

Effective Psychosocial Treatments of Conduct-Disordered Children and Adolescents: 29 Years, 82 Studies, and 5,272 Kids

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Reviews psychosocial interventions for child and adolescent conduct problems, including oppositional defiant disorder and conduct disorder, to identify empirically supported treatments. Eighty-two controlled research studies were evaluated using the criteria developed by the Division 12 (Clinical Psychology) Task Force on Promotion and Dissemination of Psychological Procedures. The 82 studies were also examined for specific participant, treatment, and methodological characteristics to describe the treatment literature for child and adolescent conduct problems. Two interventions were identified that met the stringent criteria for well-established treatments: videotape modeling parent training program (Spaccarelli, Cotler, & Penman, 1992; Webster-Stratton, 1984, 1994) and parent-training programs based on Patterson and Gullion's (1968) manual Living With Children (Alexander & Parsons, 1973; Bernal, Klinnert, & Schultz, 1980; Wiltz & Patterson, 1974). Twenty of the 82 studies were identified as supporting the efficacy of probably efficacious treatments.

As part of the Division 12 Task Force on Effective Psychosocial Interventions: A Lifespan Perspective (Johnson, 1995), our task was to review the psychosocial treatment outcome literature for children and adolescents with conduct problem behavior, including specific problem behaviors as well as oppositional defiant disorder (ODD) and conduct disorder (CD), and to identify empirically supported treatments (ESTs) for these youngsters. As noted by Lonigan, Elbert, and Johnson (this issue) in their introduction, there are many ways such treatments might be defined. In this review of studies, we apply criteria for probably efficacious treatment and well-established treatment, as originally defined by the Division 12 Task Force on Promotion and Dissemination of Psychological Procedures (1995; see also Chambless et al., 1996) and that we refer to in this article as the "Chambless criteria."

This article describes the methods and decision rules we used in identifying the probably efficacious treatments and well-established treatments for conduct problems in children and adolescents and the descriptive and methodological characteristics of the treatment literature that we reviewed. We list the treatments identified as probably efficacious and well established

from this process and their supporting studies, and we provide a brief description of treatments identified as well established. The current list of studies spans the years from 1966 to 1995 and is a "working list," in that there may be important treatments we have missed in our search. Our task is a continuing one, and we encourage and welcome nominations of additional treatment outcome studies that are not included in the present list.¹

Identifying the "82"

We identified 82 outcome studies of treatment for conduct problem children that form the database for our review. *The Clinical Psychologist* has periodically published calls for nominations for the empirical lyvalidated treatments list and literature submitted in response to such calls relevant to child and adolescent conduct problems was forwarded to us for consideration. In addition, we reviewed the articles included in four large meta-analyses of child treatment: Weisz, Weiss, Alicke, and Klotz (1987); Weisz, Weiss, Han, Granger, and Morton (1995); Serketich and Dumas (1996); and Durlak, Fuhrman, and Lampman (1991). The four meta-analyses had conducted literature searches to identify the existing child treatment outcome studies, and we are grateful that we were able to

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that we were able to take advantage of such extensive prior work. The meta-analyses included studies published up to 1993. To locate treatment outcome studies published between 1993 and 1995, we used techniques similar to those described by Weisz et al. (1995; e.g., computer literature searches, paging through journals by hand²).

From these initial sources, we retained all articles that described a prospective study of a treatment in which a measured goal of the intervention was to decrease conduct problem behavior. Thus, retrospective studies in which hypotheses for the effectiveness of an intervention and identification of participants were made after an intervention had already been implemented were not included. We defined a conduct problem as any behavior that is listed in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association [APA], 1994) as a symptom of ODD or CD or a problem description that is consistent or synonymous with these symptoms, such as temper tantrums, disruptive classroom behavior, or delinquency. If a treatment was applied to a sample that was heterogeneous with respect to problems but explicitly reported having children or adolescents with conduct problems in the sample, or if the treatment was applied to children with comorbid diagnoses that explicitly included conduct problems as one component, it was retained in our review. Treatments for substance abuse were not included in our purview because substance abuse comprises a distinct *DSM-IV* diagnostic category and has a large and separate literature of its own. We also did not include components analyses (e.g., time-out with no back up vs. time-out with a spank back up), but instead addressed only complete treatments, protocols, or "packages" intended for use in actual practice. Finally, we included only studies that were published in a peer-reviewed journal; treatment evaluations described in dissertations or chapters were not reviewed. Our reason for this exclusion was our attempt to increase the validity of our decisions by relying on the peer-review process to promote completeness and accuracy of reporting, analyzing, and interpreting the study design and results.

