**BACKGROUND**

- Computer games are gaining popularity as a tool for health assessment.
- They are a pleasant alternative to paper tests known to cause patient stress.¹
- Computer games provide daily/weekly monitoring versus bi-annual/annual clinical assessments, offering more insight and information into health status.²
- To date, few games have been developed for people with moderate dementia.

**OBJECTIVES**

- Enhance a whack-a-mole game to monitor people with moderate dementia.
- Collect data and monitor how scores change.
- Determine correlation between baseline cognitive testing and baseline game play.

**METHODS**

**WHO**

- 12-16 participants from an adult dementia day program in Kanata.
- Exclusions included: vision problems, hearing problems, attention deficits, and arthritis.

**WHAT**

- A whack-a-mole game designed to measure processing speed and inhibition.
- Pre-Game testing: MMSE, Trails A and Ramparts.
- 9-month period; 15 minutes of game play per week for the study’s duration.

**WHEN**

- Recruitment began in June 2016; game play started in July 2016.

**HOW**

- University of Alberta designed original game; Ottawa team adapted it.
- Carleton developed algorithms to analyze the game data.
- Overall game play results will be compared to the cognitive scores.

**RESULTS**

- Preliminary results are based on participants’ baseline data from the first session.

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Mean (low-high)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>77.6 (69-95)</td>
</tr>
<tr>
<td>Education</td>
<td>12.0 (7-15)</td>
</tr>
<tr>
<td>Yrs. Since DX</td>
<td>4.29 (0-10)</td>
</tr>
<tr>
<td>MMSE Score</td>
<td>19.4 (12-24)</td>
</tr>
</tbody>
</table>

- Group with high MMSE scores reached a higher level, hit more moles and had a faster reaction time than those with a low MMSE score.
- There is a trend showing the higher the MMSE score, the faster the reaction time.

**DISCUSSION**

- Early findings suggest there may be a relationship between MMSE scores and game play ability in people with moderate dementia.
- We were able to teach 7 participants to play the game in their first session.
- **Next Steps:** Analysis with Trails A and Ramparts tests, long term game play results.

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**REFERENCES**