Behavioral Parent Training for Children with ADHD

Program description:

This is a brief intervention (spanning a couple of months) that involves psychoeducation and teaching parents behavior management techniques, such as reinforcement and teacher correspondence. Many studies utilize or build on Barkley's Defiant Children program.

Typical age of primary program participant: 6

Typical age of secondary program participant: N/A

Meta-Analysis of Program Effects

Outcomes Measured	Primary or Secondary Participant	No. of Effect Sizes	Unadjusted Effect Sizes (Random Effects Model)			Adjusted Effect Sizes and Standard Errors Used in the Benefit-Cost Analysis					
						First time ES is estimated			Second time ES is estimated		
			ES	SE	p-value	ES	SE	Age	ES	SE	Age
Disruptive behavior disorder symptoms	P	3	-0.46	0.13	0.00	-0.12	0.13	7	-0.05	0.06	12
Attention deficit hyperactivity disorder symptoms	P	6	-0.40	0.10	0.00	-0.11	0.10	6	-0.05	0.04	11

Benefit-Cost Summary

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2011). The economic discount rates and other relevant parameters are described in Technical Appendix 2.

Program Benefits					Costs	Summary Statistics			
Participants	Taxpayers	Other	Other Indirect	Total Benefits		Benefit to Cost Ratio	Return on Investment	Benefits Minus Costs	Probability of a positive net present value
$143	$126	$97	$63	$430	$106	n/e	n/e	$536	98%

Detailed Monetary Benefit Estimates

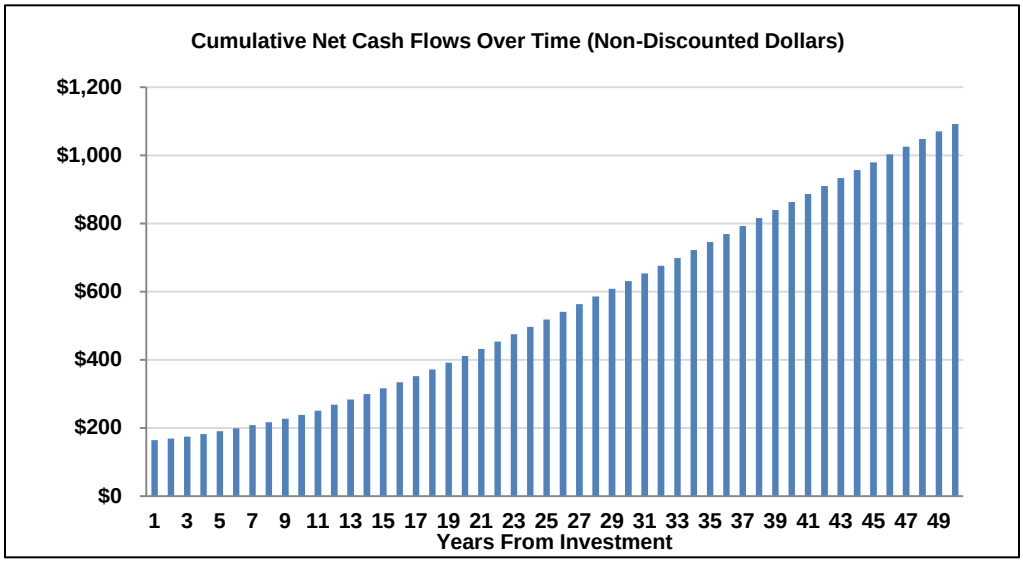
Source of Benefits	Benefits to: Participants	Taxpayers	Other	Other In-direct	Total Benefits
Crime	$0	$10	$29	$5	$45
Earnings via high school graduation	$52	$19	$0	$10	$80
Earnings via test scores	$69	$25	$0	$13	$107
K-12 grade repetition	$0	$2	$0	$1	$3
Health care costs for ADHD symptoms	$17	$50	$49	$25	$141
Health care costs for disruptive behavior symptoms	$6	$19	$19	$9	$53

Detailed Cost Estimates

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The uncertainty range is used in Monte Carlo risk analysis, described in Technical Appendix 2.

