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BRIEF REPORT

Preliminary Results for an Adaptive Family Treatment for Drug Abuse in Hispanic Youth

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A small randomized trial investigated a new family-based intervention for Hispanic adolescents who met *DSM-IV* criteria for substance abuse disorder. The Culturally Informed and Flexible Family-Based Treatment for Adolescents (CIFFTA) is a tailored/adaptive intervention that includes a flexible treatment manual and multiple treatment components. The study used an “add on” design to isolate the effects on substance abuse, behavior problems, and parenting practices attributable to the newly developed components. Twenty-eight Hispanic adolescents and their families were randomized either to the experimental treatment or to traditional family therapy (TFT) and were assessed at baseline and 8-month follow-up. Despite the small sample, results revealed statistically significant time \times treatment effects on both self-reported drug use (marijuana + cocaine), $F(1, 22) = 10.59, p < .01, \eta^2 = .33$ and adolescent reports of parenting practices, $F(1, 22) = 9.01, p < .01, \eta^2 = .29$. Both sets of analyses favored CIFFTA participants. There was a significant time \times treatment effect, $F(1, 22) = 6.72, p = .02, \eta^2 = .23$, favoring CIFFTA on parent report of parenting practices using a composite that matched the variables used for adolescents, but only a nonsignificant trend, $F(1, 22) = 2.43, p = .13, \eta^2 = .10$, with a composite that used all parenting subscales. Parent reports of adolescent behavior problems did not show a significant time or time \times treatment effect. These results show the promise of this adaptive treatment for substance abuse in Hispanic adolescents and suggest the need for a larger randomized trial to fully investigate this treatment.

Keywords: adolescent, Hispanic, drug abuse treatment, evidence-based, family therapy

A recent review (Huey & Polo, 2008) highlights efficacious treatments for adolescent conduct and drug use problems (Henggeler, Clingempeel, Brondino, & Pickrel, 2002; Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008; Santisteban et al., 2003) but also concludes that no treatment qualifies as a “well established treatment” for drug abuse in Hispanic adolescents. This is an untenable state of affairs given that Hispanic adolescents: 1) make up 17% of the U.S. population ages 15–19 (U.S. Census Bureau Esti-

mates, 2007), 2) often experience unique stressors that can impact symptom development and service utilization, and 3) have high rates of drug use (Johnston, O’Malley, & Bachman, 2005) and associated risky sexual behaviors.

In a program of research designed to develop and test an integrated family based treatment for drug abuse in Hispanic adolescents, development was informed by recommendations from the psychotherapy research literature. One recommendation has been to increase the focus on hypothesized mediators (Kazdin & Nock, 2003). A second has been to consider “adaptive” interventions tailored to unique client needs and articulating decision rules that facilitate replication (Chorpita, 2007). A third has been to include themes important to Hispanic families that increase the treatment’s “external validity” (Bernal & Scharron-Del-Rio, 2001). The recommendations identified in this review were incorporated into our treatment development efforts (Santisteban & Mena, 2009). Individual, family, and psycho-educational sessions included content such as parenting practices, acculturation and immigration stressors, drug use, risky sexual behavior, and motivation to change. Interventions were designed to be delivered within an adaptive treatment framework with decision-making rules.

The research design of the study tested an “add on”

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enhancement strategy by comparing a once-per-week conjoint family therapy to the new twice-per-week integrated family-based treatment. Although at first it may seem that any increase in intervention dosage would yield superior outcomes, one of the largest collaborative clinical trials ($N = 600$ adolescents with drug abuse problems) found no differences in drug use outcomes between a 5-session cognitive behavioral therapy treatment, a 12-session cognitive behavioral therapy treatment, an 18–22-session condition that combined family and cognitive behavioral therapy interventions, and two intensive conditions that combined family and individual interventions (Dennis et al., 2004). These findings, which suggest that a mere increase in sessions is not necessarily better, are also consistent with findings that show that it is quite difficult to document differential outcomes when comparing active and bona fide interventions (Wampold et al., 1997). The purpose of this brief report is to present preliminary findings of a Stage I randomized trial that investigated the impact of an adaptive family-based treatment on substance use, behavior problems, and hypothesized family-level mediators in Hispanic adolescents who met criteria for a substance abuse disorder. The study investigated whether there was a detectable impact that might be attributable to the program enhancements.

