



A GPS THAT GIVES ALZHEIMER'S PATIENTS AUTONOMY

The Universidad del Rosario has participated with other institutions in a project to evaluate a GPS technology that allows people with dementia, mainly Alzheimer's disease, to move about independently without risk of getting lost.

Allison Warman is a successful fashion designer in Canada. In 2011, her illness forced her to give up designing for influential personalities, and also reading and driving. One day when she was driving home, she became disoriented and could not remember how to get there. Her husband went out to find her, and later took her to see a doctor. After medical tests, she was told that she had lost some of her cognitive faculties. At the age of 53, this active professional and mother of three was told that she had no choice but to stay home if she didn't want to get lost.

Disorientation and the inability to get back to where they came from have forced people with Alzheimer's disease, one of the most common kinds of dementia, to stay home under permanent care. They lose their independence, and their families are faced with supervising them day and night.

These are the facts that convinced the Universidad del Rosario to participate with the University of Alberta and Alberta Health Services in Edmonton, Alberta (Canada), in a project to evaluate GPS technology that enables people with dementia, mainly Alzheimer's disease, to move about independently without risk of getting lost.

"GPS technology gives patients and their carers peace of mind," says Antonio Miguel Cruz, director of the Biomedical Engineering Program at the School of Medicine and Health Sciences at the Universidad del Rosario.

The program's research lines include the evaluation and development of low-cost technology for solving human problems such as aging and the issues of older adults, and it is carried out in cooperation with researchers from the Master course in Occupational Therapy at the Faculty of Rehabilitation Medicine of the University of Alberta, Edmonton (Canada).

Based on his experience in this field, and on the agreement El Rosario has with the Facul-

The World Health Organization (WHO) calculates that some 47.5 million people in the world suffer from dementia and that 7.7 million new cases are reported annually. Alzheimer's disease is the most common form of dementia, representing between 60 and 70% of all cases.

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ty of Rehabilitation Medicine at the Canadian university, the program has participated in the Locator Device Project, the aim of which was to evaluate the acceptance by patients and caregivers of GPS technology that helps patients with cognitive disabilities avoid getting lost.

“We located 56 pairs of people (caregiver plus dementia patient) in Canada interested in participating and, based on our criteria for inclusion in the study, we chose 45 pairs to participate. Sixteen of these pairs left the study, some because they died and others because the patients went into critical care in hospitals. By the end of the study, we had a total of 29 pairs,” explains Antonio Miguel Cruz.

Allison and her husband were one of those pairs. The device that she used for 5½ months was a kind of telephone that she wore around her neck and that reported on Google Maps where she was in real time. Thanks to that experience, she now feels safer and can walk alone outside her home. “The best thing about it was being able to go out on her own. The device contributes to her emotional well-being simply through her knowing she is safe. It’s powerful. It’s a wonderful thing,” says Allison’s husband Tim in Rehab Impact Report, the annual publication of the University of Alberta’s Faculty of Rehabilitation Medicine.

The device used by Allison sends text messages or emails to the family when she leaves an area predetermined to be safe, as do other similar devices that take the form of watches, bracelets, or computer chips implanted in the soles of patients’ shoes.

AN INCAPACITATING AILMENT

According to the WHO, “dementia is a syndrome that brings about a deterioration in memory, thinking, behavior, and the ability to perform everyday activities,” and stresses

