Washington State Institute for Public Policy

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RECIDIVISM FINDINGS FOR THE JUVENILE REHABILITATION ADMINISTRATION'S DIALECTICAL BEHAVIOR THERAPY PROGRAM: FINAL REPORT

The Washington State Institute for Public Policy (Institute) was directed by the Legislature to consult with the Juvenile Rehabilitation Administration (JRA) on research-proven programs.[1] In 1998, JRA initiated a pilot program using Dialectical Behavior Therapy (DBT) for resident juvenile offenders with mental health problems. In 2002, the Institute conducted a preliminary report of DBT using a 12-month follow-up period and found the program reduced felony recidivism.[2] This report updates the recidivism analysis using a longer follow-up period.[3]

BACKGROUND. DBT is a cognitive-behavioral treatment for individuals with complex and difficult to treat mental disorders. DBT was originally developed by Marsha Linehan at the University of Washington to treat chronically suicidal individuals[4] but has since been adapted for clients who have difficulty regulating their emotions.[5]

DBT focuses on the following four objectives: (1) enhancing youth behavioral skills in dealing with difficult situations, (2) motivating youth to change dysfunctional behaviors, (3) ensuring the new skills are used in daily institutional life, and (4) training and consultation to improve the counselor's skills.

SUMMARY

The Washington State Legislature directed the Institute to evaluate the Dialectical Behavior Therapy (DBT) pilot to determine if DBT reduces recidivism. DBT is a program for juvenile offenders who have mental health issues and reside in a state institution.

The Institute conducted a preliminary study of the program in 2002, using a 12-month follow-up period, and found the program reduced felony recidivism. This report updates the 2002 study using a longer follow-up period to measure recidivism.

This study is limited by having a small number of youth in the DBT and comparison groups. As a result, large differences between the groups are necessary to show statistical significance.

Findings

- 40 percent of the DBT group was reconvicted of a new felony within 36 months of release compared with 46 percent of the comparison group—a 15 percent reduction.
- 19 percent of the DBT group was reconvicted of a violent felony within 36 months of release compared with 21 percent of the comparison group—a 9 percent reduction.
- Although there are observed reductions in recidivism for DBT participants, none of these differences between the groups are statistically significant.
- A larger sample size is needed to determine more conclusively if DBT reduces recidivism.

[1] ESSB 6387(203)(20), Chapter 371, Laws of 2002.
[2] R. Barnoski (2002). *Preliminary findings for the Juvenile Rehabilitation Administration's dialectic behavioral therapy program* (Document No. 02-07-1203). Olympia: Washington State Institute for Public Policy.
[3] Suggested citation for this report: E. Drake & R. Barnoski (2005). *Recidivism findings for the Juvenile Rehabilitation Administration's dialectical behavior therapy program: Final report* (Document No. 06-05-1202). Olympia: Washington State Institute for Public Policy.
[4] M. Linehan (1993). *Skills training manual for treating borderline personality disorder*. New York: Guilford Press.
[5] Juvenile Rehabilitation Administration (2002*). Juvenile Rehabilitation Administration: Integrated treatment model report.* Olympia, WA: Department of Social and Human Services. Retrieved on December 22, 2005, from http://www1.dshs.wa.gov/pdf/JRA/ITM_Design_Report.pdf

Although DBT includes individual therapy and group skills training by counselors, it is primarily delivered through daily interactions between all unit staff and the youth. The key components of the program are as follows:

- All residents receive skills training in small groups. The emphasis is on skill acquisition, skill strengthening, and skill generalization. The training continues throughout the youth's stay.
- DBT's individual therapy focuses on behavioral analysis, skills coaching, cognitive modification, exposure-based procedures, and contingency management to change maladaptive behaviors.
- DBT orients families, parole counselors, and caseworkers to the new skills the resident has learned and demonstrates how to support and reinforce these new behaviors.
- DBT includes consultations where staff receive feedback to ensure they adhere to the DBT framework.