Use of these methods yielded 82 studies investigating treatment outcomes with conduct-disordered children or adolescents for our review.³ These 82 studies included 3,917 boys, 883 girls, and 472 children with

unspecified sex. In the 26 studies that reported children's mean ages, the average mean age of the children was 9.89 years ($SD = 3.98$).

Methodological Sophistication

The Chambless criteria for well-established treatments and probably efficacious treatments are presented by Lonigan et al. (this issue). To identify studies of conduct problem treatments meeting the Chambless criteria that include the phrase "good design," we selected the four minimal criteria of good design described by the Division 12 Task Force on Effective Psychosocial Interventions: A Lifespan Perspective (Johnson, 1995). Specifically, use of comparison group, random assignment, reliable measures,⁴ and descriptive statistics were included in our review of each of the studies. We also recorded seven additional criteria identified by the task force for a methodologically sophisticated study, some of which are included in additional Chambless criteria for well-established treatments. These criteria allowed us to describe the methodological sophistication of the 82 studies of treatment outcome for children with conduct-disordered behavior.

Table 1 displays the methodological criteria we recorded and the percentage of treatment outcome studies with conduct-disordered children and adolescents that met each criterion. Summarized in this way, an impressive picture emerges of the methodology that characterizes this literature. Over half of the criteria for methodological sophistication have been used in over half of the studies published. In addition, by including studies from only peer-reviewed journals, we were able to allow editors to determine that appropriate statistical treatment of data was used. The data in Table 1 show that all but one of the 81 group-design studies⁵ used a comparison group to rule out alternative explanations for significant changes resulting from treatment. Most of the studies (84%) also used reliable measures of child conduct to assess treatment outcome. Use of

³An annotated list of the 82 studies reviewed, describing basic treatment, participant, and design characteristics, including the Chambless criteria met, is available on the Section 1 World Wide Web site (<http://www.psy.fsu.edu/~lonigan/section1.htm>).

⁴A measure was operationally defined as having reliability established if this fact was reported in the study article, if the measure was cited in Sattler's (1992) *Assessment of Children*, or if the author reported a reliability coefficient for the measure established on the study sample. When studies had several measures—some with established reliability and some without established reliability—we required that over half of the measures used to evaluate the primary outcome (e.g., child conduct) have established reliability to meet the criterion of reliable measures. When studies had measures with both established and not-established reliability, Chambless criteria were coded only for the measures with established reliability.

⁵The one single-case design study included in our review was Guevremont and Foster (1993).

²Journals included *Behavior Modification*, *Behavior Research and Therapy*, *Behavior Therapy*, *Child and Family Behavior Therapy*, *Child Development*, *Cognitive Therapy and Research*, *Journal of Clinical Psychology*, *Journal of Abnormal Child Psychology*, *Journal of Applied Behavior Analysis*, *Journal of Clinical Child Psychology*, *Journal of Consulting and Clinical Psychology*, *Journal of Counseling Psychology*, and *Journal of the American Academy of Child and Adolescent Psychiatry*.

Table 1. Percentage of 82 Child and Adolescent Treatment Outcome Studies Meeting Selected Methodological Criteria

Criteria	Percentage of Studies Meeting Criterion
Used a Comparison Group ^{ab}	98.8
Used Reliable Measures ^{ab}	84.0
Used Random Assignment to Groups ^{ab}	75.3 ^c
Reported Attrition Data	72.5
Had 12 or More Participants Per Group	56.8 ^c
Used Masked Assessment	50.6
Used a Treatment Manual ^b	40.0
Reported 6-Month Follow-Up Data	37.5
Reported Descriptive Statistics ^{ab}	32.1
Had 25 or More Participants Per Group	29.6 ^c
Reported Treatment Integrity Data	28.8

Note: All studies used appropriate statistical methods as defined by publication in a peer-reviewed journal.

^aIncluded in the "minimal criteria" for defining good treatment design. ^bOne of the criteria required for a well-established treatment study. ^cPercentage based on only the 81 group-design studies.

measures with established reliability lends internal validity to the results by increasing confidence that differences found between the treatment conditions are real. Further, three fourths of the outcome studies used random assignment of participants to groups, which assures that the differences between treatments are not due to systematic bias.

