Weighted Blanket Versus Traditional Perioperative Practices on Anxiety and Pain in Elective Surgery Patients: A Randomized Controlled Trial

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Weighted blankets reduce anxiety in adult surgical patients with moderate to high levels of preoperative anxiety. This provides a simple yet effective nurse-driven intervention for anxiety reduction.

**Introduction**

Perioperative anxiety is common in surgical patients and has been linked to poor patient outcomes.

A weighted blanket may offer an alternative or enhancement of anti-anxiety medications by activating a physiological response through the vagal system.

This response successfully decreases anxiety and agitation in other patient populations but had not been studied in this population.

This randomized study assessed the effectiveness of a weighted blanket for the reduction of presurgical anxiety and pain as well as post-surgical restlessness and nausea.

**Methodology**

- Convenience sample of 149 patients at ambulatory surgical units at five community hospitals and two units at a regional medical center
- Randomized: Interventional group (weighted blanket, n = 74) or control group (n = 74)
- Interventional group: warmed weighted blanket for a minimum of 15 ± 5 minutes
- Control group: non-weighted blanket (warmed/room temperature), sheet, or no covering
- 34" x 62" medical-grade blanket by CapeAble® Care. Total weight = 8.5 pounds
- Pre-op vital signs and Visual Analog Scale (100-point scale) for anxiety and pain measured before and 15 ± 5 minutes post intervention/control
- In post-anesthesia care unit, warmed weighted blanket replaced on the interventional group or warmed non-weighted blanket/s for the control group
- At 15 ± 5 minutes, evidence of nausea or vomiting documented and RASS score calculated to measure postoperative restlessness

**Results**

- No significant demographic differences were found between control or intervention groups for gender, age, weight, type of surgical procedure, or admission characteristics.
- Intervention group showed significantly lower anxiety scores as compared to control group, t (141.92) = 2.68, p = .008
- No significant changes were found for pain, restlessness, or in the physiological indicators of stress: heart rate, blood pressure, and respiration rate.
- The intervention becomes more effective as the level of admission anxiety increases.

**Table 1. Participant characteristics**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Gender</th>
<th>Race</th>
<th>Weight (lbs)</th>
<th>Type of Surgery</th>
<th>Admission Anxiety</th>
<th>Post-op Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>Male</td>
<td>White</td>
<td>150</td>
<td>General Surgery</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>25-30</td>
<td>Female</td>
<td>Black</td>
<td>170</td>
<td>Orthopedic</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>31-35</td>
<td>Male</td>
<td>Asian</td>
<td>180</td>
<td>Thoracic</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

**Figure 1. Predicted 15 minute anxiety score based on level of admission anxiety and intervention group status.**

**Table 2. Descriptive statistics on study variables and comparisons between intervention and control groups**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Median (IQR)</th>
<th>t (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>59.65 (24.2)</td>
<td>15.15 (10.3)</td>
<td>-6.24</td>
<td>.001</td>
</tr>
<tr>
<td>Pain</td>
<td>10.20 (20.2)</td>
<td>0.50 (1.5)</td>
<td>-1.50</td>
<td>.200</td>
</tr>
<tr>
<td>Restlessness</td>
<td>5.30 (2.5)</td>
<td>5.00 (1.0)</td>
<td>0.50</td>
<td>.600</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>120 (20)</td>
<td>115 (15)</td>
<td>0.50</td>
<td>.600</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>72 (10)</td>
<td>70 (15)</td>
<td>0.50</td>
<td>.600</td>
</tr>
<tr>
<td>Temperature</td>
<td>98.6 (0.9)</td>
<td>98.5 (0.8)</td>
<td>0.50</td>
<td>.600</td>
</tr>
</tbody>
</table>

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