The aim of this study was to replicate previous findings which laud the effectiveness of Mode Deactivation Therapy (MDT). This study attempted to investigate this finding within a “real world setting”: a child and adolescent residential treatment setting over the course of one year. The effectiveness of MDT was examined through the comparison of pre- and post treatment measures through a within group design. For this study, thirty adolescents with physically and/or sexually aggressive behaviors who were admitted into a residential treatment unit, fifteen were given the MDT protocol and the other relied on Treatment as Usual (TAU). Assessments of depressive symptoms, suicidal ideation, along with monitoring of aggressive behaviors with the evaluations conducted after one year of treatment. The assessments were utilized as pre- and post measures for each area (depression, suicidal ideations, behavioral interactions, and therapeutic holds & aggressive behaviors) for each of the participants.

Sample size for each group (MDT and TAU) was calculated based on the number of patient availability for the length of the study of one year, and from a group of 32 participants, twenty were independently randomly selected ten for each group, for this review by an independent agent outside the residential program. The participants all had written informed consent obtained from the patients and their legal guardians. The sample composed of twenty adolescent males ten for each group with ages ranging from 13 to 18 (mean = 15.7 MDT, 14.8 TAU).

MDT was developed in response to the difficulty in treating adolescents with high co-morbidity, which resulted in ongoing resistance to current treatments modalities as well as being considered treatment failures in both the outpatient and residential settings. Apsche et al (2004) have demonstrated that MDT is effective in reducing aggression and suicidal ideations within this population. Apsche began to formulate MDT as a response to the need for a more efficacious treatment for this specific adolescent typology. Through the synthesizing of an applied CBT methodology as well as Linehan’s work with Dialectical Behavior Therapy (DBT) MDT was developed for adolescents who displayed a reactive conduct disorder, personality disorders/traits, and Post Traumatic Stress Disorder symptomology. Apsche and his colleagues have demonstrated the effectiveness of MDT in reducing aggression, specifically with adolescents who display the aforementioned diagnostic traits (Apsche, Bass, Murphy 2004; Apsche & Ward 2004). Apsche & Siv (2005) further emphasize the need for an efficacious methodology by positing the development of personality disorder traits/features as a coping mechanism by these adolescents. This methodology encapsulates the needs of these adolescents who present with a complicated neglect, multi-axial diagnoses, as well as often being the victims of sexual, physical, and/or emotional abuse.

MDT also includes a series of mindfulness exercises that are specifically designed for these adolescents. Exercises incorporated within the client workbook designed to allow the youth to practice the technique which helps ensure trust, reduce anxiety and increase commitment to treatment as it helps develop mindfulness skills for the youth. The mindfulness skills result in development of the youths heightened awareness of their fears, triggers and beliefs which helps, them to use this new coping strategies in place of the aggressive behaviors.

Several descriptive studies indicate that MDT has been more effective than standardized CBT in the treatment of this population of adolescents (Apsche & Ward, 2002). MDT has also been demonstrated as effective in a series of case studies (Apsche, Ward, Evile, 2002 a & b; Apsche & Ward Bailey,
2003) and an empirical study which shows that it was more effective than standard CBT and Social skills training (Ap

sche, Bass, Siv, 2005). Preliminary results of several recent case studies has shown MDT to be effective in reducing sui
cidal ideation and in reducing fire setting behaviors (Ap

sche & Siv, 2005, Apsche, Siv, Bass, 2005). The study of this methodology is important on several levels. The first level
being the need to provide evidence based therapy for adoles
cents with deficits in multiple areas regarding their mental
health issues. Kazdin and Weisz (2003) indicate how aggres
sive behaviors have an adverse effect not only on the ado
lescent but also in a variety of social settings such as aca
demics, peer relations, and an increased contact with the ju
venile justice system. Providing a methodology which al
 lows increased progress with this difficult population as well
as offering hope to both providers and clients is paramount
for the benefit of both parties.

