Background

- Original project was exploring different types of fatigue in Breast Cancer patients
  - Physical Fatigue
  - Cognitive Fatigue

- Grip Strength is a physical indicator of longevity and Beck Depression Inventory (BDI) is an indicator of depressive symptoms, both of which play into a patient’s quality of life

- Studies have shown that many patients feel mentally sluggish and suffer more memory loss and confusion, known as chemobrain, following chemotherapy treatments.

- It is important to investigate the relationship between breast cancer treatment and these types of outcomes due to the increasing rates of breast cancer diagnosis.

Purpose

- To examine the relationship between different types of breast cancer treatments with physical and mental indicators of quality of life to observe if more toxic treatment methods result in a higher BDI score and a lower grip strength.

Methods

- Participant Characteristics – 46 women
  - Aged 39 to 75, with an average of 58.9 (9.1) years
  - Average length since last treatment ranged from 1 to 17 years, with a mean of 5.6 (4.9) years
  - Average BMI was 25.6 (5.0)
- Participants were brought into the lab for one visit where they were given self-report questionnaires that measured physical activity level and mood
- Grip Strength was measured by a dynamometer

Treatment Groups

- Received Chemotherapy or Radiation ever (Green 1)
- Received another type of treatment, such as surgery (Blue 2)

Variables Tested

<table>
<thead>
<tr>
<th>Grip Strength</th>
<th>BDI Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic Blood Pressure (SBP)</td>
<td>Maximum Activity Score (MAS)</td>
</tr>
<tr>
<td>Diastolic Blood Pressure (DBP)</td>
<td>Adjusted Activity Score (AAS)</td>
</tr>
<tr>
<td>Body Mass Index (BMI)</td>
<td>Time Since Last Treatment</td>
</tr>
<tr>
<td>Age</td>
<td>Computer Performance</td>
</tr>
</tbody>
</table>

Results

- The treatment group did not statistically significantly affect the physical and mental outcomes measured.
- Statistically significant correlations were found between SBP and Age, SBP/DBP and BMI, AAS and BDI, AAS and MAS, and SBP and DBP.

Discussion

- Combination of chemotherapy and radiation did not seem to affect individuals’ grip strengths nor depressive symptoms.
- Consistent with literature, we found that AAS scores were inversely related to depression scores.
  - Believed to be due to the release of monoamines (dopamine, serotonin, and noradrenalin) that accompanies physical activity which may boost mood and attention.

Limitations

- Participants who were randomized to computer performance were all categorized as Treatment Group 1, therefore no treatment comparisons could be conducted on this variable.
- Only one marker for physical and mental measurement.
- Not all participants had treatment data recorded.
- Relatively small sample size.
- Treatment groups were of unequal numbers.

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  - Believed to be due to the release of monoamines (dopamine, serotonin, and noradrenalin) that accompanies physical activity which may boost mood and attention.

Table 1. Correlation Table

<table>
<thead>
<tr>
<th>AAS</th>
<th>BDI Score</th>
<th>Grip Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS</td>
<td>r = -.328*</td>
<td>r = .246</td>
</tr>
<tr>
<td></td>
<td>p = .026</td>
<td>p = .100</td>
</tr>
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Citations: