At-Home Gaming Program Helps Stroke Survivors

Researchers at The Ohio State University Wexner Medical Center have developed a therapeutic at-home gaming program for stroke patients who experience motor weakness (hemiparesis), which affects 80% of survivors.

Constraint-induced movement therapy (CI therapy) is an intense treatment recommended for stroke survivors and improves motor function, as well as the use of impaired upper extremities. However, less than 1% of those affected by hemiparesis receive the beneficial therapy, attributed to lack of access, transportation, and cost. To address this disparity, the research team developed a three-dimensional (3D) gaming system to deliver CI therapy to patients in their homes.

For a combined 30 hours over the course of 2 weeks, the patient-gamer is immersed in a river canyon environment, where he or she receives engaging high-repetition motor practice targeting the affected hand and arm. Various game scenarios promote movements that challenge the stroke survivor and are beneficial to recovery. Some examples include: rowing and paddling down a river, swatting away bats inside a cave, grabbing bottles from the water, fishing, avoiding rocks in the rapids, catching parachutes containing supplies, and steering to capture treasure chests. Throughout the intensive training schedule, the participant wears a padded mitt on the less affected hand for 10 hours daily, to promote the use of the more affected hand.

To ensure that motor gains made through the game carry over to daily life, the game encourages participants to reflect on their daily use of the weaker arm and engages the gamer in additional problem-solving ways of using the weaker arm for daily activities. Patients have reported they have more motivation, time goes by quicker, and the challenges are exciting and not so tedious.

Nancy Henckle undergoes rehabilitation for a stroke by playing a video game developed at The Ohio State University Wexner Medical Center. Early tests showed that patients logged an average of more than 1,500 movements per hour while playing the game, helping them become more functional and flexible. Reprinted with permission from The Ohio State University Wexner Medical Center.

Edna Stilwell Writing Award Announced

Journal of Gerontological Nursing (JGN) authors Marianne Smith, PhD, RN; Susan K. Schultz, MD; Linda L. Seydel, MS, LNHA; Jeffrey Reist, PharmD; Michael Kelly, PharmD, MS; Michelle Weckman, MD; Brian Gryzlak, MSW, MA; and Ryan Carnahan, PharmD, MS, were selected as the recipients of the 16th annual Edna Stilwell Writing Award for their article, "Improving Antipsychotic Agent Use in Nursing Homes: Development of an Algorithm for Treating Problem Behaviors in Dementia," published in the May 2013 issue of JGN (Vol. 39, No. 5, pp. 24-35). The article focuses on a dissemination research project designed to increase appropriate antipsychotic prescribing for older adults with dementia. A step-wise problem-solving algorithm designed to reduce unnecessary psychotropic medication use is described.

Donna M. Fick, PhD, RN, FGSA, FAAN, Editor (left), presents the Edna Stilwell Writing Award to Marianne Smith, PhD, RN, during the Gerontological Society of America's annual conference in New Orleans.

The Award, which includes a plaque and a $500 cash prize, was established by SLACK Incorporated, publisher of JGN, in recognition of the contributions of Edna M. Stilwell, PhD, RN, C, as Editor of JGN from 1974 to 1997. The purpose of the Award is to continue Stilwell's tradition of mentoring and recognizing authors in the field of gerontological nursing.

All authors published in JGN are eligible for this Award, given to the author or group of authors of the best article published each year. Entrants are nominated by Editorial Board and Review Panel members during blind peer review, and the winner is selected by a committee.

JGN congratulates the authors on their outstanding contribution.

Source. "Researchers Develop At-Home 3D Video Game for Stroke Patients." (2013, November 8). Retrieved November 19, 2013, from http://bit.ly/1bibbGV.

