Guided Imagery and Stress in Pregnant Adolescents

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Introduction

- Chronic maternal stress can negatively impact birth outcomes including the physical, cognitive, and psychological development of a child with effects lasting throughout their lifespan. 1
- Pregnant teens are likely to experience high levels of stress due to economic strain, family stress, risk of medical complications, decreased peer social supports, and interrupted development 2 as well as the dual role change of child/daughter to adult/mother. 3
- Support services for pregnant teens are limited and there are few interventions addressing pregnant teens’ unique stressors.
- Guided imagery is a low cost, easily accessible relaxation technique that effectively reduces stress in pregnant adult women 4 but has not been studied in pregnant adolescents.

Purpose

To examine the effects of guided imagery on perceived psychological stress in pregnant adolescents over time.

Hypothesis

A guided imagery intervention will reduce stress in pregnant adolescents.

Research Design & Methods

Design

Quasi-experimental, one-way repeated measures

Participants

Thirty-five pregnant females aged 14 to 19 (M=16.57, SE=1.17) were recruited in waves from a local alternative education program during the 2012-2013 and 2013-2014 academic school years.

Measure

The Psychological Stress Measure-9 (PSM-9) is a 9-item questionnaire using a 1-8 Likert scale to measure current level of perceived stress was given as a pretest and posttest before and after each guided imagery listening session.

Procedures

Participants listened to a 12 min 51 sec pregnancy-specific guided imagery recording on 4 separate occasions in the alternative education classroom during their pregnancies.

Data Analysis

A 2 (pre/post) by 4 (session number) within subjects repeated measures ANCOVA was used with duration of the intervention (M=23.89, range: 7-44 DAYS) as a covariate and post-hoc pairwise comparisons with least significant difference.

- Independent Variable: Time
- Dependent Variable: Perceived Psychological Stress

Results

- Significant main effects were found for within session change in stress, F(3,31) = 13.10, p = .001, η²_p = .284 as well as between session change in stress, F(3,31) = 3.67, p = .023, η²_p = .262.
- There was no significant interaction effect between within session and between session changes in stress.
- There was a significant reduction in stress from pretest PSM-9 scores (M=29.56, SE=1.36) to post-test PSM-9 scores (M=23.35, SE=1.01), p < .001.

![Figure 1: Perceived Stress Pre/Post Measures by Session](image)

Table 1: Descriptive Statistics of Pairwise Comparisons Within Sessions

<table>
<thead>
<tr>
<th>Session</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Pre</td>
<td>10.03</td>
<td>1.43</td>
<td>&lt;.001*</td>
<td>5.19 14.87</td>
</tr>
<tr>
<td>2-Pre</td>
<td>6.09</td>
<td>1.19</td>
<td>&lt;.001*</td>
<td>2.06 10.11</td>
</tr>
<tr>
<td>3-Pre</td>
<td>5.20</td>
<td>1.02</td>
<td>&lt;.001*</td>
<td>1.76 8.64</td>
</tr>
<tr>
<td>4-Pre</td>
<td>3.54</td>
<td>1.21</td>
<td>.168</td>
<td>-0.55 7.64</td>
</tr>
</tbody>
</table>

*The mean difference is significant at the .05 level.

Table 2: Descriptive Statistics of Pairwise Comparisons Between Pre Session PSM-9 Scores

<table>
<thead>
<tr>
<th>Session</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1.43</td>
<td>.019*</td>
<td>0.62 6.41</td>
</tr>
<tr>
<td>1 3</td>
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<td>1.58</td>
<td>.001*</td>
<td>2.52 8.96</td>
</tr>
<tr>
<td>1 4</td>
<td>5.97</td>
<td>1.70</td>
<td>.001*</td>
<td>2.52 9.43</td>
</tr>
<tr>
<td>2 3</td>
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<td>1.33</td>
<td>.103</td>
<td>-0.48 4.93</td>
</tr>
<tr>
<td>2 4</td>
<td>2.46</td>
<td>1.34</td>
<td>.075</td>
<td>-0.27 5.18</td>
</tr>
<tr>
<td>3 4</td>
<td>0.23</td>
<td>1.42</td>
<td>.873</td>
<td>-2.67 3.12</td>
</tr>
</tbody>
</table>

*The mean difference is significant at the .05 level.

Conclusions

- Pregnant teens experienced short-term and long-term stress reductions during a guided imagery intervention, with effects diminishing over time.
- The largest short-term reduction in stress occurred within the first listening session and decreased within each subsequent session.
- Stress was cumulatively reduced across the four listening sessions with the largest change occurring between sessions 1 and 2. The amount of stress reduced between each session also diminished over time.
- External supports offered by the alternative education program may have contributed to the decrease in stress observed over time in this study.

Future Research

Future studies should strive to create a more controlled environment, consider the timing of participants’ admission to the alternative education program, and include additional demographic information such as maternal age, gestational stage, race/ethnicity, and socio-economic status.

Implications for Practice

- Stress reduction during pregnancy can positively support the development of mother and child with effects lasting into adulthood.
- A guided imagery intervention to reduce stress may be a useful component of a larger program promoting wellness in pregnant adolescents.
- Occupational Therapists can apply their expertise in lifespan development as part of an interdisciplinary team working with pregnant adolescents in schools and other support programs in order to nurture health and well-being in a mother-child dyad where both generations are in the pediatric stages of development.

References


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