Method

Twenty-eight Hispanic adolescents who met the following criteria: (a) were 14 to 17 years old, (b) lived with a parent or guardian who came to the United States from a Spanish-speaking country, and (c) met *DSM-IV* criteria for a substance abuse disorder, were included in the study. In each family at least one parent figure joined the adolescent during assessments and treatment. Participants were referred by a local Juvenile Addictions Receiving Facility and by Department of Juvenile Justice Diversion programs. All of the 28 families that agreed to participate provided consent and assent, completed the baseline assessment, and were randomized. Of the 28 cases, 25 had both parents and adolescents completing the final 8-month assessment (See CONSORT Figure 1). The small sample size is consistent with Stage I treatment development guidelines (Rounsaville, Carroll, & Onken, 2001). The study was approved by the university Institutional Review Board. Family consent and adolescent assent were obtained in English and Spanish. Participants were randomized into the Culturally Informed and Flexible Family-Based Treatment for Adolescents (CIFFTA) or Traditional Family Therapy (TFT) conditions. Randomization was stratified by gender and drug use severity by a senior investigator. Youth and families were treated for approximately 4 months in each condition. Data were collected at baseline, 4-months, and 8-months post-intake at the intervention site. Analyses focused on baseline and 8-month assessments because not all participants had completed treatment by the 4-month time-point. There were no significant differences between conditions on adolescent gender and age, annual family income, and adolescent and parent Spanish-language preference.

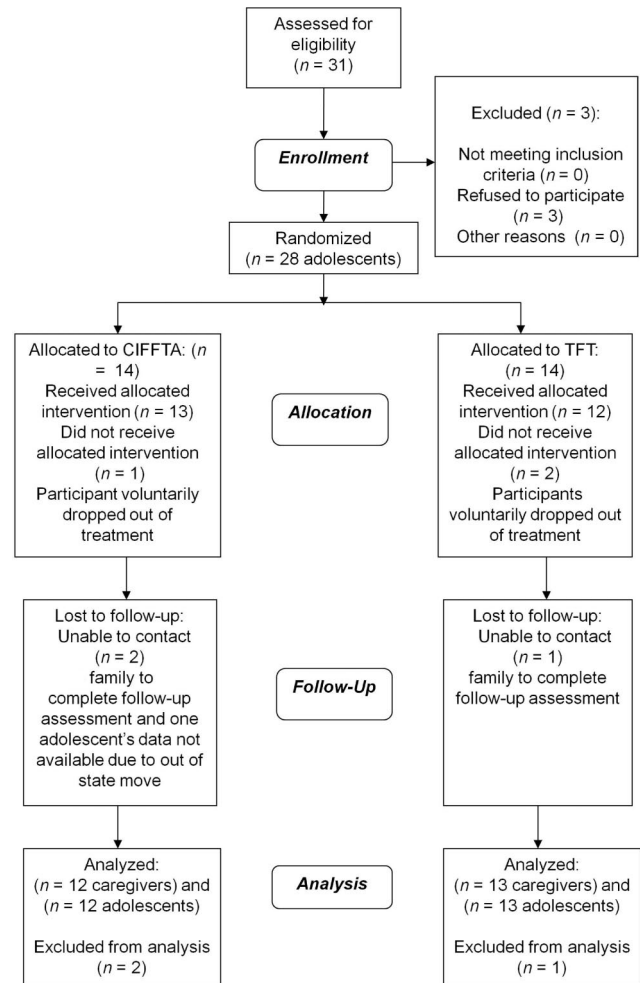


Figure 1. CONSORT Participant Flow Diagram.