The last criterion included in the minimal criteria for good experimental design is the use of descriptive statistics. These are typically percentages or means that are calculated to describe the treatment-relevant characteristics of the participants. They describe the characteristics thought to affect the extent to which a treatment will "work" for a child with similar characteristics. The descriptive statistics we selected as essential were sex, age, race, socioeconomic status (SES), and reliable diagnosis or clear specification of the problems that led to selection for the study and were the focus of treatment. Unlike the other minimal criteria for good design, relatively few studies in our review (32%) described the participants sufficiently. Closer inspection of the data indicated that 49% of the studies did not report the racial/ethnic breakdown, 42% of the studies did not report SES data, and 5% did not report the criteria used for participant selection (e.g., diagnosis of ODD or CD, specific child problems such as temper tantrums, aggressiveness). It was the earlier studies that accounted for most of the failures to report in all of the five categories of participant characteristics. To summarize the 82 outcome studies in terms of minimal criteria for good experimental design then, the data show that a substantial majority of the studies of conduct-disordered children and adolescents have used randomized group designs and reliable measures, but relatively few of these studies have reported descriptive statistics sufficiently to indicate with confidence the populations to whom the results can generalize.

Table 1 shows additional methodological characteristics that are features of a sophisticated design for

treatment outcome and the percentage of studies in our review that included that feature. The criterion labeled *masked assessment* typically refers to keeping interview raters or observation coders uninformed as to the treatment group assignment of the participants being assessed. This criterion is closely related to measurement reliability. Interrater agreement greatly increases one's confidence in the accuracy of ratings but only if the raters are uninformed, yet only half of the studies we reviewed reported using masked assessment. Although it is possible that some studies using uninformed assessors did not report this in the article, the peer-review process would be expected to catch such an oversight in most cases. We coded such articles as lacking masked assessment.

The number of participants included in the treatment group(s) is a pivotal decision in the study design because it determines whether the study has enough power to detect true differences that may exist between treatments. In addition, there may be important moderating effects of participant characteristics that cannot be examined due to inadequate power. Although we recognize that determination of an adequate sample size is dependent on many factors, we selected 12 participants per treatment condition as an arbitrary lower limit for determining differences. Although, as pointed out by Chambless and Hollon (in press), a study needs 50 participants per condition to have the conventional 80% power for a significance test of a medium difference between two treatment groups; the median sample size per treatment condition across psychotherapy research is 12 (Kazdin & Bass, 1989). Therefore, we selected 12 as a meaningful point of comparison to evaluate outcome studies in the child conduct problem literature. For purposes of establishing "equivalence" to an already-established treatment, however, we selected 25 participants per treatment condition as an arbitrary lower limit, based on the recommendation from the Task Force on Promotion and Dissemination of

Psychological Procedures (1995). The data for studies with conduct-disordered children in Table 1 suggest that many of these studies, like outcome studies in general, are losing important information on potentially efficacious treatments due to insufficient power.

Closely related to sufficient sample size is the attrition rate in treatment outcome studies. Attrition, which refers to the loss of participants before the outcome and follow-up evaluations, reduces the number of participants who can be included in the major analyses of change and thereby affects the power of the study to detect treatment effects. Attrition can also provide one index of treatment outcome—families may drop out of treatment because it is not effective for their child. Whatever the reason for dropping out, attrition limits the generalizability of results that are based on treatment completers. Further, differential attrition shifts the random composition of the treatment groups and must be taken into account in analysis and interpretation of data. In treatment studies of conduct-disordered children, attrition ranges from 30% to 59% (Prinz & Miller, 1994) and is, consequently, highly salient in these studies. Among the studies we reviewed, 73% reported attrition rates for the treatment conditions, suggesting that the significance of attrition for treatment research in this area is recognized.

The use of treatment manuals to guide the course of therapy is not new. Probably the first manualized treatment for conduct-disordered children and adolescents was Patterson and Gullion's (1968) parent-training approach outlined in the manual *Living With Children*. It has been only within the last 5 to 10 years, however, that the necessity of manuals to assure accurate implementation and replication of treatments has been fully recognized. The fact that only 40% of the studies included in our review used a treatment manual is likely in part a reflection of the recency of this trend. Currently, use of treatment manuals is virtually required in treatment outcome studies (Hibbs et al., in press) and is a basic requirement for meeting the Chambless criteria for well-established treatments as well.

