A One Year Study Of Adolescent Males With Aggression and Problems Of Conduct and Personality: A comparison of MDT and DBT

Jack A. Apsche, Christopher K. Bass and Marsha-Ann Houston

Abstract

This study examines the effectiveness of Mode Deactivation Therapy, (MDT) and Dialectical Behavior Therapy, (DBT) in a Residential Treatment Center for adolescent males. All clients were admitted to the same Residential Treatment Center. Clients presented with physical aggression, suicidal ideation, with mixed personality disorders/traits. One group of clients was treated with MDT, while the other group received DBT treatment.
Keywords: Mode Deactivation Therapy (MDT), Dialectical Behavior Therapy (DBT), Treatment Adolescents, Conduct Disorder, Personality Disorders, Aggression, Suicidal Ideation.

Introduction

Mode Deactivation Therapy, (MDT) was developed by Apsche (2004,2006) to treat issues among adolescent clients that were not successfully addressed in previous treatment events. These adolescents had complex topologies and were heterogeneous in their complex problems. In numerous studies, Linehan (1993) has shown that DBT can be effective in treating Borderline Personality Disorder in adult females. In a one year randomized study, Linehan, et. al., (1991), (who recently reported that DBT is effective in treating *suicidal* adolescents) found that DBT significantly reduced psychiatric inpatient stays and lessened parasuicidal behavior. Its use also encouraged treatment compliance. Miller, et.al., (2006) found DBT effective in reducing suicidal ideations in adolescents being treated in an inpatient setting.

Apsche, Siv & Matteson, (2005) presented a case study comparing the effects of MDT and DBT. It appeared that MDT reduced physical aggression and self injurious behavior; whereas DBT, in this case, had been less than effective. Apsche & Bass, (2006) presented a study comparing 40 adolescent males presenting with aggression and suicidal ideations. MDT was significantly more effective than DBT treatment in this study. For a complete review of MDT, see Apsche, (2006). For a complete review of DBT, see Linehan, (1993).

The sample size for each group type, MDT and DBT, was calculated based on the potential residential length of stay. Each group participant was randomly assigned to groups based on a census of 30. Since this was a clinical study, there were no study drop-outs. Also, due to the nature of the residential treatment center, the clients in the study were not homogenous and presented with more severe behavioral problems than target populations in typical research therapy. Kazdin & Weisz (2003).

Written informed consent was obtained from all of the clients' parents or guardians. The sample was composed of twenty adolescent males, ten for each group, within ages ranging from 15-18, (mean=16.1 MDT 15.9 DBT.)

Method

Participants

The sample was comprised of 20 male adolescents at a residential treatment center. All subjects were referred to the residential treatment center for anger, aggressions, and externalizing problem behaviors. The clients were referred to their treatment group randomly. The first client assignment was to the DBT group and was determined by a "coin toss". The second assignment was to the MDT group, followed by DBT client assignment on an alternating basis, until each group was filled. The DBT group

therapists were all trained in DBT at the official DBT training center. The MDT group therapists were trained by the creator and developer of MDT (the first author of the paper).

Dialectical Behavior Therapy

A total of ten male adolescents were assigned to the DBT group. The group consisted of African Americans, 3 European Americans and 1 Hispanic American, the principal Axis I diagnosis was conduct disorder (5), Oppositional Defiant Disorder (4) and Post Traumatic Stress Disorder (6). Axis II diagnoses for the group included Mixed Personality Disorder (3), Borderline Personality traits (3), and Narcissistic Personality Traits (2), and Dependent Personality Disorder (2). DBT consisted of weekly individual therapy and at least one DBT skills group per week.