METHOD

Participants

The sample comprised of 20 male adolescents residential pa
tients who participated in the study. All subjects were re
ferred to the same residential treatment facility for the treat
ment of aggression. In this study, subjects were randomly
assigned to one of the two treatment conditions at the time
of admission based on available openings in the caseload of
the participating clinicians. The two treatment conditions
showed similarity in terms of the frequency of Axis I and
Axis II diagnoses, age, and racial background. To ensure
consistency in the delivery of the two respective treatments,
therapists were specifically trained in the one of the three
treatment curriculums/methods. The average length of resi
dential treatment across all conditions was one year.

Treatment As Usual (TAU)

A total of ten male adolescents were assigned to the TAU
condition. The group was comprised of 4 African Ameri
cans, 4 European Americans and 2 Hispanic American with
an average age of 14.8. The principal Axis I diagnoses for
this group included Conduct Disorder (4), Oppositional De
fiant Disorder (4), and Post Traumatic Stress Disorder (7).
Axis II diagnoses for the group included Mixed Personality
Disorder (4), Borderline Personality Traits (2), Narcissistic
Personality Traits (2), Dependent Personality Traits (1), and
Avoidant Personality Traits (0). Race

<table>
<thead>
<tr>
<th>Race</th>
<th>TAU</th>
<th>MDT</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>European American</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
| Hispanic/Latino Ameri
can | 2   | 2   |
| Total                  | 10  | 10  |
| Average Age            | 14.8| 15.7|

Mode Deactivation Therapy (MDT)

A total of ten male adolescents were assigned to the MDT
condition. The group was comprised of 5 African Ameri
cans, 3 European Americans and 2 Hispanic American with
an average age of 15.7. The principal Axis I diagnoses for
this group included Conduct Disorder (5), Oppositional De
fiant Disorder (3), Post Traumatic Stress Disorder (7), and
Major Depressive Disorder, primary or secondary (2). Axis II diagnoses for the group included Mixed Personality Dis
order (6), Borderline Personality Traits (3), and Narcissistic
Personality Traits (2). The MDT condition used the method
ology described earlier in this paper.

Instruments

Pretreatment and Posttreatment assessments involved a bat
tery of self-report measures targeting multiple risk factors.
The baseline (“pre-treatment”) measure of physical aggres
sion consisted of the average number of incidents that oc
curred during the first 60 days following admission and the
post-treatment measure was the rate of occurrence during the
60 day period prior to discharge. In addition, a key measures
of physical aggression used in this study consisted of Daily
Behavior Reports and Behavior Incident Reports. The Daily
Behavior Reports and Behavior Incident Reports were com
pleted by all levels of staff, both professional and paraprofes
sional, across all settings of the residential treatment program
(e.g., schoolroom, psychoeducational classes, treatment ac
tivities, residential dormitories, etc.). The Behavior Incident
Reports were only completed by staff following the occur
rence of serious or critical incidents, namely, acts of physical

<table>
<thead>
<tr>
<th>Axis I</th>
<th>TAU</th>
<th>MDT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Disorder</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Post Traumatic Stress Disorder</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Major Depression</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Axis II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Personality Disorder</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Borderline Personality Traits</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Narcissistic Personality Traits</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dependent Personality Traits</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Avoidant Personality Traits</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1
Composition of both treatment groups.
aggression and/or therapeutic holds. Inter-rater reliability in the use of the measures was determined by independently totaling the number of physical aggression incidents on both the Daily Behavior Report cards and the Behavior Incident Report forms and calculating the percentage of agreement. The agreement for this study was at the 93% level.

The self-report measures consisted of the following assessments which were used to measure the residents pretreatment and posttreatment, which included the Child Behavior Checklist (CBCL; Achenbach, 1991, 2001). The CBCL is a multiaxial assessment designed to obtain reports regarding the behaviors and competencies of 6–to–18 year olds. The means and standards are divided into three categories: internalizing (which measures withdrawn behaviors, somatic complaints, anxiety and depression), externalizing (which measures delinquent behavior and aggressive behavior), and total problems (which represent the conglomerate of total problems and symptoms, both internal and external). Beck Depression Inventory (BDI) (Beck and Beck, 1972; Beck et al., 1961) which is designed to measure depression, and the Reynolds’ Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1988) to assess the change in suicidal ideation pre and posttreatment. Subjects completed these measures at admission and at discharge.

