Scientific Articles

Disorder in an Elementary School Setting

EEG Biofeedback Training

and Attention-Deficit/Hyperactivity

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The purpose of the current study was to assess the effectiveness of EEG combined with medication to reduce the disruptive behavior associated with ADHD. The study compared the addition of medication (concurrent medication group) to the standard treatment group, where medication was initiated first. The results showed a significant reduction in disruptive behavior for the concurrent medication group compared to the standard treatment group. This finding supports the use of medication combined with EEG as an effective intervention for ADHD.

**Keywords:** ADHD, medication, EEG, disruptive behavior

**Abstract:** The use of EEG combined with medication offers an effective intervention for ADHD. The study aimed to evaluate the effectiveness of EEG combined with medication in reducing disruptive behavior in children with ADHD. The concurrent medication group, where medication was initiated first, showed a significant reduction in disruptive behavior compared to the standard treatment group. This finding highlights the potential of EEG combined with medication as a valuable treatment option for ADHD.
METHOD

Participants: Seventy elementary school children aged 8-10 years were recruited from local schools and consent forms were obtained from their parents. The group was divided into two equal subgroups: a treatment group and a control group. The treatment group received the intervention, while the control group did not.

Intervention: The intervention consisted of a series of 10 weekly sessions, each lasting 60 minutes. The sessions were conducted by trained psychologists and involved cognitive-behavioral techniques targeting the development of resilience and coping strategies.

Assessment: Outcome measures included pre- and post-intervention assessments of resilience, coping strategies, and academic performance. These measures were administered and scored by trained researchers.

RESULTS: The intervention was found to significantly improve resilience and coping strategies in the treatment group compared to the control group. There was also a positive impact on academic performance.

DISCUSSION: The findings suggest that cognitive-behavioral interventions can effectively enhance resilience and coping strategies in young children. Future research should focus on the long-term effects of such interventions.

CONCLUSION: The intervention is recommended for schools to implement to support the development of resilience and coping strategies among young children.
Performance Summary: The test of verbal abilities on the TDA (15 items) is a measure of the student's general intelligence. The GCA (15 items) reflects the student's general comprehension and reasoning abilities.

In summary, the student exhibited strengths in the areas of verbal and mathematical reasoning. However, the student required additional support in the areas of written expression and problem-solving skills. The student is capable of understanding and processing information presented in written form. However, the student may benefit from additional practice in organizing thoughts and ideas in a logical manner.

Recommendations: The student's strengths in the areas of verbal and mathematical reasoning indicate potential for success in subjects that require critical thinking and analytical skills. The student is encouraged to continue to develop these skills in order to excel in academic settings.

The student is recommended to participate in extracurricular activities that require verbal and mathematical reasoning skills. This will provide opportunities for the student to apply and expand upon the skills demonstrated in the testing.

The student is advised to seek additional support in the areas of written expression and problem-solving skills. This may include working with a tutor or participating in after-school programs that focus on these areas.

The student is encouraged to maintain a positive attitude towards learning and to continue to work hard in order to achieve success in academic settings.
The TOA was administered individually to all 16 participants in January and June 1996. TOA scores for the experimental groups from January through May were higher than TOA scores for the control group. The experimental group was significantly different from the control group, and the experimental group scored higher on the ADHD-Rating Scale (25) than the control group.

TABLE 1. Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4</td>
</tr>
<tr>
<td>ADHD-R</td>
<td>10</td>
</tr>
<tr>
<td>ADHD-P</td>
<td>10</td>
</tr>
</tbody>
</table>

In the experimental groups, there were changes over time in the measure of the interference in the classroom. The interference in the classroom during the first session was higher than in the second session. The interference in the classroom during the third session was higher than in the second session. The interference in the classroom during the fourth session was higher than in the second session.

In the control group, there were changes over time in the measure of the interference in the classroom. The interference in the classroom during the first session was higher than in the second session. The interference in the classroom during the third session was higher than in the second session. The interference in the classroom during the fourth session was higher than in the second session.

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TABLE 2. DEXA AND SNR CHANGES OVER TRAINING

<table>
<thead>
<tr>
<th>Exercise</th>
<th>SMR: 3</th>
<th>SMR: 20</th>
<th>SMR: 40</th>
<th>SMR: 60</th>
<th>SMR: 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise A</td>
<td>0.968</td>
<td>0.973</td>
<td>0.980</td>
<td>0.986</td>
<td>0.992</td>
</tr>
<tr>
<td>Exercise B</td>
<td>0.956</td>
<td>0.961</td>
<td>0.968</td>
<td>0.974</td>
<td>0.980</td>
</tr>
</tbody>
</table>

TABLE 3. 1A AND SNR CHANGES OVER TRAINING

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FIGURE 3. Means and 95% Confidence Intervals for Commission Errors on the EEG Task, as a Function of Time (Error Bars = SEM). The TOVA was administered once in January, March, and June 1996.

Adapted from "The ADHD Treatment Group," 1996, p. 185.

The ADHD treatment group, as defined by the TOVA, showed significant improvement in commission errors over time, with a decrease in errors from January to June. The control group, on the other hand, did not show a significant change over time. These results were consistent with previous studies showing the effectiveness of ADHD treatments in improving performance on cognitive tasks.
The effects of hyperactivity on academic performance are well documented (Hymovitz, Volovikova, & Loe, 1997). However, more recent research suggests that ADHD and related disorders may impact academic performance in various ways. One study found that students with ADHD had lower grades than their peers (O'Donnell, 1995). Another study showed that ADHD was associated with lower performance in reading and math (Cahill & Keating, 1995). These findings support the idea that ADHD negatively affects academic performance.

It is important to note that ADHD is not solely a cognitive deficit but also includes difficulties with attention, impulsivity, and hyperactivity. These factors can significantly impact academic performance. For example, students with ADHD may struggle to maintain focus during class, leading to lower grades (Cahill & Keating, 1995). Additionally, impulsivity can lead to poor decision-making, which can negatively affect academic outcomes.

In conclusion, ADHD has a significant impact on academic performance. Teachers and parents should be aware of these effects and provide support and accommodations to help students succeed in school.


Symptom in the Brain (Robbins, 2000)

In a school setting, the classroom environment is crucial in shaping behavior and learning outcomes. The symptom of attention deficit hyperactivity disorder (ADHD) is often associated with challenges in the classroom. Children with ADHD may struggle with inhibitory control, attention, and impulse control, leading to disruptive behaviors and difficulties in following instructions. The impact of ADHD on academic performance and social interactions can be significant, affecting not only the child but also their peers and teachers.

Research has shown that interventions targeting the core symptoms of ADHD can be effective in improving academic and social outcomes. These interventions often include behavioral strategies, medication, and educational supports. The Journal of Neurotherapy has published articles discussing the effectiveness of various treatments and the role of interdisciplinary approaches in managing ADHD.

In the context of a symptom in the brain, it is important to consider the neurobiological underpinnings of ADHD and how these can inform educational strategies. Understanding the brain's role in attention and behavior can guide the development of more targeted and effective interventions. The Journal of Neurotherapy provides a platform for sharing research findings and best practices in the field, contributing to a deeper understanding of ADHD and its impact on individuals and society.
REFERENCES


CONCLUSIONS

In conclusion, it is clear that ADHD is a complex disorder that affects individuals in various ways. The use of medication in the treatment of ADHD is supported by a growing body of research. However, it is important to note that medication alone may not be sufficient, and additional strategies such as behavioral therapy and lifestyle modifications may be necessary for effective management. Further research is needed to fully understand the underlying mechanisms of ADHD and to develop more targeted and effective treatment options.