Alzheimer’s risk: Middle-age-lifestyle changes improve motivation and memory

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Alzheimer’s disease (AD) affects nearly 5.4 million individuals in the U.S. every year. With an increasing number of AD patients and no known cure, understanding genetic and environmental risk factors is key to prevention.

Although genetics is a key risk factor for AD, 50-60% of risk factors are environmental. This means that lifestyle/behavioral changes are the best approach to preventing early-onset Alzheimer’s disease (due to non-genetic risks).

An online database and smartphone app were created that provide users with an easy source of information about AD prevention behaviors. Two benchmark results of this study were the effect on intrinsic motivation and metacognition in study participants who had access to the database and app.

A randomized controlled trial of 146 participants between the age of 40-64 was conducted.

The treatment group was provided an evidence-based educational program, a wearable activity monitor, and a smartphone app that provided suggestions for behavioral changes and tracked which changes participants incorporated.

Before, during, and after the 6-month experiment, treatment and control group members completed surveys that measured metacognitive concern, perceived stress, and intrinsic motivation.

Metacognitive concern was measured with a survey of how participants felt their memory was now compared to 3 years ago in seven areas: remembering recent events and names/faces of friends/relatives, train of thought, navigation to familiar places, operation of appliances, how to perform household chores/hobbies, and an overall rating.

Intrinsic motivation was measured with a survey inquiring why the individual was engaged as a study participant. Optional responses included: because the activity is interesting, because the activity is pleasant, and because the activity is fun.

Preliminary results suggest that making lifestyle changes in key areas leads to improved perceived mental health (metacognitive concern) and intrinsic motivation.

This pilot study was conducted on a racially and culturally homogeneous group. Future studies with international collaborators, intended to address AD on a global scale, will reveal if results from this study will be mirrored in a more diverse population.

Research supported by the Office of the Vice President for Research and Graduate Studies and the Emma Eccles Jones College of Education and Human Services, Utah State University; Nike Corporation; the Intermountain Logan Regional Hospital Foundation; the Department of Education and Learning Northern Ireland; and the Computer Science Research Institute at the University of Ulster.