Following completion of one year of treatment, the number of incidents reports filed by the staff was calculated for both MDT and TAU groups.

Thus, this first analysis shows that all types of treatment—Mode Deactivation Therapy and Treatment as Usual—had a positive effect of reducing rates of physical aggression and therapeutic holds over the course of treatment (see Figure 1).

To better elucidate the differences between groups in magnitude of effect, independent factorial analyses on treatment model and variable were conducted.

With an overall percent reduction of 70.7% in rates of post-treatment therapeutic holds, Mode Deactivation Therapy was found to be superior to the Treatment As Usual which had a 24.7% reduction rate. The most dramatic difference between treatment groups was found in reduction of post-treatment rates of physical aggression and therapeutic holds. In this instance, Mode Deactivation Therapy showed a statistically significant reduction in rates of physical aggression from baseline to post-treatment. MDT showed a reduction of 66.8% in Physical aggression compared to TAU at 27.9%. Post-treatment rates of physical aggression were 2.7 (incidents per month) for MDT and 6.9 (incidents per month) for TAU. The results clearly show that MDT produced significantly superior results when compared to TAU. These differences in magnitude of effect are graphically represented in Figure 2.

The CBCL is a multiaxial assessment designed to obtain reports regarding the behaviors and competencies of 6–to–18 year olds. The means and standards are divided into three categories: internalizing (which measures withdrawn behaviors, somatic complaints, anxiety and depression), externalizing (which measures delinquent behavior and aggressive behavior), and total problems (which represent the conglomerate of total problems and symptoms, both internal and external).

MDT’s mean CBCL scores are at least one standard deviation less than the TAU mean scores. Even with the CBCL assessment the two groups differed significantly. Residents who participated in MDT had lower scores on all measures than residents who engaged in TAU.

The results indicate that the mean scores the internalizing factor, externalizing factor, and total scores for the MDT group is at or near one standard deviation below the TAU group.

Beck Depression Inventory (BDI) (Beck and Beck, 1972; Beck et al., 1961) which is designed to measure depression, and the Reynolds’ Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1988) to assess the change in suicidal ideation pre and post-treatment. Subjects completed these measures...
Table 2
Descriptive Statistics of Measures for MDT and TAU Groups For Baseline and Post-treatment Results.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Tx Type</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Std. Error</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>TAU</td>
<td>10</td>
<td>9.52</td>
<td>2.41</td>
<td>.118</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Physical</td>
<td>MDT</td>
<td>10</td>
<td>7.96</td>
<td>2.21</td>
<td>.114</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Aggression</td>
<td>Total</td>
<td>20</td>
<td>8.73</td>
<td>2.31</td>
<td>.116</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Baseline</td>
<td>TAU</td>
<td>10</td>
<td>7.04</td>
<td>1.13</td>
<td>.110</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Therapeutic</td>
<td>MDT</td>
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<td>7.13</td>
<td>1.17</td>
<td>.109</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Holds</td>
<td>Total</td>
<td>20</td>
<td>7.09</td>
<td>1.15</td>
<td>.1095</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>TAU</td>
<td>10</td>
<td>6.85</td>
<td>3.77</td>
<td>.116</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Physical</td>
<td>MDT</td>
<td>10</td>
<td>2.65</td>
<td>2.36</td>
<td>.105</td>
<td>0</td>
<td>5</td>
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<tr>
<td>Aggression</td>
<td>Total</td>
<td>20</td>
<td>4.75</td>
<td>3.07</td>
<td>.110</td>
<td>0</td>
<td>8.5</td>
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<tr>
<td>Post-Treatment</td>
<td>TAU</td>
<td>10</td>
<td>5.35</td>
<td>1.36</td>
<td>.118</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Therapeutic</td>
<td>MDT</td>
<td>10</td>
<td>2.09</td>
<td>3.42</td>
<td>.099</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Holds</td>
<td>Total</td>
<td>20</td>
<td>3.72</td>
<td>2.36</td>
<td>.108</td>
<td>0</td>
<td>7.5</td>
</tr>
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</table>

