FOCUSED QUESTION
Is the Alert Program effective in improving sensory processing, self-regulation, and behavioral adjustment skills in children with emotional disturbance in classroom settings?


CLINICAL BOTTOM LINE:
The Alert Program is one of the most popular occupational therapy interventions for children with emotional disturbance, even though there is limited research to support its effectiveness. The Alert Program helps children become self-aware of emotions and behaviors and apply self-regulation strategies. This study consisted of an 8-week Alert Program intervention compared to standard educational programming using a quasi-experimental pretest–posttest design. Subjects included 12 students enrolled in classrooms for students with emotional disturbance. Therapists and teachers were responsible for implementing the use of the different interventions in the classroom. Results showed that intervention group subjects had a small improvement in scores from pretest to posttest, while the control group subjects had a small decrease in scores. This study demonstrated that there is potential in using the Alert Program as an effective occupational therapy intervention for children with emotional disturbance. The authors showed an occupational therapist educating teaching staff on the Alert Program self-regulation strategies and the two collaborating can lead to positive results for children with emotional disturbance in the classroom. Occupational therapy can play a valuable role in educating teaching professionals to become more aware of a child’s needs in regards to self-regulation through the Alert Program and further incorporate those strategies into the classroom.

RESEARCH OBJECTIVE(S)
List study objectives.
The purpose of this study was to evaluate the effectiveness of the Alert Program in educating children with emotional disturbance to regulate emotions, behaviors, and sensory processing.

DESIGN TYPE AND LEVEL OF EVIDENCE:
Level II: Non-randomized groups
Limitations (appropriateness of study design):

**Sample:** The sample was small, but fitting due to the lack of prior research on the topic.

**Knowledge on Topic:** There are few studies that demonstrate effectiveness of the Alert Program as an occupation therapy intervention for children with emotional disturbance.

Was the study design type appropriate for the knowledge level about this topic?  

**YES / NO** Few studies of the Alert Program intervention provide statistically analyzed results; therefore, as a preliminary study, the design was fitting. Outcomes from this study may lead to further studies with a larger sample size and more rigorous design.

**SAMPLE SELECTION**

How were subjects selected to participate? Please describe.

It was not reported how the classrooms for students with emotional disturbance were selected for the study; however, each of the students met the Individuals with Disabilities Education Improvement Act’s definition of emotional disturbance.

**Inclusion Criteria**

Subjects could only be included if they fit the classification of emotional disturbance and were being educated in one of the classrooms for children with emotional disturbance selected for the study.

**Exclusion Criteria**

Not reported

**SAMPLE CHARACTERISTICS**

\( N = 12 \)

<table>
<thead>
<tr>
<th>% Dropouts</th>
<th>Not reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>#/ (%) Male</td>
<td>10 (83.33%)</td>
</tr>
<tr>
<td>#/ (%) Female</td>
<td>2 (16.67%)</td>
</tr>
</tbody>
</table>

**Ethnicity**

Caucasian, African American, Hispanic

**Disease/disability diagnosis**

Subjects were classified under the Individuals with Disabilities Education Improvement Act’s definition of emotional disturbance.
In addition, each of the children took 1–5 medications for emotional disturbance. The majority of children’s scores for Intelligence Quotient were between 77 and 123; however, one child scored a 57.

Check appropriate group:

<table>
<thead>
<tr>
<th>&lt;20/study group</th>
<th>20–50/study group</th>
<th>51–100/study group</th>
<th>101–149/study group</th>
<th>150–200/study group</th>
</tr>
</thead>
</table>

INTERVENTION(S) AND CONTROL GROUPS

**Group 1: Intervention Group**

<table>
<thead>
<tr>
<th>Brief Description</th>
<th>The intervention group received 8 weeks of Alert Program intervention guided by the program manual. Cognitive and sensory aspects of the Alert program were used to promote regulation of emotions, behaviors, and sensory processing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>Two classrooms containing children with emotional disturbance</td>
</tr>
<tr>
<td>Who Delivered?</td>
<td>Two authors of the study were assigned to provide Alert Program intervention to the two classrooms. Teachers and classroom assistants aided in the Alert Program intervention in addition to integrating Alert Program methods into classroom activities.</td>
</tr>
<tr>
<td>Frequency?</td>
<td>Intervention occurred three times a week for 3 weeks then “decreased by one session every 2 weeks” (Barnes, Vogel, Beck, Schoenfeld, &amp; Owen, 2008, p. 376).</td>
</tr>
<tr>
<td>Duration?</td>
<td>8 weeks</td>
</tr>
</tbody>
</table>

**Group 2: Control Group**

<table>
<thead>
<tr>
<th>Brief Description</th>
<th>The control group received 8 weeks of standard educational programs provided by two authors of the study. Standard educational program components were not specified.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>Two classrooms containing children with emotional disturbance</td>
</tr>
<tr>
<td>Who Delivered?</td>
<td>Two authors of the study were assigned to provide standard educational programming to the two control classrooms.</td>
</tr>
<tr>
<td>Frequency?</td>
<td>Intervention occurred three times a week for 3 weeks then “decreased by one session every 2 weeks” (Barnes et al., p. 376).</td>
</tr>
<tr>
<td>Duration?</td>
<td>8 weeks</td>
</tr>
</tbody>
</table>

**Intervention Biases:**

Contamination

Yes/No
Co-intervention

**YES/NO**

Children in the intervention and control groups were taking 1–5 medications that were not regulated by the researchers of the study. It was not reported if any children were receiving services outside of school that could have influenced the data reported in this study.