Measures were selected that had been used with Hispanic populations, had strong psychometric properties, and were available in Spanish and English. Masters-level assessors who had several years of interviewing experience and were fluent in Spanish and English were used. The Revised Behavior Problems Checklist (Quay & Peterson, 1987) Conduct Disorder and Socialized Aggression subscales were used to create a composite score of parent reported adolescent behavior problems. Internal consistency reliability was high at baseline and follow-up ($\alpha > .90$). The Youth Self-Report (Achenbach, 1991) “externalizing” behaviors score was used to capture adolescent self-reports of behavior problems. Internal consistency reliability was high at baseline and follow-up ($\alpha > .90$). The Parenting Practices Questionnaire (Gorman-Smith, Tolan, Zelli, & Huesmann, 1996) captured parent reports on their own Positive Parenting, Discipline Effectiveness, Discipline Avoidance, Curfew Rules, Time Spent Together and Extent of Involvement, which were combined into a composite score. Adolescents reported on two aspects of parent behaviors (Positive Parenting and Extent of Involvement) that were combined into a composite score. Internal consistency was

acceptable at baseline and follow-up (α s .79 to .94). Drug use was based on adolescent reports on the Timeline Follow-back over a 31-day period (Sobell et al., 2003) and was corroborated by urine toxicology, which was tested by a certified laboratory.

CIFFTA has structural family therapy (Minuchin & Fishman, 1981) as its foundation, integrates themes that are particularly relevant for Hispanic families, and was implemented by experienced family therapists over 16 weeks in a two-session-per-week format. CIFFTA was delivered using a flexible and modular design (Santisteban & Mena, 2009) and the family work was integrated with individual interventions (e.g., Motivational Interviewing and skills training), and psycho-educational modules (e.g., parenting, drug education, risky sexual behavior, acculturation-related stressors). Family therapy and some psycho-educational modules were delivered to individual families in a conjoint format. Individual treatment and certain psycho-educational modules (e.g., drug education) were delivered to the adolescent alone. Parenting modules were delivered to only parent figures of each individual family. Treatment in the TFT condition was implemented in once-per-week format and conducted by therapists experienced in structural family therapy and adolescent drug abuse treatment.

Results

Baseline ANOVA showed that TFT adolescents ($M = 69.62$, $SD = 14.85$) reported significantly greater externalizing problems than CIFFTA participants ($M = 54.23$, $SD = 12.28$), $F(1, 27) = 8.95$, $p < .01$, $\eta^2 = .26$. Parent reports of child externalizing behaviors were not significantly different between conditions. Except for youth self-report of externalizing behavior, all subsequent analyses included baseline externalizing problems as a covariate.

Consistent with the “add on” design of this study, the number of family sessions received was similar in the two conditions (CIFFTA: $M = 16.25$, $SD = 6.70$; TFT: $M = 12.15$, $SD = 4.12$), $F(1, 24) = 3.45$, ns , $\eta^2 = .13$, although therapy sessions in TFT ($M = 64.21$ min., $SD = 6.88$) were longer ($M = 57.75$ min., $SD = 5.40$), $F(1, 24) = 6.74$, $p < .05$, $\eta^2 = .23$. CIFFTA participants received more individual therapy sessions (CIFFTA: $M = 13.25$, $SD = 5.31$; TFT: $M = 0.31$, $SD = 0.63$), $F(1, 24) = 76.31$, $p < .001$, $\eta^2 = .77$, and psycho-educational modules (CIFFTA: $M = 7.58$, $SD = 3.75$; TFT: $M = 0$), $F(1, 24) = 53.28$, $p < .001$, $\eta^2 = .70$, than TFT participants received.

Independent raters blind to condition and trained to an interrater reliability of $\kappa = .80$ used a checklist to measure treatment adherence. Nine to 12 videotapes from each component (CIFFTA-family, TFT-family, psycho-educational modules, individual treatment), were chosen randomly. Ratings of CIFFTA family sessions and TFT family sessions showed that family interventions were delivered in comparable ways and with no significant between-condition differences in ratings. Ratings of CIFFTA individual sessions and psycho-educational sessions showed that therapists delivered the intended individual therapy and didactic inter-

ventions and that the ratings could differentiate therapist behaviors between the two types of sessions.

Drug Use, Behavior Problems, and Parenting Practices: Outcomes

Separate 2 (treatment type: TFT vs. CIFFTA) \times 2 (time: baseline vs. 8-month follow-up) mixed factorial ANCOVA with externalizing behaviors as the covariate were used for drug use, parent-reported behavior problems, and parenting practices. ANOVA was used for child-reported behavior problems. Because of the modest sample size and the increased possibility of Type II error, experiment-wise error was not adjusted through Bonferroni correction or other means. Description of effect sizes followed Cohen's (1988) guidelines: small, $\eta^2 = .01$; medium, $\eta^2 = .06$; large, $\eta^2 = .14$. Drug use and adolescent-reported parenting practices are shown in Figure 2.