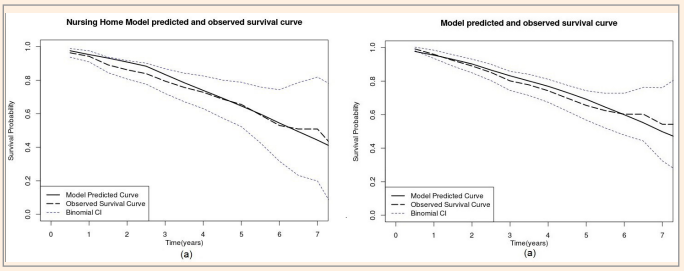
Brain Benefit Seen in Being Bilingual

In the largest study on the topic to date, research shows that speaking a second language may delay the onset of three types of dementia. The research is published online in *Neurology*. The study found that people who spoke two languages developed dementia 4.5 years later than people who only spoke one language.

For the study, 648 people from India with an average age of 66 who were diagnosed with dementia were evaluated. Of those, 391 spoke two or more languages. A total of 240 had Alzheimer's disease, 189 had vascular dementia, and 116 had frontotemporal dementia, with the remainder having dementia with Lewy bodies and mixed dementia. Fourteen percent were illiterate. People who spoke two languages had a later onset of Alzheimer's disease, frontotemporal dementia, and vascular dementia than people who spoke only one language. The difference was also found in those who could not read. There was

New Method Predicts Individualized Progression of Alzheimer's Disease

A Columbia University Medical Center–led research team has clinically validated a new method for predicting time to full-time care, nursing home residence, or death for patients with Alzheimer's disease (AD). The method, which uses data gathered from a single patient visit, is based on a complex model of AD progression that the researchers developed by consecutively following two sets of AD patients for 10 years each. The results were published online in the *Journal of Alzheimer's Disease*.



These graphs compare predictions made with the Longitudinal Grade of Membership (used to validate the model for predicting time to Alzheimer's disease endpoints) with the actual outcomes. The left graph shows time to nursing home, and the right graph shows time to death. The solid black line shows the predicted timeframe; the dotted black line shows the actual timeframe. The dotted light blue lines indicate the range (confidence interval) of the actual outcomes. Reprinted with permission from Drs. Ray Razlighi/Yaakov Stern, Columbia University Medical Center.

The prediction method is based on a Longitudinal Grade of Membership (L-GoM) model, published in 2010. The L-GoM includes 16 sets of variables, such as ability to participate in routine day-to-day activities; mental status; motor skills; estimated time of symptom onset; and duration of tremor, rigidity, or other neurological symptoms. It also includes data obtained postmortem (time and cause of death).

The benefit of the L-GoM model is that it takes into account the complexity of AD, as patients typically cannot be categorized specifically into mild, moderate, or severe disease stages. The method is flexible enough to handle missing data, and not all 16 variables are needed for accurate predictions.

Results can be presented as expected time to a particular outcome. Two 68-year-old AD patients, for example, had similar mental status scores (one a Mini-Mental State Examination score of 38 of 54, the other of 39 of 54) at initial visit. The first patient was more dependent on his caregiver and had psychiatric symptoms (delusions). These and other subtle differences in the initial presentation of the two patients resulted in different predictions of time until death. The method accurately predicted that the first patient would die within 3 years, whereas the other would survive more than 10 years.

In addition to time to nursing home residence or death, the method can be used to predict time to assisted living or other levels of care, such as needing help with eating or dressing, or time to incontinence.

The research team is now developing a computer program that would allow clinicians to input the variables and receive a report. They expect the program to become available within the next 2 years. Eventually, such a program might be incorporated into electronic health records. The new method may also be used in clinical trials to ensure that patient cohorts are balanced between those with faster-progressing AD and those with slower-progressing disease—and by health economists to predict the economic impact of AD.

The researchers are also testing the method with a third cohort. Although the first two sets of patients were primarily White, educated, and of high socioeconomic status, the new cohort follows a diverse group comprising older, urban-dwelling residents. Because participants may be dementia-free when they join the study, the researchers are able to capture the age of dementia onset and track symptom development over time.