Table 3
Comparison of Post-Treatment Incident Avg. of Holds and Aggressive Incidents for Both Treatment Groups.

<table>
<thead>
<tr>
<th>MDT</th>
<th>Physical Aggression</th>
<th>Post-Treatment</th>
<th>Percent reduction</th>
<th>Post-Treatment</th>
<th>Percent reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.7</td>
<td>66.7%</td>
<td>6.9</td>
<td>27.9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Therapeutic Holds</td>
<td>2.1</td>
<td>70.7%</td>
<td>5.3</td>
<td>24.7%</td>
</tr>
</tbody>
</table>

Table 4
CBCL Scores, Ranges, and Standard Deviations for Baseline and Post-Treatment Measures for Both Treatment Groups

<table>
<thead>
<tr>
<th>Measure</th>
<th>Scale</th>
<th>TAU (Range)</th>
<th>MDT (Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Behavior</td>
<td>Internal</td>
<td>71.43 (66–84)</td>
<td>74.57 (68–86)</td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>External</td>
<td>73.74 (66–86)</td>
<td>74.94 (64–86)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>72.67</td>
<td>74.74</td>
</tr>
<tr>
<td>Child Behavior</td>
<td>Internal</td>
<td>63.66 (55 - 80)</td>
<td>51.75 (39 - 71)</td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>External</td>
<td>65.63 (52 - 82)</td>
<td>50.04 (37 - 69)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>64</td>
<td>51.00</td>
</tr>
</tbody>
</table>

Table 5
CBCL Scores, Ranges, and Standard Deviations for Baseline and Post-Treatment Measures for Both Treatment Groups

Figure 3. Mean CBCL Scores for MDT and TAU Groups Pre-Treatment.

Results

This study was initiated to compare the efficacy of Mode Deactivation Therapy (MDT) to the current treatment as usual.
Table 5

Means and Standard Deviations on Assessment Measures at Three Time Points By Treatment Groups

<table>
<thead>
<tr>
<th>Measure</th>
<th>MDT Baseline</th>
<th>MDT 3 Months</th>
<th>MDT 6 Months</th>
<th>TAU Baseline</th>
<th>TAU 3 Months</th>
<th>TAU 6 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI-II</td>
<td>34.2</td>
<td>14.69</td>
<td>9.54</td>
<td>26.8</td>
<td>20.62</td>
<td>17.5</td>
</tr>
<tr>
<td>SIQ-HS</td>
<td>57.2</td>
<td>29.29</td>
<td>14.43</td>
<td>55.4</td>
<td>49.34</td>
<td>18.6</td>
</tr>
</tbody>
</table>

Note: All baseline comparisons between groups were non-significant (p > .05).

BDI-II = Beck Depression Inventory 2nd Edition; SIQ-HS = Suicidal Ideation Questionnaire High School Form; MDT = Mode Deactivation Therapy; TAU = Treatment as usual.