Drug use. Marijuana and cocaine use showed substantial positive skew and were log-transformed, greatly improving the normality of the residuals. As Table 1 shows, despite the small sample size, results revealed a large-sized time \times treatment effect on drug use (marijuana + cocaine), $F(1, 22) = 10.59$, $p < .01$, $\eta^2 = .33$, with CIFFTA participants showing more improvement. When analyzed sepa-

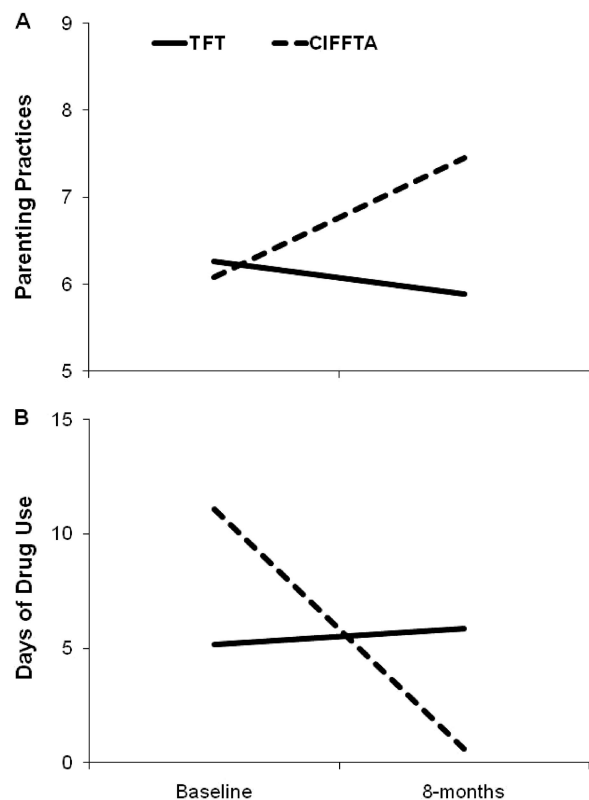


Figure 2. Means of adolescent reports in Traditional Family Therapy (TFT) or Culturally Informed and Flexible Family-Based Treatment for Adolescents (CIFFTA) at baseline and 8-month follow-up on: A) Parenting Practices—Adolescent Report and B) Days of Drug Use.

Table 1
Means, Standard Deviations, and ANOVA/ANCOVA Results for Drug Use, Behavior Problems, and Parenting Practices

Variable	TFT (<i>n</i> = 13)		CIFFTA (<i>n</i> = 12)		Time × Treatment			Time		
	Baseline <i>M</i> (<i>SD</i>)	8-months <i>M</i> (<i>SD</i>)	Baseline <i>M</i> (<i>SD</i>)	8-months <i>M</i> (<i>SD</i>)	<i>F</i>	<i>p</i>	η^2	<i>F</i>	<i>p</i>	η^2
Adolescent-reported Drug Use ^a										
Both Drugs	5.15 (4.93)	5.85 (9.16)	11.08 (11.31)	0.58 (1.00)	10.59	<.01	0.33	0.75	.40	.03
Marijuana	4.54 (4.31)	5.46 (9.08)	7.75 (9.11)	0.50 (0.90)	7.53	.01	0.26	0.92	.35	.04
Cocaine	0.62 (0.96)	0.38 (0.96)	3.33 (8.54)	0.08 (0.29)	3.09	.09	0.12	0.40	.53	.02
Parent-reported Behavior Problems										
Composite	82.56 (22.04)	61.95 (19.48)	69.19 (23.98)	59.69 (22.23)	2.57	.12	.10	1.89	.18	.08
Adolescent-reported Behavior Problems										
Externalizing	69.12 (15.33)	59.02 (18.26)	53.62 (12.82)	47.63 (7.15)	0.56	.46	.02	8.63	<.01	.27
Parenting Practices (Adolescent-report and Parent-report)										
Adolescent composite	6.26 (1.52)	5.89 (1.89)	6.08 (2.09)	7.45 (1.54)	9.01	<.01	.29	0.47	.50	.02
Parent composite	7.64 (1.28)	7.49 (1.14)	7.70 (0.90)	8.00 (1.10)	6.72	.02	.23	7.53	.01	.26

Note. TFT = Traditional Family Therapy; CIFFTA = Culturally Informed and Flexible Family-based Therapy for Adolescents.