Mode Deactivation Therapy

A total of ten male adolescents were assigned to the MDT condition. The group was comprised of 5 African Americans, 4 European Americans, and 1 Hispanic American, with an average age of 15.7. The principal Axis I diagnosis for this group included Conduct Disorder (6), Oppositional Defiant Disorder (2), Post Traumatic Stress Disorder (6), and Major Depressive Disorder, primary or secondary (1). Axis II diagnoses for the group included Mixed Personality Disorder (4), Borderline Personality traits (4), and Narcissistic Personality Traits (1), and Dependent personality Disorder (1). The MDT condition used the methodology described earlier in this paper.

Table 1. Composition of both treatment groups

Axis I	**DBT**	**MDT**
Conduct Disorder	5	6
Oppositional Defiant Disorder	4	2
Post Traumatic Stress Disorder	6	6
Major Depression	0	1
Axis II		
Mixed Personality Disorder	3	4
Borderline Personality Traits	3	4
Narcissistic Personality Traits	2	1
Dependent Personality Traits	2	1
Avoidant Personality Traits	0	0
Race		
African American	6	5
European American	3	4
Hispanic/Latino American	1	1
Total	10	10
Average Age	15.9	16.1

Instruments

Pre and Post treatment assessments involved a battery of self-report measures targeting multiple risk factors. The baseline (pre-treatment) measure of physical aggression indicated the average number of incidents that occurred during the first 60 days following admission; the post-treatment measure was the incident occurrence rate during the 60 day period prior to discharge. In addition, key measurements 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 completed by all levels of staff, professional and paraprofessional, across all settings of the residential treatment program (e.g., schoolroom,

psycho-educational classes, treatment activities, residential dormitories, etc.). The Behavior Incident Reports were only completed following the occurrence of serious or critical incidents; namely, acts of physical aggression. 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 of the data. The agreement for this study was at the 96% level.

The self-report measures consisted of the following assessments which were used to determine the clients' state in pre and post treatment phases. The Beck Depression Inventory, (BDI) (Beck and Beck, 1972; Beck et al., 1961) (designed to measure depression), and the Reynolds Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1988), used to assess changes in suicidal ideation pre and post treatment. Subjects completed these measures upon admission and at discharge.

Following the subjects' completion of one year of treatment, the numbers of incident reports filed by the staff were calculated for both MDT and DBT groups.

Table 2. Descriptive Statistics of Measures for MDT and DBT Groups for Baseline and Post-treatment Results

Descriptive Statistics

Measure	Tx Type	N	Mean	Std. Dev.	Std. Error	Range Min	Range Max
Baseline Physical Aggression	DBT	10	12	2.48	.18	1	14
	MDT	10	11.8	2.32	.14	1	14
	Total	20	23.8	2.50	.166	1	14

In this first analysis, the Descriptive Statistics show that both types of treatment, Mode Deactivation Therapy and Dialectical Behavior Therapy, had positive effects of reducing rates of physical aggression over the course of treatment.

Mode Deactivation Therapy showed a statistically significant reduction in rates of physical aggression from baseline to post-treatment. MDT showed a reduction of 92.23% in Physical aggression compared to DBT at 27.9%. Post-treatment rates of physical aggression were 1.05 (incidents per month) for MDT and 8.76 (incidents per month) for DBT. The results clearly show that MDT produced significantly superior results when compared to DBT. These differences in magnitude of effect are graphically represented in Figure 1.

Table 3
Comparison of Post-Treatment Incident Average of Aggressive Incidents for Both Treatment Groups

	MDT		DBT	
	Post-Treatment Monthly Avg.	Percent reduction	Post-Treatment Monthly Avg.	Percent reduction
Physical Aggression	**1.05**	**92.23%**	**8.76**	**27.9%**

Again, the measurements used were the 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 were administered these measurements at three time intervals. Results are shown in Table 4 and Table 5, and the mean scores are shown graphically in Figures 1 and 2.