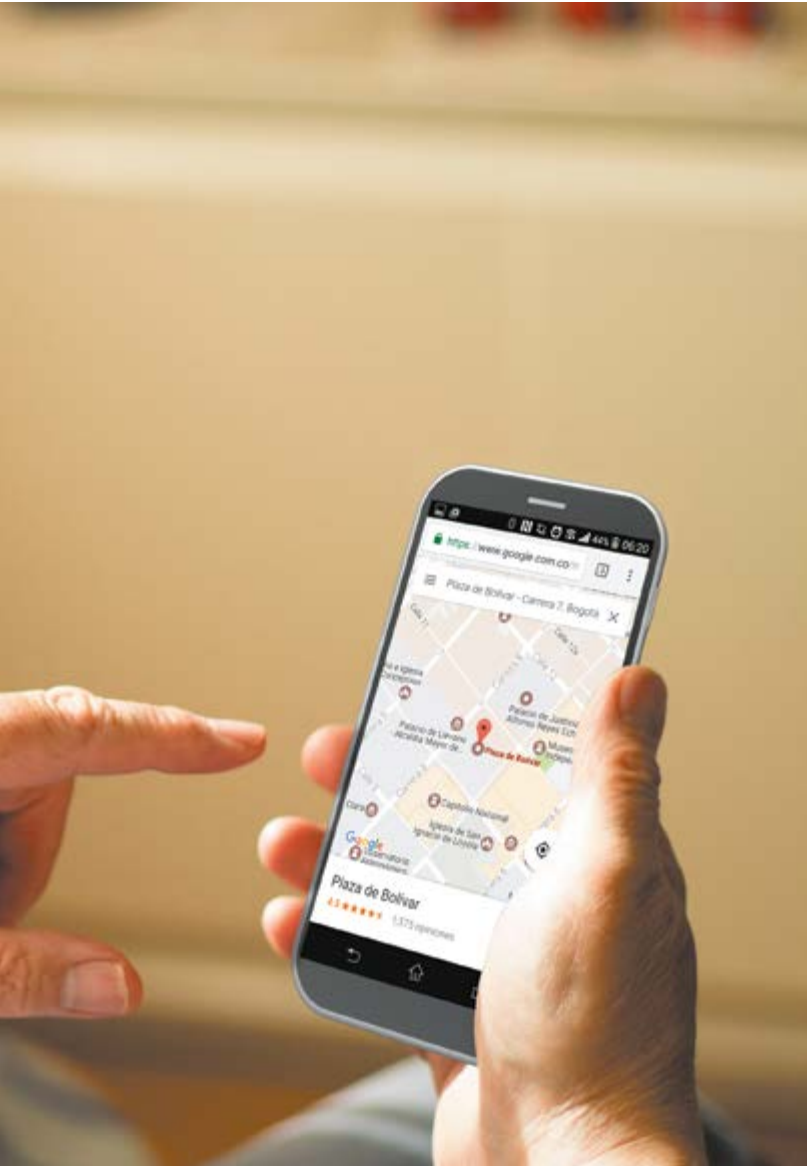


↑ The study showed that the GPS device was useful for both patients and caregivers. It gave the patients confidence, security, and independence, and provided caregivers with peace of mind.

that “although dementia mainly affects older people, it is not a normal part of aging.”

The WHO calculates that there are some 47.5 million people suffering from dementia worldwide and that 7.7 million new cases are recorded annually. Alzheimer’s disease is the most common form of dementia, representing some 60-70% of all cases. The patients who suffer from this form and other forms of dementia (vascular dementia, dementia with Lewy bodies, and frontotemporal dementia, for example) are incapacitated and suffer from dependency due to its physical, psychological, and social impacts. It also impacts caregivers and families of patients in the same way.

The 12-month study carried out in Canada by the University of Alberta and the Universidad del Rosario showed that the GPS device is useful for both patients and caregivers, since it brings confidence, safety, and independence to the former, and peace of mind to the latter.



“Family members’ experience greater calm if the patient has a GPS device, even if there is an accident or an incident,” points out Lili Liu, principal investigator, professor, and chair of the Department of Occupational Therapy at the Faculty of Rehabilitation Medicine of the University of Alberta, in the annual publication mentioned above.

This conclusion is based on the answers to standardised questions given to patients and caregivers before and after they used the technology. Researchers read comments such as “the device gives me peace of mind because I know that if he is wandering outside I’ll be able to find him,” and “it’s been a godsend for my wife”. The patients themselves said they felt “safer” because if they get lost they can be found, and “more independent” because they were once again able to enjoy daily activities like visiting their friends, going shopping, or visiting the library.

“For the 5½ months that they had the device, research assistants called them weekly to ask how their use of the device

↑ Antonio Miguel Cruz, director of the Program of Biomedical Engineering of the Universidad del Rosario, says that the program is now participating in a professional network with Canadians trying to bring these technologies into widespread use. They are in conversations with a company called SafeTracks GPS to see if it is possible to run the experiment in since it brings confidence, safety, and independence to the in Colombia.

was going. The goals of these calls were to find out when patients used the devices most frequently, what the most common uses were, and to find out if there were any battery problems or other issues that could be resolved in real time,” explains Dr. Cruz.

In addition, researchers included other parties interested in the technology in a triangulation exercise. Such parties included the Alzheimer Association of Canada, police, home care administrators, occupational therapists, and social workers, who participated in focus groups. Many of them praised the positive effects of GPS use for families and patients and the economic benefits for the healthcare system, suggesting that their use be greatly expanded.

VERY LOW COSTS

The use of the device may cost between US \$20-30 per month, and can be paid for jointly through contributions from both the patient and the government.

“We are now participating in a professional network with Canadians, where one of our areas of work is to try to bring these technologies into widespread use. We have been in conversation with Safe Tracks Tecnología GPS, a company that is promoting the use of the devices, to see if it is possible to run the experiment in Colombia. This will require resources,” says Cruz, director of the Program of Biomedical Engineering at the School of Medicine and Health Sciences of the Universidad del Rosario. ■