^a Logarithmic transformation of drug use variables for ANCOVA; actual *M* and *SD* shown.

rately, results showed a large-size time × treatment effect on marijuana, $F(1, 22) = 7.53, p < .05, \eta^2 = .26$, and a nonsignificant trend for a small time × treatment effect on cocaine, $F(1, 22) = 3.09, p = .09, \eta^2 = .12$. Although not significant, urine results for marijuana showed a similar pattern favoring CIFFTA. Other drugs were very infrequent, with only two adolescents reporting methamphetamine use and no other drug emerging on urine testing. One adolescent refused to supply a urine sample at baseline.

Behavior problems. A parent-reported behavior problem composite yielded no significant time or time × treatment effects. Although there were substantial mean changes in both conditions, the large standard deviations within a small sample may have contributed to the nonsignificant time effect despite a medium effect size. Results showed only a large time effect on child-reported externalizing behaviors, $F(1, 23) = 8.63, p < .01, \eta^2 = .27$.

Parenting practices—adolescent report. Analysis of a parenting practices (adolescent report) composite (Positive Parenting and Extent of Involvement) yielded a large-sized time × treatment effect, $F(1, 22) = 9.01, p < .01, \eta^2 = .29$, favoring CIFFTA. Adolescent perceptions of parenting practices showed large-size time × treatment effects for both Positive Parenting, $F(1, 22) = 5.64, p < .05, \eta^2 = .20$, and Extent of Involvement, $F(1, 22) = 8.63, p < .01, \eta^2 = .28$.

Parenting practices—parent report. Results showed a nonsignificant trend for a medium-sized time × treatment effect on the parenting practices (parent report) composite using all available subscales, $F(1, 22) = 2.43, p = .13, \eta^2 = .10$, favoring CIFFTA. When a composite was created with the same parent-reported subscales that were used for the adolescent-reported parenting composite (Positive Parenting and Extent of Involvement), there was a significant time × treatment effect, $F(1, 22) = 6.72, p = .02, \eta^2 = .23$, favoring CIFFTA.

Discussion

The findings of this study suggest that it may be possible to enhance the effect of family therapy on both drug use and parenting practices by adding components that strategically target important drug, cultural, and parenting processes, and by delivering these within an adaptive framework. Changes achieved in drug use and parenting practices were consistent with CIFFTA's targeting of multiple components on those two major areas (Santisteban & Mena, 2009). Interestingly, the two parenting practices subscales that showed significant change were Positive Parenting and Extent of Involvement. These effects were found for both adolescent and parent reports. Other aspects of parenting were not affected by the intervention. Our results are meaningful in the context of the Dennis et al. (2004) findings that merely increasing dosage and/or combining family and individual components alone do not lead to increased impact on recalcitrant problems. These findings provide preliminary support for the position that researchers and clinicians should develop and utilize treatments that address salient cultural characteristics, that include rules for tailoring and avoiding a

“one-size-fits-all” approach, and that target core family processes.

Limitations of this study should be noted. First, the small sample size may have produced less stable effect size estimates than a larger sample and did not allow formal mediation analysis. The randomization of 14 cases per cell is at the lower limit of 15–30 cases per cell recommended by Rounsaville et al. (2001). Second, the add on design that included more individual and psycho-educational sessions did not permit the investigators to rule out the possibility that more dosage alone was responsible for improvement. Future research should follow up on promising Stage I studies with larger Stage II studies that include equivalent dosages across conditions and formal tests of mediation. The continued study and improvement of adaptive treatment frameworks is also highly encouraged.

