Cognitive Vitality and Brain Health: Mental Health

Twenty percent of Canadians will personally experience a mental illness in their lifetime. Approximately eight percent of adults will experience major depression at some time in their lives.

-Canadian Mental Health Association

Rates of mental illness for adults between the ages of 70 and 89, including but not limited to dementia, are projected to be higher than for any other age group by 2041.

-Mental Health Commission of Canada

One of the most exciting prospects for Cognitive Vitality and Brain Health is the opportunity to bring specialized mental health care, teaching and research to Parkwood Institute.

Falls

Dr. Lisa Van Bussel is leading a study using a state-of-the-art emergency response system to detect and alert nursing staff to any unwitnessed falls in patients with advanced dementia. The system is called HELPER, and it is a ceiling mounted un-obstructive tool that detects when a person is on the floor and not moving and initiates an emergency call to the nursing station for response.

“Restraining people who are physically able to walk, but have a severe dementia is not the answer. We need to find ways to balance safety with freedom, by not only responding quickly to reduce harm, but by combining a range of clinical and technical capabilities to better predict and prevent falls,” states Dr. Van Bussel.

To improve predictors of falls, Dr. Amer Burhan is leading another project in collaboration with Queen’s University. The study is evaluating the feasibility of a device known as the Actigraph, a small, light-weight monitor worn on a patient’s wrist and waist. The Actigraph records the person’s motor activities for up to 30 days with one battery charge. The data from the device will help identify episodes of agitation and insomnia – factors that can contribute to falls in patients with dementia.

Dr. Burhan says, “Any way we can personalize each person’s care using information they can no longer tell us outright will help us prevent falls, one of the most significant health risk factors for people with dementia.”

This work has gained national and international attention. Most recently, Dr.Burhan and colleagues presented a symposium on falls prevention and technology at the International Psychogeriatric Association meeting in Seoul Korea.

Transcranial Magnetic Stimulation

A study is underway evaluating the effect of Transcranial Magnetic Stimulation (TMS) on the cortex of patients with Alzheimer’s disease and the potential for this treatment to enhance brain and cognitive function. Dr. Amar Burhan and Lawson researchers, Drs. Frank Prato, Alexandre Legros and Alex Thomas are conducting this study together. Dr. Burhan is also the director of the first certificate course in TMS in collaboration with the Temerty Brain Stimulation Centre at the Centre for Addiction and Mental Health and the University of Toronto.

While not yet available for mainstream use, Dr. Burhan says TMS also holds promise for treating many other conditions such as obsessive compulsive disorder, schizophrenia, post-partum depression, chronic pain, post-traumatic stress disorder and various addictions. It is also being investigated as a potential tool for cognitive enhancement.