Table 4.
Means and Standard Deviations on Assessment Measures at Three Time Points By Treatment Groups

	MDT						DBT					
	Baseline		3 Months		6 Months		Baseline		3 Months		6 Months	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
BDI-II	38.4	**14.25**	**14.6**	**9.16**	**8.9**	**6.1**	**36.9**	**19.21**	**18**	**14.3**	**13.1**	**12.90**
SIQ-HS	**58.4**	**29.19**	**10.9**	**14.43**	**7.0**	**7.20**	**58.2**	**45.38**	**19.2**	**18.8**	**2.89**	**13.16**

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; DBT=Dialectical Behavior Therapy

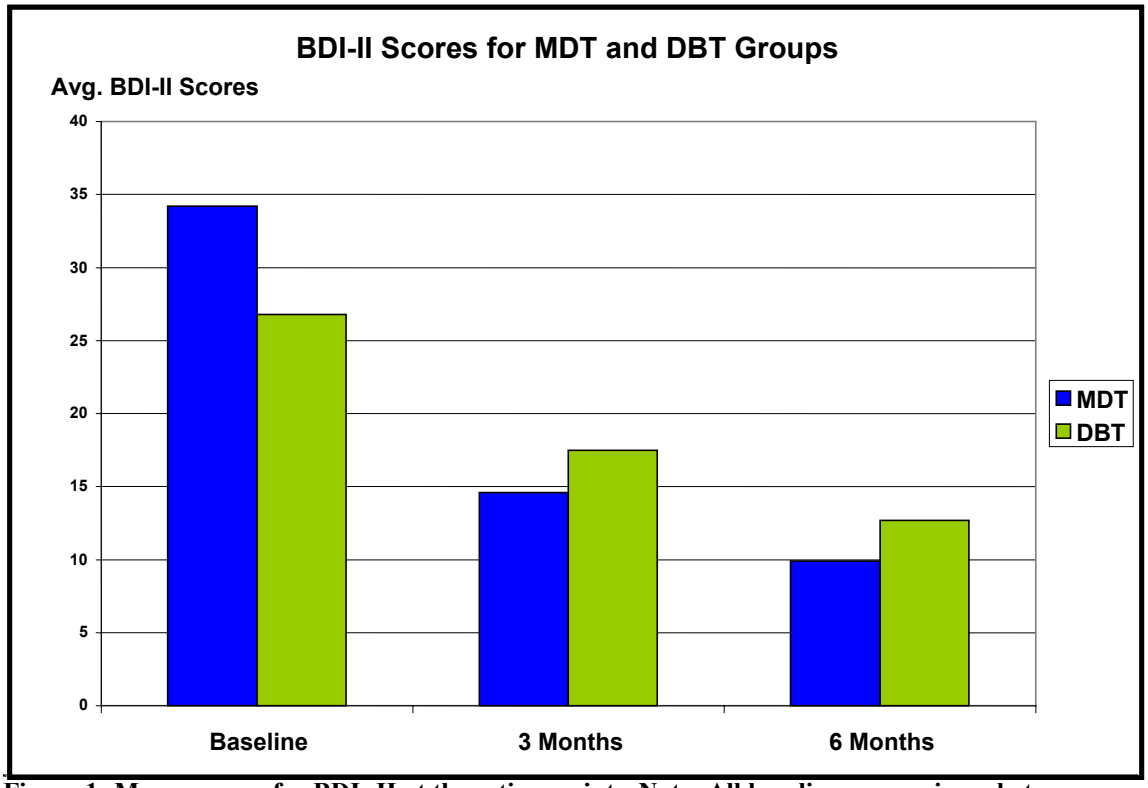

Figure 1: Means scores for BDI- II at three time points. Note: All baseline comparisons between groups were non-significant (p> .05) BDI-II = Beck Depression Inventory 2nd Edition; MDT= Mode Deactivation Therapy; DBT=Dialectical Behavior Therapy

