Relax! It’s only Simulation: The Use of Autogenic Training to Reduce Anxiety and Improve Performance in Nursing Simulation

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Learning Objectives

• Understand theoretical models of performance and how anxiety influences performance outcomes
• Understand the use of autogenic training as an effective method to reduce anxiety
• Translate interventions and methods to reduce anxiety and enhance performance within simulation testing environments
Overview

• Study development and research team
• Introduction
  – Lack of clinical sites (Casida & Shpakoff, 2012)
  – Observation and anxiety (Beischel, 2013; Nielsen & Harder, 2013)
  – Anectodal information from students
• Applied interdisiplinary focus of study
  – Anxiolitic effect of autogenic training (Mazoni, Pagnini, & Gianluca, 2008)
Theoretical Framework

• Social Cognitive Theory (Bandura, 1986)
  – Individual, behavioral, and environmental factors

• Self-efficacy (Bandura, 1997)
  – Sources
  – Anxiety-self-efficacy-performance continuum

• Inverted U Model (Yerkes & Dodson, 1908)
  – Association between arousal and performance
Sources of Self-Efficacy

- Enactive Mastery (Performance outcomes)
- Vicarious Experience (ex. Self-modeling)
- Verbal Persuasion (ex. Verbal encouragement)
- Physiological Arousal (ex. Emotional state)

Development of Self-Efficacy

Behavior & Performance
Yerkes-Dodson Law

- Optimal Performance
- Low Arousal
- High Performance
- Low Arousal
- High Performance
Research Questions

• Will students undergoing a thirty-minute autogenic intervention experience less anxiety, as assessed by the State-Trait Anxiety Inventory, mean arterial pressure (MAP), and heart rate, than students in a control condition?

• Will students undergoing the autogenic intervention receive higher instructor-rated performance on clinical skills and improved self-efficacy scores than students in the control condition?
Methods

• Randomized control-group pretest-posttest design

• Non-probability sample of second degree accelerated BSN students ($N = 53$)
  – $M_{age} = 22.71$, SD = 3.40;
  – Majority were female ($n = 50$, 94.3%);

• Random Assignment into Control ($n = 26$) or AT Intervention ($n = 27$) condition
Instruments and Dependent Variables

• Anxiety
  – State Trait Anxiety Scale (Marteau, & Bekker, 1992)
  – MAP and HR

• Self-Efficacy
  – General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995)
  – ICC for three raters = 0.95; 95% CI [0.87 – 0.97]; Cronbach’s coefficient alpha = 0.78

• Performance
  – The Nursing Simulation Performance Scale (NSPS)
  – CVI = 0.97; ICC = 0.92; Cronbach’s α = 0.89 (Gosselin, Holland, & Mulcahy, 2015)
# Example Schedule and Activities for Participants

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800-0805</td>
<td>Random assignment into control or autogenic training (AT) conditions</td>
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<tr>
<td></td>
<td>Pulse and blood pressure were assessed along with administration of the State Trait Anxiety and General Self-Efficacy Scales</td>
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<tr>
<td>0805-0835</td>
<td>Participation in control or AT conditions</td>
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<tr>
<td>0835-0840</td>
<td>2nd collection of pulse rate, blood pressure, and survey data</td>
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<tr>
<td>0840-0910</td>
<td>Simulation and performance evaluations conducted from instructors</td>
</tr>
<tr>
<td>0910-0920</td>
<td>Debrief and collection of performance evaluation data</td>
</tr>
</tbody>
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Intervention

• Autogenic training track
  – Soft, slow background music
  – Female voice guiding the participant
  – Progressive body relaxation
  – Noise cancelling headphones
  – Eye mask
Intervention Protocol
Results

• The results of the first MANOVA to evaluate intervention effectiveness on anxiety (MAP, pulse, and STA), self-efficacy, and performance demonstrated a significant main effect, $F(3, 49) = 12.98, p < .000$, Wilk's $\Lambda = .557$, $\eta^2 = .44$. 
Results

- Contrasts revealed that pulse rate was significantly lower in the experimental group ($M = 73.33$, $SD = 12.94$) compared with the control condition ($M = 83.38$, $SD = 10.30$), $F (1, 51) = 9.74$, $p = .003$, $\eta^2 = .16$. 
Results

• The results of the second MANOVA to assess the effectiveness of autogenic relaxation on performance and self-efficacy was significant, $F(2, 50) = 3.86, p = .028$, Wilk's $\Lambda = .867$, $\eta^2 = .13$. 
Results

• Post-hoc comparisons revealed no differences on self-efficacy scores ($p = .808$). The experimental group had significantly higher mean ratings ($M = 44.32$, $SD = 3.27$) than the control group ($M = 41.32$, $SD = 4.03$) on performance, $F(1,51) = 7.87$, $p = .007$, $\eta^2 = .13$. 
Discussion

• Overall, the study hypotheses were partially supported

• Significant reduction in anxiety with improved performance

• No differences found in self-efficacy
Discussion

• AT can be used to facilitate an improved learning environment through anxiety reduction

• Gain a more accurate assessment of student performance
Limitations and Future research

- Single site
- Longitudinal designs needed
- Multi-site studies
References

Questions?