Table 6

Means, Standard Deviation, Max and Min for Assessment Measure at Three Time Points by Treatment Groups

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDT</td>
<td>Baseline</td>
<td>10</td>
<td>29</td>
<td>39</td>
<td>34.2</td>
<td>14.69</td>
<td>47</td>
<td>57.2</td>
<td>29.69</td>
</tr>
<tr>
<td>TAU</td>
<td>Baseline</td>
<td>10</td>
<td>19</td>
<td>31</td>
<td>26.8</td>
<td>20.62</td>
<td>47</td>
<td>55.4</td>
<td>49.34</td>
</tr>
<tr>
<td>MDT</td>
<td>3 Months</td>
<td>10</td>
<td>11</td>
<td>17</td>
<td>14.6</td>
<td>9.54</td>
<td>0</td>
<td>10.9</td>
<td>14.43</td>
</tr>
<tr>
<td>TAU</td>
<td>3 Months</td>
<td>10</td>
<td>10</td>
<td>22</td>
<td>17.5</td>
<td>14.37</td>
<td>6</td>
<td>19.6</td>
<td>18.90</td>
</tr>
<tr>
<td>MDT</td>
<td>6 Months</td>
<td>10</td>
<td>9</td>
<td>11</td>
<td>9.9</td>
<td>6.18</td>
<td>0</td>
<td>12.9</td>
<td>7.37</td>
</tr>
<tr>
<td>TAU</td>
<td>6 Months</td>
<td>10</td>
<td>8</td>
<td>16</td>
<td>12.7</td>
<td>12.91</td>
<td>5</td>
<td>12.9</td>
<td>13.66</td>
</tr>
</tbody>
</table>

Note: All baseline comparisons between groups were non-significant (p > .05).

BDI-II = Beck Depression Inventory 2nd Edition; SIQ-HS = Suicidal Ideation Questionnaire High School Form; MDT = Mode Deactivation Therapy; TAU = Treatment as usual.

Figure 4

Mean CBCL Scores for MDT and TAU Groups Post-Treatment.

Figure 5

BDI-II Scores for MDT and TAU Groups.

(TAU) in the treatment of aggressive adolescent males in residential treatment. The analysis of the Daily Behavioral reports, which indicated a number of observed aggressive acts, were compiled, statistical analysis of the results ensued. It was found that all participants benefited from treatment regardless of theoretical orientation (see Figure 1).

The baseline average rate of aggression across all groups was 8.73 with a total standard deviation of 2.31 and standard
Figure 6. Mean Scores for SIQ-HS at three time points. Note: All baseline comparisons between groups were non-significant (p > .05) SIQ-HS = Suicidal Ideation Questionnaire High School Form; MDT = Mode Deactivation Therapy; TAU = Treatment as usual

Figure 8. Post-Treatment Avg. for Physical Aggression and Therapeutic Holds for MDT vs. TAU.

The data indicates that Mode Deactivation Therapy (MDT) may achieve superior results in reducing both physical aggression and therapeutic holds, in conduct-disordered and personality-disordered youth in a long-term residential treatment setting. Moreover, while both treatments were effective in reducing physical aggression, only (MDT) demonstrated a significant reduction in rates of therapeutic holds. These findings also suggest supports earlier studies that MDT could be an effective treatment for reducing depression and suicidal ideation from BDI and SIQ results.

As in any real world study, it is always difficult to control for the levels of competence of the participating therapists and their adherence to the “purity” of both treatment methods. Best efforts were made to control for this common problem by ensuring that therapists shared the same professional
degree and level of clinical experience in each of the two methodologies and by providing training in the delivery of each model prior to the study. Training and supervision was provided by a doctorate level psychologist in both groups. The MDT group was trained by the developer of MDT, in order to reduce confounds that may have been produced by additional trainers.

The strength of the outcomes could be further enhanced with the inclusion of additional outcome measures and, ideally, long-term follow-up of the youth who participated in the study. This study measured levels of psychological distress, including internal and external, as measured by the CBCL, depression with the BDI, and suicide ideation with the SIQ. MDT demonstrated a significant decrease in all levels of behavior and psychological distress.

It is important to note that the authors do not purport that MDT will generalize to any groups other than adolescents with conduct and personality disorders. The authors hope that future research may use randomized trials in residential, inpatient hospital, and outpatient clinics with an attempt to replicate these findings in other residential treatment facilities and with other relevant adult and adolescent populations, particularly with those identified with severe aberrant behaviors including personality disorders, conduct disorder and aggression.

References


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