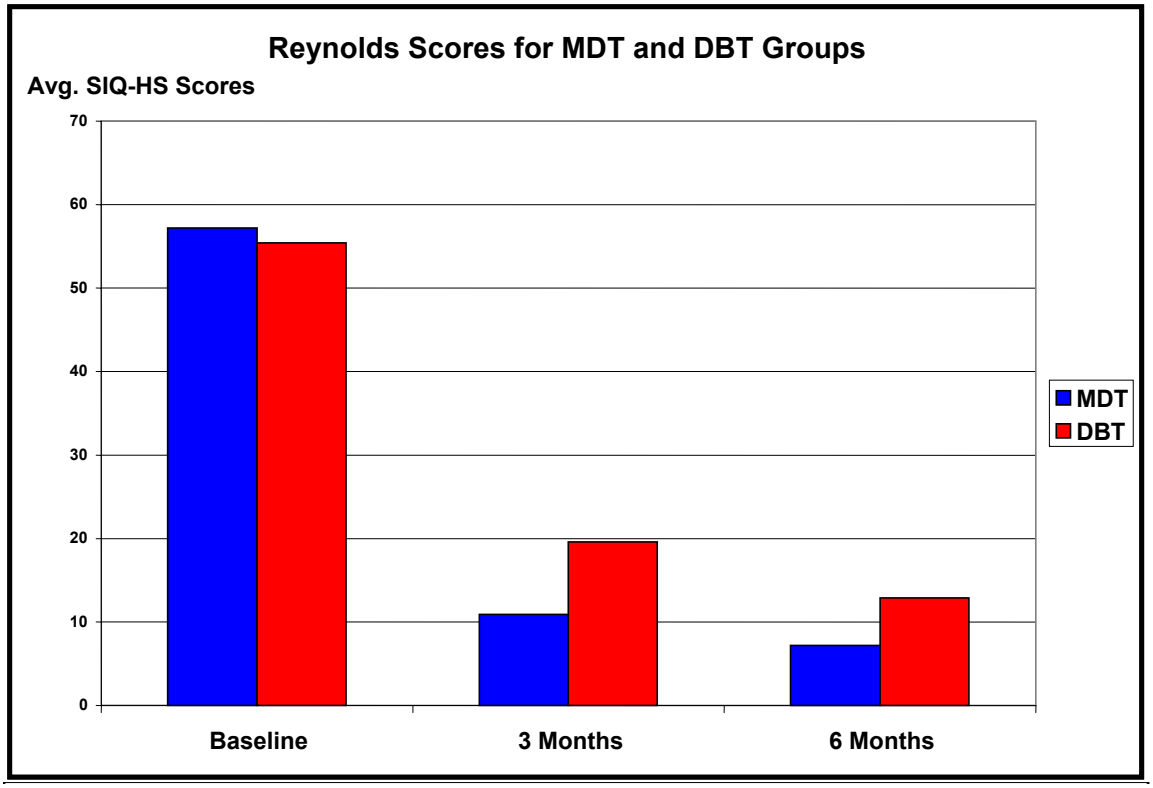

Figure 2: Mean Scores for SIQ-HS at three time points. Note: All baseline comparisons between groups were non-significant (p> .05) SIQ-HS= Suicidal Ideation Questionnaire High School Form; MDT= Mode Deactivation Therapy; DBT=Dialectical Behavior Therapy