The JRA program was implemented in phases. The first phase was at Copalis Cottage in 1998 and 1999. Copalis Cottage is a mental health unit within JRA's Echo Glen Children's Center located in eastern King County. DBT was fully implemented at the cottage in 2000. A DBT consultant was on site, and all cottage staff were trained.

CONSTRUCTING THE STUDY GROUPS. The best way to determine a program's effectiveness is to compare recidivism rates of youth who participate in the program to a similar group who do not participate. Thus, a comparison group is constructed in addition to the DBT study group.

Exhibit 1 shows the number of youth included in the current DBT analysis (gray area). Our method of counting youth who lived in Copalis Cottage has changed since the preliminary study. Previously, youth were counted each time they transferred into Copalis Cottage during their stay at JRA. In this study, if youth have multiple transfers into Copalis Cottage, we count them only once per residential stay. The total stay must be at least 14 days to be counted.

The DBT group consists of 63 youth who lived in the Cottage in 1998 and 1999. The comparison group consists of 65 youth who lived in Copalis Cottage three years prior to the start of DBT in 1998.

Exhibit 1
Youth Meeting Potential Study Group Criteria
By Year of Entry Into Copalis Cottage

		Year in Copalis Cottage	Total	Number Female	Percent Female	
Pre-DBT Mentally Ill Youth	**Comparison Group for Preliminary Study**	1993	15	4	27%	
		1994	18	7	39%	
		1995	29	19	66%	**Current Comparison Group (N=65)**
		1996	20	16	80%	
		1997	16	10	63%	
DBT Mentally Ill Youth	**DBT Group for Preliminary Study**	1998	39	29	74%	**Current DBT Group (N=63)**
		1999	24	21	88%	
	All-Female Cottage With Integrated Treatment Model	2000	28	28	100%	
		2001	35	35	100%	
		2002	23	23	100%	
		2003	28	28	100%	

In this updated analysis, the intent was to increase the follow-up period. In addition, we expected to have a larger sample of DBT participants. This goal was not attained for three reasons.

First, the DBT study group could not be expanded, because DBT was not fully implemented in another JRA location prior to 2000.

Second, JRA changed the program's delivery. Beginning in 2000, JRA adopted an Integrated Treatment Model (ITM). ITM is based on cognitive-behavioral principles in the residential setting and family-focused intervention in the community setting. Unlike youth who went through DBT when it first began in 1998, DBT is now a component of ITM. Consequently, youth receiving DBT in recent years are also receiving ITM services. Any evaluation since the change in program delivery would be testing the effectiveness of DBT imbedded in ITM. As a result, the DBT study group is limited to youth in Copalis Cottage prior to the start of ITM.

Finally, once ITM was implemented, Copalis Cottage became an all-female mental health unit. Therefore, the co-ed comparison group used in the preliminary study was no longer a valid comparison group for the all-female units.

The comparison group is restricted to 1995, 1996, and 1997 cohorts, because they were most similar to the DBT group before DBT was targeted exclusively toward females.

This study is limited by having a small number of youth in the DBT and comparison groups. As a result, large differences between the groups are necessary to show statistical significance.

Exhibit 2 compares youth in the two study groups on key characteristics strongly associated with recidivism. Youth in the DBT group has slightly higher criminal history scores, are younger, have higher Initial Security Classification Assessment (ISCA)[6] risk scores, and have shorter stays in JRA facilities. Although these differences are not statistically significant, the direction of the differences indicates that DBT youth might be more likely to reoffend.

Exhibit 2
Comparison of Study Groups*

	Comparison Group	DBT Group
Number of Youth	65	63
Male	31%	21%
White	60%	73%
Means		
Criminal History Score	14.8	15.2
Age at Admission to JRA	15.1	14.7
Age at Release From JRA	16.1	15.7
ISCA Score	38.4	41.4
JRA Residential Stay Days	370.3	354.2

*No significant differences between the groups on any of the variables.

[6] Initial Security Classification Assessment (ISCA) is a risk tool used by JRA to determine a youth's likelihood of re-offending once returned to the community. Offense seriousness is also included as part of the score.

