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The Acute Impact of Relaxation Techniques on Student Psychological and Physiological Health

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The Acute Impact of Relaxation Techniques on Student Psychological and Physiological Health

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Background
- The Accreditation Council for Pharmacy Education mandated measurement of perceived stress in Student Pharmacists, specifically potential negative impacts on learning experiences and morale.
- Relaxation techniques have been shown to increase:
  - Stress relief and relaxation
  - Emotional regulation and attention
  - Self esteem and optimism
- This study investigates the acute impact of relaxation techniques on student psychological and physiological well-being.

Objectives
- **Primary outcomes:** To compare changes from pre- to post-treatment measures (perceived stress, anxiety, and evaluation of techniques) between intervention (relaxation) and control (non-relaxation) techniques.
- **Secondary outcomes:** To compare the effect of each treatment on these measures.

Methods
- **Population:** 85 Student Pharmacists (51 females and 35 males) were recruited from P1, P2, and P3 years from the SWOSU College of Pharmacy. Demographic analysis revealed gender was not a significant factor (P > 0.05) in research outcomes.
- **Treatments used to measure primary and secondary outcomes:**
  - **Three relaxation interventions (n = 48):**
    - Body Scan Meditation (n = 16) – Systematically relaxing muscles
    - Mindfulness Meditation (n = 16) – Focusing on the sound of a bell
    - 4 x 4 Meditation (n = 18) – Counting breaths
  - **Two non-relaxation controls (n = 38):**
    - Power Posing (n = 19) – Holding an open pose
    - Mental Stimulation (n = 19) – Playing Word Streak App

Protocol:
- **Pre:** Measure baseline per pre and post measures
- **Relax:** Conduct Relaxation or Non-Relaxation Technique (8 to 10 min)
- **Post:** Measure post per pre and post measures

**Survey questions:**
- Perceived stress, anxiety, and technique opinions
- Collect saliva sample
- Record physiological measures (HR, RR, tension, temperature)

Analysis:
- Survey data were analyzed utilizing descriptive statistics, dependent t-tests for overall pre- to post-treatment comparisons, and MANOVA for primary and secondary outcome analysis using pre-treatment responses as covarates (IBM SPSS Advanced Statistics, version 21).
- Time did not permit analysis of salivary samples for cortisol and alpha-amylase or changes in physiological measures.
- We expect relaxation techniques to lower post-treatment stress and anxiety levels more than controls. Accordingly, we expect subjects will have improved perceptions toward conducting relaxation techniques.

Descriptive Statistics:

Results

Table 1. Comparison of Pre-treatment Mean Ratings for Survey Responses.

<table>
<thead>
<tr>
<th>Survey Response</th>
<th>Body Scan</th>
<th>Mindfulness</th>
<th>4 x 4</th>
<th>Power Posing</th>
<th>Mental Stimulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Stress</td>
<td>3.5 ± 0.89</td>
<td>3.2 ± 0.80</td>
<td>3.3 ± 0.95</td>
<td>3.2 ± 0.97</td>
<td>3.3 ± 0.90</td>
</tr>
<tr>
<td>Perceived Anxiety</td>
<td>1.6 ± 0.48</td>
<td>1.6 ± 0.44</td>
<td>1.5 ± 0.44</td>
<td>1.6 ± 0.44</td>
<td>1.5 ± 0.40</td>
</tr>
<tr>
<td>Emotional Regulation</td>
<td>4.1 ± 0.49</td>
<td>4.2 ± 0.47</td>
<td>4.0 ± 0.49</td>
<td>4.1 ± 0.45</td>
<td>4.2 ± 0.47</td>
</tr>
</tbody>
</table>

Conclusions
- Student Pharmacists reported academics as the primary cause of stress, and very few reported using meditation to reduce stress prior to this study.
- When comparing individual treatments, two relaxation techniques (Mindfulness and Body Scan Meditation) and one control (Power Posing) were rated by Student Pharmacists as easiest to conduct, most liked, and most likely to cause relaxation.
- Although we found no significant differences when comparing individual treatments for future use or recommendation of these techniques, statistical evidence suggests Student Pharmacists had beneficial changes overall in stress, anxiety, and opinions regarding relaxation techniques.
- Future research will evaluate how relaxation impacts physiological measures.

References