Introduction

Children and adolescents with disruptive behaviors experience functional impairment such as academic underachievement, social isolation, and low peer interactions. Research suggests that this is especially true for children who meet criteria for both attention-deficit/hyperactivity disorder (ADHD) and conduct disorder (CD). Huntington (1997) and Waxwibusch (2002) more recently suggested that this group can be further divided based on callous-unemotional traits (C/U traits) and hyperactivity-impulsivity (HI) traits. Children with ADHD/CP who meet criteria for both disorders demonstrate differences in measures such as negative emotional states, levels of empathy, and the absence of guilt or remorse. These and other findings suggest that ADHD/CP children with or without C/U traits may also differ in their response to treatment but this question has not been well studied. Two published studies exploring this question found that there was no difference in children with ADHD who met criteria for conduct disorder or conduct disorder (Hanson & Dadds, 2005; Waxwibusch et al., 2007). The purpose of this study is to examine responses to treatment in ADHD/CP children with varying levels of C/U traits. Due to the exploratory nature of this research, it was hypothesized that treatment gains would be represented in a linear fashion with those who have the least C/U traits demonstrating the most treatment gains and those with the highest C/U traits demonstrating the least amount of treatment gains in the context of a Summer Treatment Program (STP). Recent findings suggest that C/U traits are inversely related with peer dislike ratings but not related with peer like ratings (Patterson & Insko, 2004). This study intends to replicate and extend these findings.

Methods

Participants. 93 children (ages 7 through 13) attended an 8-week, Summer Treatment Program (STP) at Dalhousie University (Halifax, Nova Scotia) in 2001, 2002, or 2003. Participants met criteria as ADHD and Conduct Problems (CP). In total, 22 children were diagnosed with ADHD and 71 children with ADHD/CP. 20 children did not meet criteria for any diagnosis and were considered as controls in the peer sociometric analysis.

Measuring Callous-Unemotional Behavior Disorder (CUBD) Rating Scale. Symptoms of Attention-deficit/hyperactivity disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD) were assessed by parent and teacher ratings from the CUBD. Response range from Not At All (0) to Definitely True (4). Ratings were combined by including the highest rating across informants for each item. Children with conduct problems were grouped post-hoc for analyses based on CDU trait levels (Low, Medium, and High). Children were grouped matching 1 score of 1, 2, and 3, respectively. This was the only predictor variable used in the following analyses. Only the CUBD scale was used in the following analyses.

Outcome Measures. Staff Improvement Rating. Staff Improvement Rating was designed to assess improvement in functioning in a number of domains such as parent and child directed behavior, social skills, and peer skills. Pelham et al. (2000) developed the Staff Improvement Rating Form assessment. It is a rating form filled out at the end of each child of the last day of camp and is based on how well the child handled specific tasks such as putting away toys, following instructions, etc. The rating scale is from 0 to 100.

Table 1. Staff Improvement Rating Form.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Counsel</th>
<th>Low CDU</th>
<th>Medium CDU</th>
<th>High CDU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Skills</td>
<td>82.5 (10)</td>
<td>85.5 (10)</td>
<td>89.5 (10)</td>
<td>92.5 (10)</td>
</tr>
<tr>
<td>Academic Skills</td>
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Researchers are interested in potential beneficial and negative effects of treatment on behavior. ‘0’ responses were recoded to ‘1’, ‘1’ responses were recoded to ‘2’, ‘2’ responses were recoded to ‘3’, ‘3’ responses were recoded to ‘4’, and ‘4’ behavior remained unchanged. Ratings were also provided by parents and teachers. Each item was rated from 0 to 4 (Not At All True, Sometimes True, and Definitely True). Ratings were averaged across informants for each item. Children with conduct problems were grouped post-hoc for analyses based on CDU trait levels (Low, Medium, and High). Children were grouped matching 1 score of 1, 2, and 3, respectively. This was the only predictor variable used in the following analyses. Only the CUBD scale was used in the following analyses.

Outcome Measures. Staff Improvement Rating: Form. Based on the Clinical Global Impressions (CGI), the Staff Improvement Rating Form assesses improvement in functioning in a number of domains such as parent and child directed behavior, social skills, and peer skills. Pelham et al. (2000) developed the Staff Improvement Rating Form assessment. It is a rating form filled out at the end of each child of the last day of camp and is based on how well the child handled specific tasks such as putting away toys, following instructions, etc. The rating scale is from 0 to 100.

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Results

Children with high levels of C/U traits demonstrated the least favorable behavioral outcomes and are among the most well-liked among their peers and exhibit a large social impact across their group. Children with moderate levels of C/U traits appear to experience more favorable outcomes behaviorally and are among the most well-liked among their peers and exhibit a large social impact across their group. Children with high levels of C/U traits demonstrate the least favorable behavioral outcomes and are among the most disliked children based on peer ratings.

Discussion

• The Staff Improvement Ratings suggest that children with high levels of C/U traits tend to experience worse behavioral outcomes than those children who have moderate levels of C/U traits which appear to be robust across domains such as severe conduct problems and social skills.

• Children with high levels of C/U traits appear to experience comparable outcomes to children without C/U traits. Why children with ADHD/CP traits experience a less favorable response to behavioral treatment, as was an unexpected finding that should be addressed in future research.

• Children with high C/U traits have been theorized to be less responsive to behavioral treatment, and this study provides additional evidence that children with high levels of C/U traits experience lower responses to behavioral treatments. This suggests that these children in particular may require more specialized intervention components.

• The Peer Sociometric Ratings suggest that children without conduct problems or disruptive behavioral disorders are more well-liked than those with moderate and high levels of C/U traits and are less disliked than children with conduct problems.

• Taken together, C/U groups were divided on ratings based on pre-camp ratings by parents and teachers, but differed on during-camp behavior as reported by staff and peers. Differences that emerged were robust with respect to method and time frame.

• Children with moderate levels of C/U traits appear to experience more favorable outcomes behaviorally and are among the most well-liked among their peers and exhibit a large social impact across their group.

• Children with high levels of C/U traits demonstrate the least favorable behavioral outcomes and are among the most disliked children based on peer ratings.

Future Directions

• When included as a covariate, medication use was not a significant covariate in significant findings. Regarding staff and peer ratings, future research should examine the behavioral outcomes and peer likability of children when medication is systematically assessed.

• Larger sample sizes overall are always beneficial. Future research should include more participants and compare C/U traits more specifically to include more participants within the low and high trait groups.

• Although the CUBD has been used in other studies, multiple forms of measuring C/U traits may be beneficial. Similarly, examining outcome ratings from multiple informants may be helpful in determining if these effects are maintained across different domains. More objective outcome measures, such as ratings of behavior, may also be beneficial in determining the effect of treatment on behavior.

References


