Research in Progress: The “Narwhal-A-Saur” of Data

Quality of Life Outcomes with Creative Arts Therapy in Children with Cancer

Jennifer L. Raybin, MSN, RN, CPNP; Marilyn Krajicek, EdD, RN, FAAN; Catherine Jankowski, PhD, FACSM

Background

- Children with cancer experience distress and decreased quality of life (QOL).
- Creative arts therapy (CAT) uses art, music, and movement in a therapeutic manner that may improve QOL in children with cancer.
- In adults with cancer, CAT has improved QOL.
- Our pilot work in pediatric oncology showed trends of improved QOL with CAT.

Objectives and Methods

- **Purpose:** to examine the relationship between QOL and CAT in children with cancer
- **Hypothesis:** positive dose-response relationship
- **Design:** quasi-experimental repeated measures study
- **Sample:** oncology patients ages 2-18 yo and their parent proxy
- **Instruments:** PedsQL 3.0 Cancer Module
- **Intervention:** dose of CAT (# of sessions)

Results

- Ninety-five children with cancer (average age 6 yo, SD (4.12)) and their parent proxy were enrolled:
  - 22 participants received no CAT
  - 36 received 1-3 sessions of CAT
  - 35 received > 4 sessions of CAT
- Solid, liquid, and brain tumors were equally divided between the groups (p < .05)
- No difference between the groups on age, sex, race (p < .05)
- Analysis continues to evaluate for a dose response relationship

Limitations and Ongoing Work

- Length of follow-up is a potential confounding factor
- Plan to truncate the data (e.g. by 6 months follow-up)
- Adjust statistically for length of follow-up
- Next steps: Enter exact dates for each CAT session in order to analyze the dose received compared to the time point of the questionnaire

Preliminary Conclusions

- Cannot confirm a dose response relationship, but analysis is ongoing.
- Parent report of child QOL suggests dose response.
- Child self-report of QOL does not suggest dose response.
- No CAT was not significantly different than intervention groups, perhaps due to lack of power and selection bias.

Funding

Jennifer Raybin has received funding from American Cancer Society 133523-DSCN-19-050-01-SCN.

---

**Table 2. Baseline QOL**

<table>
<thead>
<tr>
<th>Variable Category</th>
<th>Count (% of Total Count)</th>
<th>Count (% of No visits)</th>
<th>Count (% of Low visits)</th>
<th>Count (% of High visits)</th>
<th>p for Low vs. No visits</th>
<th>p for High vs. No visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Education</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
</tbody>
</table>

---

**Table 1. Demographics**

<table>
<thead>
<tr>
<th>Variable Category</th>
<th>Count (% of Total Count)</th>
<th>Count (% of No visits)</th>
<th>Count (% of Low visits)</th>
<th>Count (% of High visits)</th>
<th>p for Low vs. No visits</th>
<th>p for High vs. No visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Cultivar</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>6 (25.0%) 9 (37.5%) 7 (29.2%)</td>
<td>1 (4.2%) 1 (2.9%) 0 (0%)</td>
<td>4 (16.7%) 5 (16.7%) 5 (21.7%)</td>
<td>1 (3.7%) 3 (9.4%) 2 (8.3%)</td>
<td>0.0712 0.8918 0.2304</td>
<td></td>
</tr>
</tbody>
</table>

---

**Figure 1. Mean QOL Response Profile for Child Report**

**Figure 2. Mean QOL Response Profile for Parent Report**

---

**Within group change**

- Between group difference in change
- p for Low vs. No
- p for High vs. No