References

- Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4–18, YSR, and TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.
- Bernal, G., & Scharron-Del-Rio, M. R. (2001). Are empirically supported treatments valid for ethnic minorities? Toward an alternative approach for treatment research. *Cultural Diversity & Ethnic Minority Psychology, 7*, 328–342. doi:10.1037/1099-9809.7.4.328
- Chorpita, B. F. (2007). *Modular cognitive-behavioral therapy for childhood anxiety disorders*. New York: Guilford Press.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Dennis, M., Godley, S. H., Diamond, G., Tims, F. M., Babor, T., Donaldson, J., . . . Funk, R. (2004). The Cannabis Youth Treatment (CYT) study: Main findings from two randomized trials. *Journal of Substance Abuse Treatment, 27*, 197–213. doi:10.1016/j.jsat.2003.09.005
- Gorman-Smith, D., Tolan, P. H., Zelli, A., & Huesmann, L. R. (1996). The relation of family functioning to violence among inner-city minority youths. *Journal of Family Psychology, 10*, 115–129. doi:10.1037/0893-3200.10.2.115
- Henggeler, S., Clingempeel, W., Brondino, M., & Pickrel, S. (2002). Four-year follow-up of multisystemic therapy with substance-abusing and dependent juvenile offenders. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*, 868–874. doi:10.1097/00004583-200207000-00021
- Huey, S., & Polo, A. (2008). Evidence-based psychosocial treatments for ethnic minority youth. *Journal of Clinical Child and Adolescent Psychology, 37*, 262–301. doi:10.1080/15374410701820174
- Johnston, L., O'Malley, P. M., & Bachman, J. G. (2005). *Monitoring the future. National survey results on drug use, 1975–2004: Vol. 1. Secondary school students* (NIH Publication No. 05–5727). Rockville, MD: National Institute on Drug Abuse.
- Kazdin, A. E., & Nock, M. K. (2003). Delineating mechanisms of change in child and adolescent therapy: Methodological issues and research recommendations. *Journal of Child Psychology and Psychiatry, 44*, 1116–1129. doi:10.1111/1469-7610.0019
- Liddle, H., Dakof, G., Turner, R., Henderson, C., & Greenbaum, P. (2008). Treating adolescent drug abuse: A randomized trial comparing multidimensional family therapy and cognitive behavior therapy. *Addiction, 103*, 1660–1670. doi:10.1111/j.1360-0443.2008.02274.x
- Minuchin, S., & Fishman, C. H. (1981). *Family therapy techniques*. Cambridge, MA: Harvard University Press.
- Quay, H. C., & Peterson, D. R. (1987). *Manual for the Revised Behavioral Problem Checklist*. Unpublished manuscript, Department of Psychology, University of Miami, Coral Gables, FL.
- Rounsaville, B. J., Carroll, K. M., & Onken, L. S. (2001). A stage model of behavioral therapies research: Getting started and moving on from stage I. *Clinical Psychology: Science and Practice, 8*, 133–142. doi:10.1093/clipsy/8.2.133
- Santisteban, D., & Mena, M. (2009). Culturally informed and flexible family-based treatment for adolescents: A tailored and integrative treatment for Hispanic youth. *Family Process, 48*, 253–268. doi:10.1111/j.1545-5300.2009.01280.x
- Santisteban, D. A., Coatsworth, J. D., Perez-Vidal, A., Kurtines, W. M., Schwartz, S. J., LaPerriere, A., & Szapocznik, J. (2003). The efficacy of brief strategic family therapy in modifying behavior problems and an exploration of the mediating role that family functioning plays in behavior change. *Journal of Family Psychology, 17*, 121–133. doi:10.1037/0893-3200.17.1.121
- Sobell, L. C., Agrawal, S., Sobell, M. B., Leo, G. I., Young, L. J., Cunningham, J. A., & Simco, E. R. (2003). Comparison of a quick drinking screen with the Timeline Followback for individuals with alcohol problems. *Journal of Studies on Alcohol, 64*, 858–861. Retrieved from <http://www.jsad.com>
- U.S. Census Bureau Estimates. (2007). Census 2007 Summary File 2 [Custom Report]. Retrieved June 12, 2008, from Census 2007 database.
- Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: Empirically, “all must have prizes.” *Psychological Bulletin, 122*, 203–215. doi:10.1037/0033-2909.122.3.203

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