostatistics, McGill University & UBC
Elmira Chan	Research Coordinator, Dept. of Occupational Science & Occupational Therapy (OSOT), UBC
Louise Demers	Professor, School of Rehabilitation, Université de Montréal
Laura Hurd Clarke	Associate Professor, School of Human Kinetics, UBC
Lee Kirby	Professor, Division of Physical Medicine and Rehabilitation, Dalhousie University
Alex Mihailidis	Event co-chair, Associate Professor, Dept. of OSOT, University of Toronto
Bill Miller	Event co-chair, Professor, Dept. of OSOT, UBC
Jan Miller Polgar	Associate Professor, School of Occupational Therapy, University of Western Ontario
Ian Mitchell	Associate Professor, Dept. of Computer Science, UBC
Francois Routhier	Adjunct Professor, Dept. of Rehabilitation, Université Laval
Pooja Viswanathan	PhD student, Dept. of Computer Science, UBC

CanWheel Think Tank on Power Mobility

Background information

A Think Tank on Power Mobility was held on June 9-10, 2011 in Toronto, Canada. The CIHR provided the support and funding for this event. This event was held in association with the Festival of International Conferences on Caregiving, Disability, Aging and Technology (FICCDAT www.ficcdat.ca).

There was a total of 42 attendees at this event with representatives from North America, Europe and Asia. Participants at this event were composed of occupational therapists, physicians, engineers, computer scientists, researchers and students.

The Think Tank had 11 speakers which included: Drs Philippe Archambault from Canada, Åse Brandt from Denmark, Andrew Frank from the United Kingdom, Helen Hoenig from the United States, Lisbeth Nilsson from Sweden, Rich Simpson from the United States and Mr Robert Webber from Canada. Members of the CanWheel team also presented results from their research and they included Drs Laura Hurd Clarke, Ben Mortenson, Lee Kirby and Ms. Alex Korotchenko.

Think Tank Objectives

1) Present and discuss the latest developments and research regarding the provision, prescription, customization, training and use of power wheelchairs.
2) To identify new questions/ areas to explore
3) Act as a catalyst in the formation of new international partnerships to unify research efforts in order to advance the knowledge of power wheelchair research and technology development.

Executive Summary

There is limited knowledge and research in the area of power mobility. It was noted that various gaps in the area of power mobility research exists which include longitudinal studies, qualitative studies, studies with large samples sizes and studies on the psychosocial aspects of power mobility use.

The attendees identified the barriers to training and power mobility use which included: wide ranges of cognitive and physical abilities, buy-in from health care professionals and stigma of power wheelchair use. Training is needed for both clinicians and wheelchair users to promote safe usage of power wheelchairs. In order to promote safe power wheelchair use, training needs to be tailored for the individual to account for the wide range of physical and cognitive abilities. Training of clinicians was also discussed as an important area to help improve buy-in and the adoption of power wheelchair mobility as sometimes health care professionals lack the skills and are reluctant to embrace technology. The stigma of being viewed as disabled when using a power wheelchair was also discussed. Understanding this stigma and the psychosocial dynamics of power wheelchair use would be key to overcoming this barrier.

Solutions to the barriers of power mobility were also discussed at this event. It was stated that proper and thorough assessment would help increase the adoption of power wheelchair use. Various training methods were discussed such as peer mentoring programs and using technology such as simulators to enhance training. Telehealth was also mentioned as a method to provide training to a wider catchment compared to the traditional methods . Cost efficiency studies on power wheelchair training would also help provide evidence on how training can reduce costs by reducing the number of accidents.

What was discussed?

Missing Links

There are gaps in research studies in the area of power wheelchairs. It was noted that longitudinal studies looking at the user's perspective and actual day to day use was lacking. The input of manufacturers in research studies was also suggested as something missing from our current research knowledge. Research on how people adapt and the interactions between physical, psychological and environmental factors were also stated as missing. Furthermore, having studies with larger samples sizes were also stated as lacking in current research studies.

Participants at the workshop voiced concerns over not understanding the power wheelchair user and the impact of technology. Capturing data from "lost" power wheelchair users, those who did not get prescribed a wheelchair and individuals who chose not to obtain or use a wheelchair was also seen as a missing gap in our knowledge. Data such as demographics, physical and psychological influences of such individuals and from individuals requesting power wheelchairs would be helpful in filling in the gaps in this area.

Qualitative data was also discussed amongst the participants as an area for improvement in research such as the quality of participation and qualitative information on children and older adults. Others believe that qualitative information can help capture the gestalt of power wheelchair use and can help answer questions that quantitative data cannot answer such as why do individuals travel there and not just where do they travel.

Finally, research involving cost benefits of power wheelchair provision, assessment and training was also listed as an area of improvement.

Challenges to Training and Power Mobility Use

Tailoring Needs

A challenge to training that was discussed was tailoring the training needs of each individual because one size does not fit all, users may have different needs and learning styles. Individuals who would benefit from power wheelchair can have a range of physical and cognitive abilities.