RECIDIVISM FINDINGS. Recidivism is defined as any offense committed after release to the community that results in a Washington State conviction.[7] This includes convictions in juvenile and adult court. Three types of recidivism are reported:

- Violent felony convictions;
- Felony convictions, including violent felonies; and
- Total recidivism, including felonies and violent felonies, in addition to misdemeanor convictions.

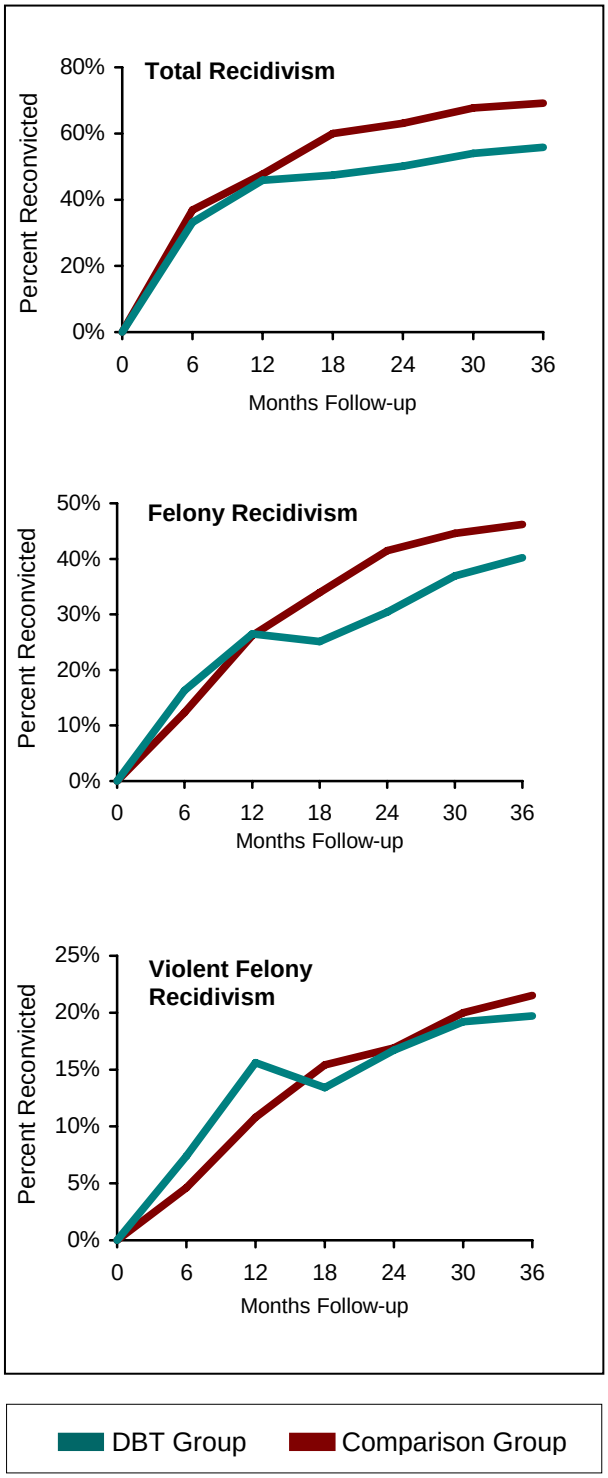
Multivariate regression analysis is used to account for differences between the two groups.[8] This enables us to calculate recidivism rates adjusted for these differences to get a clearer picture of whether DBT affects the outcome.[9]

Exhibit 3 displays adjusted recidivism rates at 6-month intervals, from 6 to 36 months post-release, for all types of recidivism—felony, violent felony, and total.

Adjusted recidivism rates are calculated for each follow-up period. Point estimates are cumulative, but are calculated independently for individual follow-up periods. At DBT's 18-month follow-up period, felony and violent felony recidivism dropped. This is due to a large effect size for the 18-month follow-up period, which drops the adjusted recidivism rate below the 12-month adjusted rate.

The DBT group recidivated at a lower rate than the comparison group in nearly every follow-up interval, but the differences are not statistically significant for any type of recidivism.