Timing

**YES/NO**

Site

**YES/NO**

Use of different therapists to provide intervention

**YES/NO**

The four authors of the study were occupational therapists and provided the treatment. Two authors worked with the intervention group and two worked with the control group.

MEASURES AND OUTCOMES

Complete for each relevant measure when answering the evidence-based question:

Name of measure, what outcome was measured, whether the measure is reliable and valid (as reported in article – yes/no/NR [not reported]), and how frequently the measure was used.

**Sensory Profile:** The Sensory Profile is a 125-item standardized instrument for children ages 5-10 designed to measure sensory processing abilities. Reliability and validity were not reported. The Sensory Profile was administered 2 weeks before intervention and again after intervention.

**Devereux Behavior Rating Scale (DBRS) (BRS)-School Form:** The DBRS is a standardized assessment for children ages 5–18 that assesses factors that may contribute to inappropriate behaviors, which also may be displayed by youth with emotional disturbance. Reliability and validity were not reported. The DBRS was administered 2 weeks before intervention and again after intervention.

**Self-Efficacy for Self-Regulation of School-aged Children (SESR-C):** This 31-item checklist assessment is given to children to determine how effective they perceive themselves in self-regulation. Relevance and importance were evaluated by 12 occupational therapists who work with youth with emotional disturbance. Youth outside of the study gave feedback for readability and understanding. Intraclass correlation coefficient measures were .75 in relevancy and .80 in importance, which suggests content validity. Interrater reliability was 98.7%. This measure was administered 2 weeks before intervention and again after intervention.

**Teacher’s Perception of Student’s Efficacy in Self-Regulation (ESR-T):** This 31-item checklist assessment is used to gather information about how effective teachers feel the children
are in regulating behaviors. Relevance and importance were evaluated by 12 occupational therapists who work with youth who are emotionally disturbed. Intraclass correlation coefficient measures were .75 in relevancy and .80 in importance, which suggests content validity. Interrater reliability was 98.7%. This measure was administered 2 weeks before intervention and again after intervention.

Measurement Biases
Were the evaluators blind to treatment status?

YES/NO

Recall or memory bias.

YES/NO This study utilized student self-report and teacher report measures; therefore, there is potential for bias. The student or teacher may not have accurately remembered performance at pretest or posttest. There is also the potential for the student or teacher wanting the outcomes to be favorable, thus influencing the outcome of the study.

Others (list and explain):

The SESR-C and ESR-T were created specifically for this study and could have questions that may have led to biased results.

RESULTS
List results of outcomes relevant to answering the focused question
Include statistical significance where appropriate (p<0.05)
Include effect size if reported

The Sensory Profile teacher response average scores for the intervention group demonstrated small changes between pretest and posttest scores after the use of the Alert Program. The pretest and posttest results from the DBRS showed that all individuals from the control group had improved scores, with the exception of one individual. From the intervention group, only two children had improved scores that were statistically significant (p = .10). Additionally, the child with decreased scores also had statistical significance (p = .10). The children from the control group had decreased posttest scores, with four children having statistically significant (p = .10) decrease in scores from pretest to posttest with the DBRS. The SESR-C and ESR-T pretest and posttest results showed that 9 out of 12 children rated themselves higher than the ratings given by teachers. Additionally, teacher posttest ratings improved for the intervention group, while they decreased for the control group. Group effect for child self-ratings showed that the control group generally rated themselves higher than those in the intervention group. The group effect for teacher ratings was significant (p = .04) and had a large effect size. Additionally, teachers rated the control group lower on both pretest and posttest. The inspection of the cell mean displayed that teacher ratings for the intervention group increased from pretest (3.2) to posttest (3.5), while the control group inspection of the cell mean decreased from pretest (2.5) to posttest (2.2).
Was this study adequately powered (large enough to show a difference)?

YES/NO  The study was exploratory with a small sample size; therefore, there was weak statistical power. Due to this, it was difficult to detect whether or not the treatment was effective.

Were appropriate analytic methods used?

YES NO  An ANOVA was completed to evaluate the results of the SESR-C and ESR-T. Standard scores and significance levels were determined using the manual for the DBRS. Results for the Sensory Profile were determined by finding the mean of the scores.

Were statistics appropriately reported (in written or table format)?

YES NO  Statistics were reported in both table and written format.

CONCLUSIONS

State the authors’ conclusions that are applicable to answering the evidence-based question.

The use of the Alert Program as an intervention in the classroom for children with emotional disturbance demonstrates potential. In each of the measures, the intervention group had more improvements compared to the control group. However, because there were such small changes in the data from pretest to posttest, this study represents groundwork data. Future research with a larger, more diverse sample is needed to determine whether the Alert Program truly has an effect on regulation of emotions, behaviors, and sensory processing in children with emotional disturbance.

This work is based on the evidence-based literature review completed by Nicolet Sadlowsky, MOTS, and Sarah Nielsen, PhD, OTR/L, Faculty Advisor, University of North Dakota.


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