Power mobility and cognitive impairment is not well documented. How to assess and train an individual with cognitive impairment was described as challenging. How can a trainer ensure that the individual can partake in the assessment and understand the training? At which point is someone deemed unsafe to drive a power wheelchair?

Psychosocial

It was discussed how there may be a social stigma attached to power wheelchairs. Wheelchair users want to avoid being seen in public eye as disabled. From the qualitative studies presented at the Think Tank there was an impression that older adults may view this technology as useful but not something for them.

Training Environments

The environment in which training occurs was talked about amongst the attendees. The dynamics between the user, device and environment is complex and warrants further investigation. For instance, there may be a disconnect between training in the clinical setting and using the skills in the real world. The location of where training should occur was also discussed. If training is to be done at a facility then there are space limitations and availability issues. On the other hand if training were to be in a familiar or real environment of the wheelchair user then this could potentially be more costly.

Health Care Professionals

At times clinicians don't have the skills, confidence, knowledge or experience to provide training. Buy-in from clinicians also poses a barrier to the adoption of power wheelchairs and the associated new technologies, since such technologies may not be embraced by clinicians. Think Tank participants also questioned who should perform the training. Would it be the vendors, peer-groups, clinicians, family physicians?

Funding was discussed as being a challenge to training since it is not usually a covered expense. Furthermore the assessments can be costly and difficult to perform may also not be funded. Which brings up the question who is going to pay for training?

Safety Issues

How can clinicians assess whether or not an individual is safe to be driving a power wheelchair? Power wheelchairs are powerful heavy devices that can potentially cause harm to others. Indeed, it was discussed how some long term care facilities have banned the use of power wheelchairs due to safety issues. Although this was disheartening to hear since most elderly individuals whom would benefit from power wheelchair would not be able to push a manual wheelchair, unsafe power wheelchair use can be a liability.

The Technology of Wheelchair Designs

It was mentioned at the Think Tank that wheelchair technology has not changed in over 30 years. The wheelchair industry is small and innovation comes from research done in universities however, such designs are not brought into productions because industry makers don't support it. Smart chairs with collision avoidance technologies are seen as a potential solution for individuals with cognitive and physical disabilities. However, the cost of such devices is still very high and would thus not be a viable solution at present.

Suggested Solutions

Proper and throughout assessments to determine the needs of the wheelchair users was proposed as a solution. In order for power wheelchair to be effective it must suit the user's physical, mental, social and environmental needs. Does the chair's capability match the intentions of the user in terms of where they would like to use their chair. It was suggested that the Wheelchair Skills Test questionnaire version be used to identify problems areas and then to train the individual in a real environment to increase the usability of training.

Peer mentoring as a means of training was a suggest method to overcome the challenges of training and would also provide opportunities for people to be together. Other suggestions include training the caregivers since they have strong influence on users and provide ongoing support to them as well. Train the Trainer programs were talked about as a potential solution as well to increase knowledge and confidence with assessing power wheelchair users.

The use of technology was also suggested as a training method, such as integrating a simulator, the use of social networking venues to provide training, support and mentoring about wheelchair users. Other suggestions include using online web-tools such as videos for self-monitoring after the initial training. The use of photo diaries to capture more data and identifying barriers in the environment was also noted various times. Telehealth was also mentioned as a potential solution to training, follow-up and assessment of wheelchair users. The use of telehealth would also provide the opportunity for clinicians to extend their reach to individuals in rural areas as well as provide training across different environments through videoconferencing. However, there were concerns raised that older adults may not embrace the technologies mentioned above.

Involving policy makers and champions to promote new devices was proposed as a possible solution to introducing new wheelchair devices into the market. Another solution was proposed to have research teams link up with companies, such as automobile companies that have access to the mass market.

Knowledge translation was identified as a potential solution to the barriers in adopting power wheelchairs. Users, caregivers, clinicians, manufacturers and vendors need more education concerning power wheelchairs, technologies and training. It is hoped that with accurate up to date information such individuals can advocate for more funding for training.

Cost effectiveness studies on power wheelchair training are needed to demonstrate the return on investment. Evidence is needed to demonstrate how training can reduce costs by reducing the number of accidents.

Priorities

1. Creation of guidelines for assessments and training for wheelchair users was named as a priority, yet taking into consideration that one size does not fit all. Assessments and training should take into account the varying spectrum of physical and cognitive abilities of individuals.

2. Creation of training programs for other key stakeholders such as trainers and caregivers was also listed as a priority.

3. Providing a variety of service delivery models such as peer-group mentoring and telehealth for training and follow-ups.

Final Thoughts

The Think Tank ended with talks of international collaborations for CanWheel. International collaborations could create networking opportunities, provide opportunities to gain bigger insight into power mobility and provide comparisons between countries and cultures as well. Finally an international advisory board for CanWheel was noted as a great method to continue the synergy that was created at the Think Tank.

