Report to the Burnaby Hospital Foundation

Community Health and Wellness Grant Program
March 2, 2015
Executive Summary

In May 2015, the Burnaby Hospital Foundation proudly partnered with Simon Fraser University, by providing a grant of $50,000 to support the Fall and Injury Prevention in Seniors Program.

The project supported research and education by supporting five students working in the Injury Prevention and Mobility Lab (IPML), under the supervision of Dr. Stephen Robinovitch, a leader in the field of injury prevention and mobility biomechanics.

Each one of the five students was hired as part of the SFU Co-op Program for an 8 month Research Assistant position. This opportunity provides students with a unique opportunity for hands-on, experiential learning.

Combining new evidence with proven research, the Injury Prevention and Mobility Lab provides improved approaches to address risk factors for falls and fall-related injuries using exercise, modifications to the environment, improvements to hip protectors, and wearable fall monitors.

Burnaby Hospital Foundation’s support of the IPML helped provide outcomes regarding measurements of the feasibility of interventions in long term care and acute care environments, and the effect of interventions on the frequency of falls and fall-related injuries among older people in the Burnaby area.

The Students Reports show how your contribution helped educate the next generation of professionals working to improve the quality of seniors’ lives through the prevention of falls and injuries.
Student reports

Carmen Ho, Research Assistant, Injury Prevention and Mobility Lab

Since joining the Injury Prevention and Mobility Lab (IPML) in late 2014, I have had the privilege to work with long-term care (LTC) staff, residents and families in facilitating the informed consent process to participate in research, and in generating improved awareness of fall prevention.

After personally observing the debilitating effects of falls on older adults, I am now leading a research study to improve our understanding of the problem of fall-related traumatic brain injury in seniors. My project focuses on analyzing fall biomechanics, specifically to identify head impact avoidance and fall arrest mechanisms. Translation of this knowledge on “how people avoid head impact in falls” should benefit residents and care providers in LTC, and older adults living in the community.

Through this position, I have learned many new things, and have grown both academically and personally. I am grateful to the Burnaby Hospital Foundation and the IPML for the opportunity to give back to the community and contribute to research that positively impacts the health and well-being of older adults.

Bryan Lo, Research Assistant, Injury Prevention and Mobility Lab

My work in the Injury Prevention and Mobility Lab includes collecting video footage of real life falls in our two partner long-term care facilities (LTC) located in Burnaby and Delta.

After retrieving these videos I bring them back to the Lab for analysis. The results from this analysis help us to better understand how and why falls occur in LTC, at an individual or group level. I am also responsible for coordinating research projects within these two LTC facilities, liaising with front line staff and speaking with residents and family members about our research to obtain their consent to participate.

My work has provided me with the opportunity to talk to the seniors and hear the life stories of those who were willing and capable of sharing. I often gained
valuable life experience from their stories, and the seniors expressed gratefulness for the time that they were able to spend talking with me. I have also enjoyed valuable interactions with facility staff and management, working together to solve problems related to data collection.

Lukas Grajauskas, Research Assistant, Injury Prevention and Mobility Lab

Recurrent falls are common among older people and pose a risk for injury in this already frail population. Previous work has shown the occurrence of recurrent falls to be associated with frailty, comorbid disorders, and polypharmacy, as well as patterns of behavior. The specific risk factors that are present within an individual may lead to consistency in the circumstances of falls. By determining whether there is a pattern to repeated falls in an individual, we should be able to develop improved approaches to prevention.

In order to investigate this, my work focuses on analyzing the consistency of falls within recurrent fallers, and its association with their medical status, such as cognitive impairments, deficits in physical function and medical diagnoses. 126 individuals in our dataset were identified as frequent fallers, who were classified as such if they experienced a year in which they had five or more falls. These individuals were reported to collectively have experienced 3328 falls, 740 of which were captured on video and analyzed in our lab.

Through computer simulations I explored methods to quantify consistency in circumstances and causes of falls within these individuals. I am currently studying the medical status of these recurrent fallers to explore the presence of individuals with similar personal risk factors. My work will help to understand how and why certain individuals experience a high number of falls, allowing us to better design interventions to benefit this specific population.

Raymond Hoang, Research Assistant, Injury Prevention and Mobility Lab

Recreation Therapy is a multifaceted process designed to restore, maintain or improve a person’s level of functionality and independence in their daily life activities. My current research project is centred on a literature review of the effectiveness of recreation therapy programs to
enhance mobility in older people residing in long-term care. Through an extensive literature search, I have identified 82 relevant publications. I am now working on a summary table that outlines the main findings from these aforementioned publications. In February, I presented my study design for feedback from recreation therapy leaders. My efforts will contribute to a list of recommendations, and to the development of a decision-making tool for recreation therapy workers in selecting programs that best meet client needs in long-term care.

**Cherlene Chang, Research Assistant, Injury Prevention and Mobility Lab**

Falls are the leading cause of unintentional injuries in older adults, and are common in long-term care. During my co-op from January to April, 2016, I studied where falls occur to gain insight in the effects of intensity of use and presence of environmental hazards and facilitators.

Using video recordings of a single long-term care unit, I showed that falls are most likely to occur in the dining areas, followed by lounge, and hallways. I further found that intensity of use (the distribution of locations where residents spent their time) accounts for 86% of the spatial distribution of falls. I am now studying whether environmental hazards further account for variations in spatial distributions of falls. By improving our understanding of where falls most likely occur - and why specific areas are more high-risk for falls - my results should contribute to more effective targeting of fall prevention in long-term care.
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