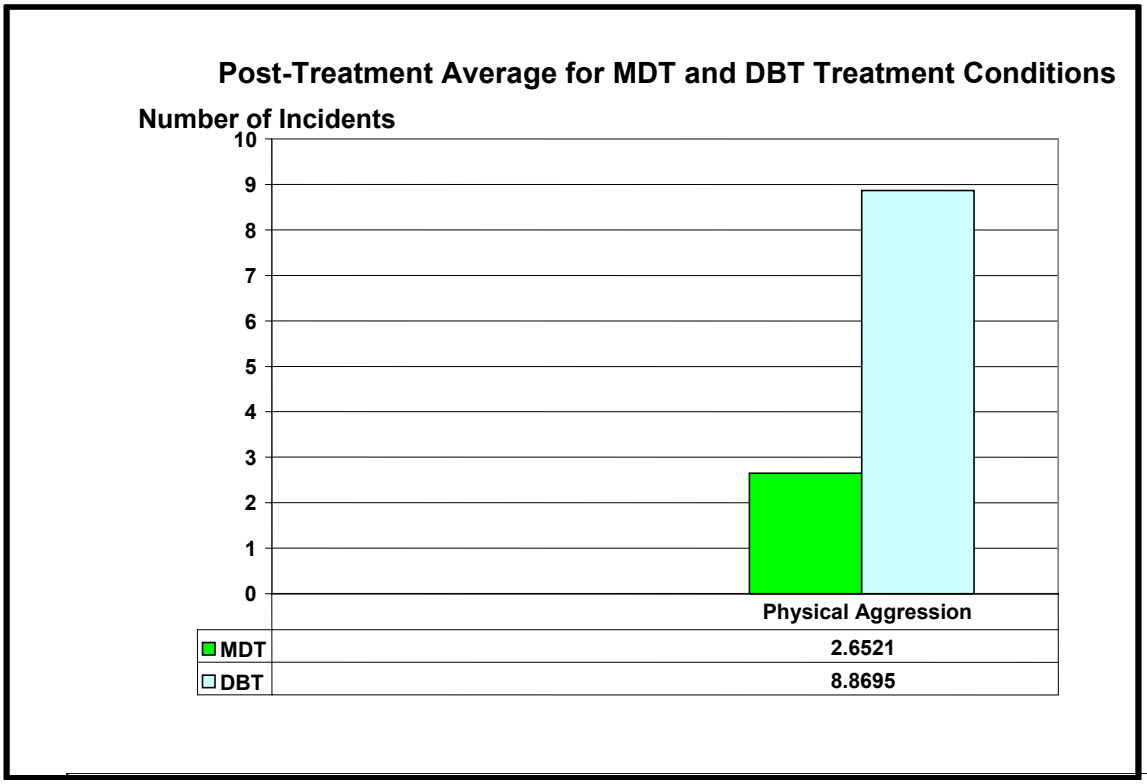

Figure 3. Baseline Avg. of Physical Aggression for MDT vs. DBT

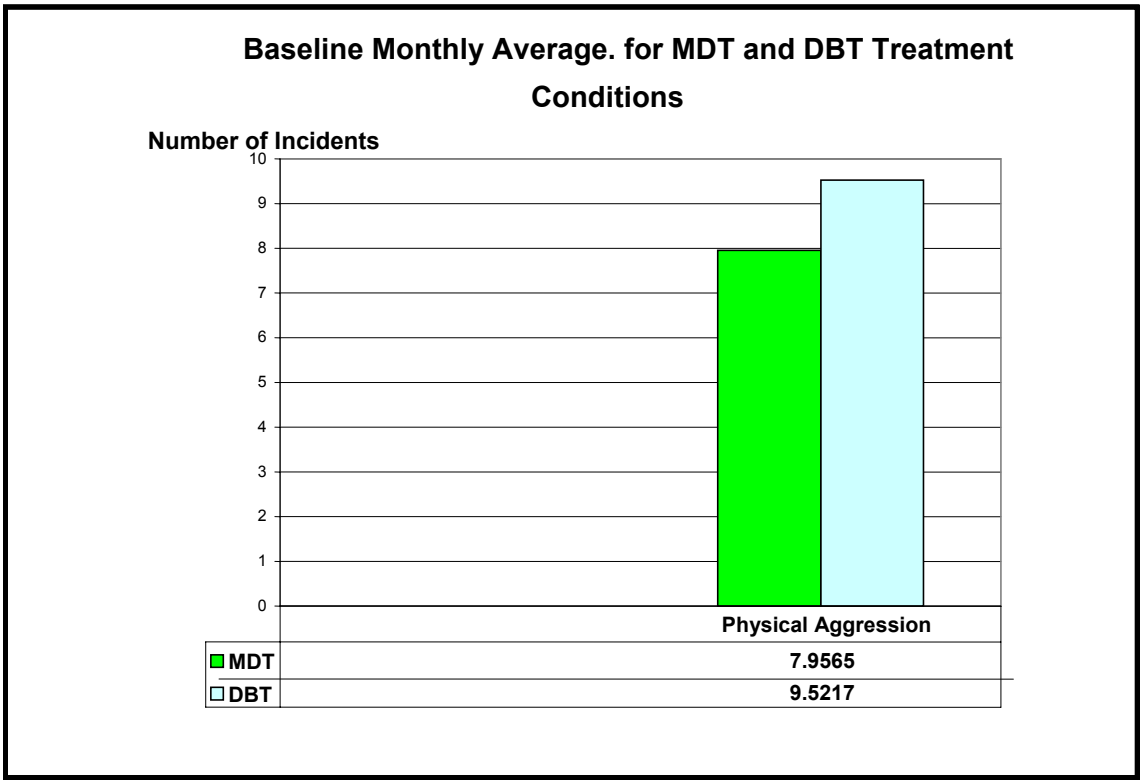