Presenter and Title of Presentation

Philippe Archambault	*The McGill Wheelchair Simulator: Presentation and First Results.*
Åse Brandt	*What do Nordic People do When They Use Their Power Wheelchair?*
Andrew Frank	*Experience of Older Users and Caregivers of Electric Powered Indoor/Outdoor Wheelchairs in the UK National Health Service.*
Helen Hoenig	*Making Good on the Promise of Power Mobility for Elders.*
Laura Hurd Clarke Alex Korotchenko	*Evaluating the Needs and Experiences of Older Adults Using Power Mobility Devices.*
Lee Kirby	*Power Wheelchair Skills: Assessment and Training.*
Ben Mortenson	*Experiences of Canadian Power Mobility Users Over Time.*
Lisbeth Nilsson	*Driving to Learn in a Powered Wheelchair - a Method for People with Cognitive Disabilities.*
Rich Simpson	*Where are the Smart Wheelchairs?*
Robert Webber	What I've learned about the IBOT.

Survey says...

Overall, the results from the Think Tank were quite positive for both days with an overall rating of 4.63 out of 5. We received 28 evaluation forms out of 42 (67%) attendees for Day 1. Results indicated that "organization" was rated the highest (average of 4.75) and "sufficient time for discussions" rated the lowest with an average of 3.8. For Day 2 we received 61% of the evaluation forms from the attendees. Participants rated the item "the speakers were effective and interesting" the highest with an average of 4.78 and the "likelihood of use of what you heard" the lowest with an average score of 4.25.

Respondents noted that they enjoyed hearing different international perspectives on power mobility and the networking opportunities throughout the entire event. Many noted that they enjoyed the real life experiences and perspectives of Robert Webber, the IBOT user.

When asked about how to improve this event, respondents stated that having the Think Tank as a pre conference event would be better than as a post conference event. Other comments were to involve more power wheelchair users, policy makers and manufacturers in our Think Tank.

Acknowledgements

Thank you to CIHR Institute of Aging for providing the funding for this event. Special thanks to Dr Anne Martin-Matthews, who took the time out of her busy schedule to come and speak at our event on behalf of CIHR. Venue locations were provided with the help of University of Toronto's Department of Occupational Science & Occupational Therapy.

Thank you to all attendees who made this event a success!

For more information please contact: canwheel@gmail.com

www.CanWheel.ca

Appendix

List of Attendees

Name	Institution	Country
Philippe Archambault	McGill University	Canada
Claudine Auger	University of British Columbia	Canada
Krista Best	University of British Columbia	Canada
Patrick Boissy	Université de Sherbrooke	Canada
Ase Brandt	University of South Denmark	Denmark
Elmira Chan	University of British Columbia	Canada
Czeslaw Cimachowski	Future Mobility Healthcare Inc.	Canada
Louise Demers	Université de Montréal	Canada
Debbie Fields	University of British Columbia	Canada
Andrew Frank	Brunel University	England
Ed Giesbrecht	University of British Columbia	Canada
Helen Hoenig	Duke University	United States
Pam Holliday	Toronto Rehab Institute	Canada
Tuck-Voon How	University of Toronto	Canada
Laura Hurd Clarke	University of British Columbia	Canada
Jeffrey Jutai	University of Ottawa	Canada
Lee Kirby	Dalhousie University	Canada
Alex Korotchenko	University of British Columbia	Canada
Bob Levy	Criterion Health Inc.	United States
Megan MacGillivray	University of British Columbia	Canada
Alan Mackworth	University of British Columbia	Canada
Margot McWhirter	Shoppers Home Health Care	Canada
Alex Mihailidis	University of Toronto	Canada
Bill Miller	University of British Columbia	Canada
Jan Miller Polgar	University of Western Ontario	Canada
Ian Mitchell	University of British Columbia	Canada
Ben Mortenson	University of British Columbia	Canada
Liz Mullan	University of Toronto	Canada
Rick Nelson	Criterion Health Inc.	United States
Lisbeth Nilsson	Lund University	Sweden
Meeko Oishi	University of British Columbia	Canada
Joelle Pineau	McGill University	Canada
Francois Routhier	Université Laval	Canada
Paula Rushton	University of British Columbia	Canada
Steve Ryan	Bloorview	Canada
Bonita Sawatzky	University of British Columbia	Canada
Rich Simpson	University of Pittsburgh	United States

Cher Smith	Dalhousie University	Canada
Ong Teck Soon	Ngee Ann Polytechnic	Singapore
Kok Fai Tang	Ngee Ann Polytechnic	Singapore
Laura Titus	University of Western Ontario	Canada
Pooja Viswanathan	University of British Columbia	Canada
Rosalie Wang	University of Toronto	Canada
Robert Webber	iBOT wheelchair user	Canada