Assessment of treatment integrity is a criterion of methodological sophistication that is dependent on the presence of a treatment manual and serves to document adherence to the protocol. In our review, studies were credited with reporting treatment integrity data when the percentage of agreement between the treatment manual and the observed content of the actual therapy sessions was reported. Twenty-nine percent of the treatment outcome studies of conduct-disordered children had documented treatment integrity.

The final criterion of methodologically sophisticated studies, inclusion of 6-month (or longer) follow-up data, was reported by 38% of the studies we reviewed. Despite the importance of follow-up data, we did not attempt to evaluate treatment efficacy based on follow-up results because of wide variation in the

length of follow-up intervals and the potential for differential drop out in the follow-up samples. Short-term follow-up data (less than 6 months) typically show good maintenance of treatment gains after the immediate posttreatment "high," but long-term follow-up (i.e., beyond 12 months), although less rigorously evaluated in general, has typically found poor maintenance for a substantial proportion of treatment completers (Dumas, 1989; Eyberg, Edwards, Boggs, & Foote, in press; Kazdin, Bass, Ayres, & Rodgers, 1990; McMahon & Wells, 1989). Although there is a point of diminishing returns in following treatment effects, conduct problems in children are a significant risk factor for later antisocial behavior and need to be followed throughout the period of childhood to identify factors associated with later recurrence, when it happens, and to develop effective after-care strategies.

Criteria for ESTs

Once the 82 treatment-outcome studies of conduct-disordered children had been coded according to the criteria of methodological sophistication, we turned back to the Chambless criteria for ESTs (see Lonigan et al., this issue). In both the well-established treatment and probably efficacious treatment categories, there are separate criteria for treatment support in single-case and between-group design studies. Because the 82 studies in our review included only 1 study using single-case design (Guevremont & Foster, 1993), we did not further consider the criteria regarding single-case designs. The starting point for establishing empirical support for treatments is the assumption that efficacy can be demonstrated only in controlled research (e.g., as opposed to correlational research). Control groups assure that the observed effects are due to the treatment under study and not to confounding factors such as passage of time, effects of psychological assessment, or placebo effects.

Well-Established Treatment

The first criterion for a well-established treatment is the identification of two good between-group design studies demonstrating efficacy by being: superior to pill or psychological placebo or another treatment, or equivalent to an already-established treatment in studies that have adequate statistical power. The interpretation of equivalence to an established treatment as evidence of efficacy has a number of problems, outlined by Chambless and Hollon (in press), including the large sample size needed for adequate statistical power to interpret equivalence from null results and the fact that no study in either the adult or child psychotherapy literature has used the recommended statistical methodology

needed to establish equivalence. Rather than ignore all of the comparative literature, however, Chambless and Hollon recommended, as an interim solution, that studies with 25 to 30 participants per group (thus allowing a reasonably stable estimate of treatment effects) and with no trends for the established treatment to be superior be accepted as equivalent in efficacy for present purposes.

Replication protects against drawing a false conclusion about a treatment based on some anomaly affecting the study results and is a key feature of the well-established treatments. The criteria for a well-established treatment include the stipulation that a replication study must be conducted by independent investigators or investigatory teams. For this review, we defined studies by independent teams as studies conducted in laboratories at different institutions with different authors. Among the studies of conduct-disordered children, we found that replication by independent teams was rare.

The final criteria for studies used to identify a well-established treatment include use of a treatment manual to guide treatment and clear specification of the participant characteristics (see Table 1; Lonigan et al., this issue). Both of these criteria were considered in describing methodologically sophisticated studies and discussed earlier. These two criteria were the ones most frequently not met by studies that were otherwise methodologically sophisticated. Recall that 60% of the studies reviewed did not report using a treatment manual and 78% did not fully describe the participants. It was most commonly the racial/ethnic data for the sample that were missing (49% of studies). These two criteria had the greatest influence on which studies were finally included in the lists of both the well-established treatments and the probably efficacious treatments.