Figure 4. Baseline Avg. of Physical Aggression for MDT vs. DBT

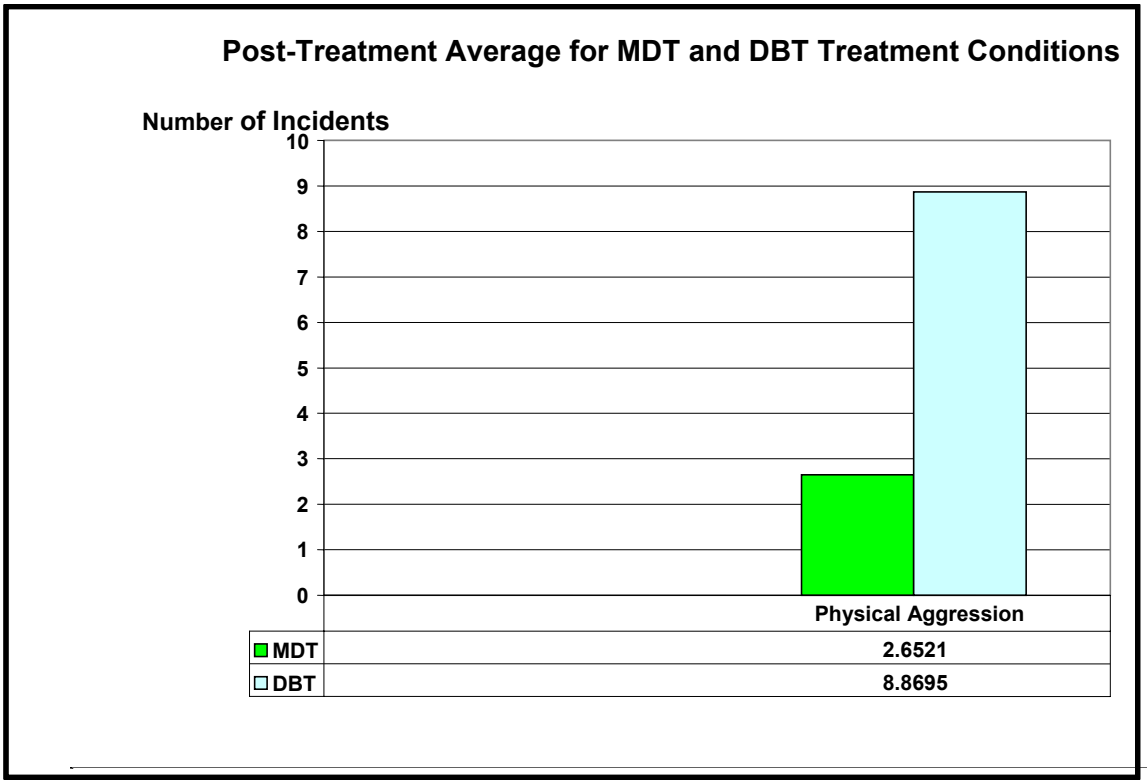

Figure 5. Post-Treatment Avg. for Physical Aggression and Therapeutic Holds for MDT vs. DBT

