Name(s)	Project Number
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Project Title

Joggin' Your Noggin

Abstract

Objectives/Goals

Will Lumosity, a brain-training app focused on improving cognitive flexibility, have a positive effect on participants who suffer from diminishing mental abilities? I wanted to analyze mental decline and determine the effects of Lumosity, upon the mental capacities of senior participants.

Methods/Materials

I found a geriatric facility that holds elderly people 65 years and older. I interviewed the residents and found 10 eligible participants (5 variable and 5 control). I downloaded the Lumosity App onto my iPad. Next, I assigned a Lumosity account to each participant to maintain confidentiality. During each session we played a series of 3 games, testing various mental abilities (memory, flexibility, speed, attention, and problem solving). I consistently held sessions 3 times a week for 5 weeks with my variable group. I met with my control group twice in the beginning and end of my study. I recorded scores and took observations.

Results

All variable participants had an overall increase in scores. One participant's initial score was 600 points and his/her final score was 7,650. The average increase of the variable group was approximately 250 points per session. Conversely, the control group displayed an average decrease of about 150 points per session.

Conclusions/Discussion

I hypothesized that the variable group of participants would display an overall increase in scores, indicating cognitive improvement. One of my participants recently had brain surgery and had lost parts of her memory- she benefited the most from playing this app. She remembered things from her past during certain sessions. Lumosity improves pattern recognition. As an extension, I further tested Lumosity with another brain-training app called Elevate. While both apps have the same premise, Evelate focuses on a different set of skills than Lumosity, with an emphasis on writing, reading and listening. Lumosity works as an educational tool, while Elevate appears as a mobile game. This creates the next question; will improved pattern recognition improve fluid and crystal intelligence?

Summary Statement

The effects of a brain training application on the cognitive flexibility of participants who suffer from diminishing mental abilities.

Help Received

Dr. Faisal Qazi is a neurologist in Pomona, California for allowing me to interview him. Ms Naz Hai from The Heights Senior care facility for allowing me to carry out my study on the people who live there. My Science teacher for helping me develop my topic.