Exhibit 3
Adjusted Recidivism Rates: 6- to 36-Month Follow-up for DBT and Comparison Groups



[7] R. Barnoski (1997). *Standards for improving research effectiveness in adult and juvenile justice* (Document No. 97-12-1201). Olympia: Washington State Institute for Public Policy, pg. 2.

[8] Specifically, we use logistic regression and include the following independent variables: ISCA score, age at admission, age at release, male, white, JRA residential length of stay, and criminal history score.

[9] The regression results are shown in the Technical Appendix on page 6. We use the coefficient for DBT from the logistic regression and the comparison group recidivism rate to calculate adjusted recidivism rates.

Exhibit 4 shows a 14.8 percent reduction in felony recidivism at the 36-month follow-up period. Youth in the DBT group have lower recidivism rates than the comparison group for all types of recidivism; however, these findings are not statistically significant.

Exhibit 4
Adjusted Recidivism Rates for 36-Month Follow-up Period

	Total	Felony	Violent
Comparison (N=65)	69.2%	46.2%	21.5%
DBT (N=62)	55.8%	40.2%	19.7%
Percent Reduction	-19.4%	-14.8%	-9.4%

Given the small number of youth included in the study, a 35 percent reduction in recidivism would be needed to achieve a statistically significant difference at the .05 probability level. Programs with large effect sizes typically achieve a 20 percent reduction in recidivism.[10] Thus, to expect a 35 percent decrease is probably not realistic.

Because recidivism is decreased, but statistical significance is not obtained, we test the adequacy of the sample size using a power analysis. Statistical significance could be obtained for the 14.8 percent reduction in felony recidivism if there were at least 150 youth in each study group.

Although there are observed reductions in recidivism for DBT participants, more conclusive results could be obtained with a larger sample size.

NEXT STEPS. A possible follow-up in the outcome evaluation would be to examine the impact of DBT imbedded within ITM. There are mental health units where youth receive ITM services at JRA's Echo Glen Children's Center and the Maple Lane School. By utilizing JRA mental health data, it may be possible to construct an appropriate comparison group to evaluate DBT imbedded within ITM.

[10] S. Aos, R. Lieb, J. Mayfield, J. Miller, & A. Pennucci (2004). *Benefits and costs of prevention and early intervention programs for youth* (Document No. 04-07-3091). Olympia: Washington State Institute for Public Policy.

Technical Appendix

Logistic Regression Results for Follow-up Periods by Type of Recidivism

This technical appendix summarizes the results of the logistic regression analyses. Regression analyses are performed—one for each type of recidivism, for each follow-up period. The odds ratios show how strongly DBT is associated with recidivism. Odds ratios of less than 1 indicate DBT is associated with a reduced likelihood of recidivism, while odds ratios above 1 indicate an increased likelihood. A probability level less than .05 is typically used to indicate a statistically significant reduction in recidivism. All models include the following independent variables: ISCA score, age at admission, age at release, male, white, JRA residential length of stay, and criminal history score.

			Type of Recidivism								
			Total			Felony			Violent Felony		
Follow-up Months	DBT N	Comparison N	Parameter Estimate	Odds Ratio	Sig. Level	Parameter Estimate	Odds Ratio	Sig. Level	Parameter Estimate	Odds Ratio	Sig. Level
6	63	65	-0.163	0.85	0.699	0.367	1.44	0.555	0.643	1.90	0.448
12	63	65	-0.071	0.93	0.864	0.016	1.02	0.973	0.505	1.66	0.423
18	63	65	-0.523	0.59	0.222	-0.392	0.68	0.393	-0.151	0.86	0.808
24	63	65	-0.557	0.57	0.195	-0.457	0.63	0.292	-0.012	0.99	0.982
30	62	65	-0.628	0.53	0.150	-0.311	0.73	0.456	-0.051	0.95	0.923
36	**62**	**65**	**-0.630**	**0.53**	**0.175**	**-0.240**	**0.79**	**0.559**	**-0.110**	**0.90**	**0.835**

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