Results

This study was initiated to compare Mode Deactivation Therapy (MDT) and Dialectical Behavior Therapy (DBT) 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, was 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 23.8 with a total standard deviation of 2.50 and standard error of .16. The MDT group had a 92.23 percent reduction in rate of aggression, with a post treatment mean of 9.80, with a standard deviation of 2.32 and standard error of .14. The baseline mean across both groups was 7.31 with a total standard deviation of 5.14 and standard error of .108.

On the BDI-II both DBT and MDT performed well in measurements of the difference between baseline and post-treatment rates of depression. The baseline mean BDI-II scores of were 36.9 DBT and 38.4 MDT; post-treatment scores were 13.1 and 8.9, with standard deviation of 6.1 and 12.90, respectfully. Data suggests that MDT is more effective in reducing symptoms of depression than DBT in this study.

On the SIQ both DBT and MDT performed well in measuring the difference between baseline and post-treatment rates of depression and suicidal ideation. Data shows the baseline mean SIQ scores of 55.4 DBT and 57.2 MDT; and post-treatment scores of 12.97 and 7.20, with standard deviations of 13.66 and 7.93, respectfully. These suggest that MDT is effective in reducing symptoms of depression and suicidal ideation.

Discussion

Findings indicate that Mode Deactivation Therapy (MDT) may achieve superior results in reducing physical aggression in conduct-disordered and personality-disordered youth in a residential treatment setting. While both MDT and DBT reduced physical aggression in these adolescents; MDT was significantly more effective in reducing aggression in this particular study. These findings also support earlier studies indicating that MDT can be used as an effective treatment for reducing depression and suicidal ideation, as shown by BDI and SIQ results.

Participating therapists shared the comparable professional degrees, training and clinical experience in each of the two methodologies. Training and supervision was provided by a doctorate level clinician for 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 authors do not propose that MDT is more effective than DBT in any manner except in this particular, "real world study." The authors also do not propose that MDT is effective with any population other than that represented in this or other MDT studies, Apsche, (2006).

The strength of the outcomes could be further enhanced with the inclusion of additional outcome measures and, ideally, with long-term follow-up of the youth who participated in the study.

Use of 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. As in many clinical trials, the client population was not fully homogenous and the clients' issues were multi-problem focused. Also, as Kazdin & Weiss, (2003) suggested that clinical trials and studies tend to include participants who have more severe disorders,

not volunteers and are often coerced into treatment by adjudication and referring agencies. Both groups in this study presented with issues which were multi-problematic focused, with complex diagnoses on both DSM IV Axis I and Axis II. Many participants had no family involvement or had absentee parents. Clients in both were referred to treatment due to court order and were considered coerced.

It is important to understand that clinical studies pose more difficulties than University based research studies; however, "real world" study is done with "real clients" in clinical settings. Real world studies are important in the development and validation of evidenced based treatment.

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Author Contact Information:

Jack A. Apsche, Ed.D., ABPP
Capital Academy and
The Apsche Center for
Evidenced Based Psychotherapy
215-321-4072
E-mail: Jackmdt@aol.com

Christopher A. Bass, Ph.D.
Clark Atlanta University
Dept of Psychology
207 Knowles Hall, Atlanta, GA 30313
Email: cbass@cau.edu

Marsha-Ann Houston, MHS
Capital Academy
(856) 635-0200, extension 33
E-mail: mhouston1957@hotmail.com