Program Costs			Comparison Costs			Summary Statistics	
Annual Cost	Program Duration	Year Dollars	Annual Cost	Program Duration	Year Dollars	Present Value of Net Program Costs (in 2011 dollars)	Uncertainty (+ or – %)
$846	1	2010	$950	1	2010	-$106	10%

Source: Based on therapist time, as reported in the treatment studies, as well as training costs and a flat fee for materials (e.g., manuals). Hourly therapist cost was based on the latest actuarial estimates of reimbursement by modality in WA State (DSHS).



Multiplicative Adjustments Applied to the Meta-Analysis

Type of Adjustment	Multiplier
1- Less well-implemented comparison group or observational study, with some covariates.	1.00
2- Well-implemented comparison group design, often with many statistical controls.	1.00
3- Well-done observational study with many statistical controls (e.g., IV, regression discontinuity).	1.00
4- Random assignment, with some RA implementation issues.	1.00
5- Well-done random assignment study.	1.00
Program developer = researcher	0.64
Unusual (not “real world”) setting	1.00
Weak measurement used	0.5

Adjustment factors were generated by examining studies for the treatment of children or adolescents with externalizing problems. Meta-regressions were conducted to test for the impact of different methodological factors on unadjusted effect size. Because research design rating and unusual setting were not significant predictors of effect size, no discounts were assigned. A dummy variable representing involvement of a program developer in the research study was a statistically significant predictor (B=-.189, p=.056), indicating that such studies had significantly more negative (i.e., larger) effect sizes than studies in which the developer was not involved. This coefficient was used to determine the 0.64 discount. Finally, we coded as weak measures outcomes that were based solely on the report of individuals who were involved in the intervention (either delivered it, as in the case of teachers, or received it, such as parents in a parenting program). Due to concern that such measures might be biased in favor of the programs reviewed, we utilized the standard Institute multiplier (0.5).

Additional Notes

Some studies included in this analysis compared the program (BPT) to control conditions that did not consist of an active treatment. Because policymakers in Washington are interested in the impact of this program above and beyond currently implemented treatments (i.e., treatment as usual), we reduced the effect size of studies utilizing a no treatment or waitlist control group in half to reflect a smaller impact that would be expected if these studies compared BPT to treatment as usual.

Studies Used in the Meta-Analysis

Anastopoulos, A. D., Shelton, T. L., DuPaul, G. J., & Guevremont, D. C. (1993). Parent training for attention-deficit hyperactivity disorder: Its impact on parent functioning. *Journal of Abnormal Child Psychology, 21*(5), 581-596.

Chacko, A., Wymbs, B. T., Wymbs, F. A., Pelham, W. E., Swanger-Gagne, M. S., Girio, E., . . . O'Connor, B. (2009). Enhancing traditional behavioral parent training for single mothers of children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 38*(2), 206-218.

Sonuga-Barke, E. J. S., Daley, D., Thompson, M., Laver-Bradbury, C., & Weeks, A. (2001). Parent-based therapies for preschool attention-deficit/hyperactivity disorder: A randomized, controlled trial with a community sample. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(4), 402-408.

Sonuga-Barke, E. J. S., Thompson, M., Daley, D., & Laver-Bradbury, C. (2004). Parent training for Attention Deficit/Hyperactivity Disorder: Is it as effective when delivered as routine rather than as specialist care? *British Journal of Clinical Psychology, 43*(4), 449-457.

Thompson, M. J. J., Laver-Bradbury, C., Ayres, M., Le Poidevin, E., Mead, S., Dodds, C., . . . Sonuga-Barke, E. J. S. (2009). A small-scale randomized controlled trial of the revised new forest parenting programme for preschoolers with attention deficit hyperactivity disorder. *European Child & Adolescent Psychiatry, 18*(10), 605-616.

van den Hoofdakker, B. J., van der Veen-Mulders, L., Sytema, S., Emmelkamp, P. M. G., Minderaa, R. B., & Nauta, M. H. (2007). Effectiveness of behavioral parent training for children with ADHD in routine clinical practice: A randomized controlled study. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(10), 1263-1271.