Source. "New Method Predicts Time from Alzheimer's Onset to Nursing Home, Death." (2013, November 7). Retrieved November 19, 2013, from http://bit.ly/16JS1vl.

no additional benefit in speaking more than two languages. The two-language effect on age of dementia onset was shown separately of other factors such as education, gender, occupation, and whether participants lived in the city or country.

Source. "Speaking a Second Language May Delay Different Dementias." (2013, October 30). Retrieved November 19, 2013, from https://www.aan.com/pressroom/home/pressrelease/1219.

Nation's First Delirium Research Center to be Built in Boston

Sharon K. Inouye, MD, MPH, Director of the Aging Brain Center in the Institute for Aging Research at Hebrew SeniorLife, professor of Medicine at Harvard Medical School, and a faculty member in the Division of Gerontology at Beth Israel Deaconess Medical Center, recently received the prestigious Academic Leadership Award (K07) from the National Institutes of Health to build the nation's first Center of Excellence for Delirium Research. The Center, which will be called CEDARTREE (Center of Excellence for Delirium in Aging: Research, Training and Educational Enhancement) will be located at Hebrew SeniorLife in Boston and will operate under the direction of a national advisory board in close collaboration with Harvard Medical School and other academic institutions throughout Massachusetts.

CEDARTREE will offer comprehensive interdisciplinary training and mentorship in delirium research to attract interdisciplinary investigators to engage in collaborative, delirium-related, and patient-oriented research. CEDARTREE will advance research and training, foster dissemination of research findings, and serve as a local and national resource for delirium research. Health care professionals interested in participating in delirium research and training are invited to contact Dr. Eva Schmitt at evaschmitt@hsl.harvard.edu or (617) 971-5392.

Dr. Inouye is an internationally recognized expert in aging and geriatric medicine, clinical research methods and research training, whose investigations into the recognition of and risk factors for the onset of delirium in older patients have influenced hospital care around the world. Dr. Inouye developed and validated a new instrument for the identification of delirium called the Confusion Assessment Method, which is now translated into more than 20 languages and is the most widely used tool in the field. She also developed the Hospital Elder Life Program to prevent delirium in hospitalized patients. Published in a landmark study in the *New England Journal of Medicine*, the strategy has been successful in reducing delirium in hospitalized patients by 40% and has been adopted by more than 200 hospitals worldwide. She currently serves as Director of the Successful Aging after Elective Surgery study, an $11 million Program Project on Delirium funded by the National Institute on Aging. She is an elected member of the Institute of Medicine of the National Academies.

Source. Hebrew SeniorLife. (2013, September 19). Sharon K. Inouye, M.D., M.P.H., Granted Leadership Award by the National Institute on Aging to Build Nation's First Delirium Research Center *[Press release]. Boston, MA: Author.*

Study to Examine Older Adults' Resilience After Superstorm Sandy

Rachel Pruchno, PhD, Director of Research at the New Jersey Institute for Successful Aging at the Rowan University School of Osteopathic Medicine, has received a 2-year $681,000 grant from the U.S. Department of Health and Human Services to examine the effects of Hurricane Sandy on a large, representative sample of more than 3,200 older people living in the nine New Jersey counties hit hardest by the storm. The study will identify aspects of social capital that promote the resilience of older adults exposed to the disaster. Because the participants were also assessed twice (in 2006 and in 2011) before Hurricane Sandy, the study offers a unique opportunity to understand resilience in older people.

Pruchno estimates that approximately two thirds of the eligible participants will have had some personal disaster exposure. Findings from this study will provide critical

information informing individual and community-based interventions that can help minimize the vulnerability of older people both before and after a disaster strikes.

In addition to re-interviewing study participants in the nine New Jersey counties, the researchers will gather data from a variety of sources, including Medicare/Medicaid claims data, the 2010 Census, and focus groups of community service providers.

Source. "$681K Grant to Examine Hurricane Sandy's Impact on Older People." (2013, October 21). Retrieved November 19, 2013, from http://bit.ly/1jjVi7a.

doi:10.3928/00989134-20131202-98