Games and Puzzles to Boggle the Mind

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Problem
Alterations in memory have been associated with the aging process.

Question
Can older adults benefit from memory enhancement exercises?

Method
Replication study based on the research done by Palker, N., Barr-Silk, M., and Lender, N. (2004) was conducted.

Subjective questions. 1
Participant consent and IRB approval was obtained prior to the study.
This study took place over a five week period with each session lasting one hour.

Each session consisted of a different game or puzzle activity geared to stimulate memory enhancement.

Data Collection
A pre-test was given at the beginning of the first session consisting of an objective and a subjective section.
A post-test, identical to the pre-test, was administered the week following the last game.

Before the situation never happened, it's difficult to remember a word list, recognizing five faces, and recalling details of a picture. Alterations were made in the content because the original tests were not available.

Participants were given thirty seconds each for the seven-word list and recognizing five faces. One minute was allowed for recalling details from the picture.

Sample
Residents from an assisted living facility volunteered to participate; an average of 10 residents participated weekly.
Three female volunteers ages ranging from 55-98 completed both the pre- and post-tests.
Specific criteria for exclusion was not identified due to low number of participants.

Design
Quasi-experimental with a convenience sample

Setting
A low-income subsidized apartment complex in a western Wisconsin community

Memory Enhancement Activities
Week One—Music bingo consisting of popular music from the 1920's-1950's
Week Two—Category word game consisting of associating a phrase with a letter of the alphabet
Week Three—Crossword puzzle consisting of clues from the 1930's-1950's and a word maze of common phrases from that same era
Week Four—Bingo trivia consisting of an assortment of current events, slogans, sports activities, animals and country recognition
Week Five—Three matching games consisting of states, famous people and item recognition

Results

<table>
<thead>
<tr>
<th>Participant</th>
<th>Subjective Questions</th>
<th>Face Test</th>
<th>Picture Test</th>
<th>Word List</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>After (improvement in)</td>
<td>Before</td>
<td>After</td>
<td>Before</td>
</tr>
<tr>
<td>1</td>
<td>5/6</td>
<td>5/5</td>
<td>5/5</td>
<td>3/5</td>
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<tr>
<td>2</td>
<td>2/6</td>
<td>1/5</td>
<td>1/5</td>
<td>4/5</td>
</tr>
</tbody>
</table>

Two of the original three participants completed the post-test due to a change of residency for the third participant.
Due to limited number of participants, results were inconclusive. If sample size was larger, we would anticipate results similar to the original research study, based on comments of participants who did not participate in data collection.
Participants enjoyed themselves, evidenced by their communication and laughter and verbal expressions of having fun. Memory enhancement was evident as members would point out how much they could remember from the past. Participants had opportunity to enhance memory while socializing, creating opportunities for further mind stimulation.
As time progressed participants became more engaged in the games and with each other. Because of the entertainment of the games, participants attempted to get others involved.

Limitations
Sample numbers were low so results cannot be generalized
Lack of control group
Subjective questions left open to interpretation by both participants and researchers
Convenience sample could lead to bias

Recommendations
Larger sample size is needed
Because it was difficult to interpret results due to open ended questions, use a scale of 1-5 for the subjective questions. 1 - the situation never occurs, 5 - the situation always occurs.
A control group could be utilized by asking residents not wishing to play the games to take the pre and post test.