The Effects of Cognitive Remediation on Breast Cancer Survivors Post-Chemotherapy: A Pilot Study

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INTRODUCTION

Chemotherapy is a common medical practice employed to treat breast cancer. 75% of patients who have undergone chemotherapy report cognitive impairments post treatment. The most commonly reported cognitive deficits are found in attention, executive function, verbal memory, and processing speed. Evidence suggests that cognitive remediation training can improve and alleviate the severity of these impairments.

The objective of this study is to investigate if a computerized cognitive remediation program can improve cognitive processes, depression, anxiety, and quality of life in breast cancer survivors who have received chemotherapy.

METHOD

Participants

- Total of 7 participants: 5 in experimental group and 2 in control group
- Participants were recruited through the New York University Cancer Institute
- All participants were women

Inclusion Criteria

- Had breast cancer and received chemotherapy treatment
- Between ages 18 and 65
- Free of psychiatric history
- No history of ethyl alcohol or substance abuse

Table 1. Demographics of each group

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th>Control Group</th>
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<tbody>
<tr>
<td>Mean (SD) Range</td>
<td>Age (Years)</td>
<td>51.80 (8.67) 44-61</td>
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<tr>
<td></td>
<td>Education (Years)</td>
<td>18.60 (0.93) 19-20</td>
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<tr>
<td></td>
<td>AC-T</td>
<td>n=2</td>
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<td>TC</td>
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<td>TCH</td>
<td>n=1</td>
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</tbody>
</table>

The experimental group received 40 hours of training using the Brain Fitness program over a 12 week period.

Brain Fitness Program

- Identification of sounds sweeps
- Discrimination of confusable syllables
- Recognition of sequences of syllables
- Matching pairs of confusable syllables
- Reconstruction of sequences of verbal instructions
- Identification of details in a verbally presented story

Procedure

- The control group received no intervention, but was contacted weekly by phone, over the 12 week period, to record cognitively stimulating activity.
- Both groups received the assessment 2 weeks post-chemotherapy and 12 weeks later.
- Participants were compensated with $50 at each evaluation.

Cognitive Assessment Battery

- California Verbal Learning Test - Second Edition (CVLT)
- The Paced Auditory Serial Addition Test (PASAT)
- Beck Depression Inventory - II (BDI-II)
- Beck Anxiety Inventory (BAI)
- Functional Assessment of Functional Illness - Fatigue (FACIT-F)
- Functional Assessment of Cancer Therapy - General (FACT-G)
- Functional Assessment of Cancer Therapy - Cognition (FACT-COG)

MATERIALS

- Following the computerized cognitive remediation training, the experimental group showed greater improvements than the control group on measures of verbal memory, auditory processing speed, depression, anxiety, and quality of life.
- The results indicate that cognitive based remediation training not only improve verbal memory and processing speed, but can also improve quality of life.

This pilot study provides preliminary evidence for the effectiveness of cognitive remediation training for the improvement of cognitive processes for breast cancer survivors post-chemotherapy treatment.

RESULTS

- Effect sizes were calculated by determining the mean difference between the control and experimental group evaluations for both experimental and control groups. Cohen’s d effect sizes: *Small: 0.10; **Medium: 0.30; ***Large: 0.50.

DISCUSSION

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REFERENCES


Bre Can Res and Treat, 98 (2), 485-493.