Probably Efficacious Treatment

There are four alternative criteria for the identification of a probably efficacious treatment (see Table 2; Lonigan et al., this issue), but only the first two criteria were relevant to the current review: There must be two studies showing that the treatment is more effective than wait-list control or two studies otherwise meeting criteria for a well-established treatment but conducted by the same investigator or research team. A study that demonstrates the superiority of a treatment over a wait-list control group, although not adequate for use in determining a well-established treatment, is a recommended first demonstration of efficacy (Kazdin, 1986), and a replication increases confidence that the obtained treatment effect was not due to chance. For treatments designated as probably efficacious on the basis of being more effective than a waiting-list control group, however, experimenter bias cannot be

ruled out. The second criterion that can establish a probably efficacious treatment is a demonstration of efficacy in a study meeting all the criteria for a well-established treatment except replication by an independent research team.

Treatments Identified as Well Established

Two treatments designed for children with conduct problem behaviors were found to have the strong empirical support required of treatments judged to be well established according to the Chambless criteria. These treatments each address the full constellation of behaviors that characterize conduct-disordered children and, collectively, provide new and current standards of care across the developmental spectrum of childhood. Each of these treatments has several supporting studies among which there are studies sufficient to support the well-established treatment criteria and no studies we found that provide disconfirming data. Studies of these treatments demonstrated superiority to psychological placebo or another treatment.

Parent Training Based on Living With Children

Parent-training programs based on Patterson and Gullion's (1968) manual *Living With Children* are based on operant principles of behavior change and designed to teach parents to monitor targeted deviant behaviors, monitor and reward incompatible behaviors, and ignore or punish deviant behaviors of their child. The treatment has been found superior to control groups in several controlled studies including Alexander and Parsons (1973); Bernal, Klinnert, and Schultz (1980); Firestone, Kelly, and Fike (1980); and Wiltz and Patterson (1974). Treatments using the lessons from *Living With Children* have generally been short-term behavioral parent-training programs and have been compared to standard treatments for children with conduct problems (e.g., psychodynamic therapy, client-centered therapy) in addition to no-treatment control groups. The study participants have included both boys and girls across a broad age range selected for treatment based on referral from parents and juvenile court as well as symptoms consistent with diagnoses of ODD and CD (e.g., noncompliance and aggression) as determined by rating scale data.

Because there have been many studies evaluating parent training based on *Living With Children* (Patterson & Gullion, 1968) and they have varied in their methodological rigor and support for the efficacy of this treatment, we considered all of the controlled outcome studies, as suggested by Chambless and Hollon

validated treatment on the preponderance of evidence regarding efficacy. We found that the more recent, better designed studies provided strong evidence for treatment efficacy, whereas the studies with insufficient data were older and less well designed. Overall, this treatment was judged to have a robust effect demonstrated in studies by different research teams and with children selected by different inclusion criteria.

Videotape Modeling Parent Training

Webster-Stratton's parent-training program includes a videotape series of parent-training lessons and is based on principles of parent training originally described by Hanf (1969). Videotape modeling parent training is intended to be administered to parents in groups with therapist-led group discussion of the videotape lessons. The treatment has been tested in several studies, including Spaccarelli, Cotler, and Penman (1992); Webster-Stratton (1984, 1990, 1994); and Webster-Stratton, Kolpacoff, and Hollinsworth (1988), in which it has been compared to wait-list control groups and to alternative parent-training formats. The studies have typically included both boys and girls in the 4- to 8-year-old age range who have been selected for treatment based on either parent referral for behavior problems or diagnostic criteria for ODD or CD.

Parents receiving videotape modeling parent training have rated their children as having fewer problems after treatment than control parents, and these parents have rated themselves as having better attitudes toward their child and greater self-confidence regarding their parenting role. Parents receiving the videotape treatment have also shown better parenting skills than control parents on observational measures in the home, and their children have shown greater reduction in observed deviant behavior.

Treatments Identified as Probably Efficacious

Ten treatments for children or adolescents with conduct problem behaviors were found to have the necessary empirical support required of treatments judged probably efficacious according to the Chambless criteria. These treatments and their supporting studies are listed in Table 2. Among the studies meeting the probably efficacious treatment criteria, there is strong representation of parent-child treatments based on Hanf's (1969) two-stage behavioral treatment model for preschool-age children (Eyberg, Boggs, & Algina, 1995; Hamilton & MacQuiddy, 1984; McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991; Peed, Roberts, & Forehand, 1977; Wells & Egan, 1988; Zangwill, 1983), as is Webster-Stratton's well-established treatment using videotape modeling. The delinquency prevention program (Tremblay, Pagani-Kurtz, Masse, Vitaro, & Phil, 1995; Vitaro & Tremblay, 1994) is also designed for preschool-age children.

Treatments for older children with conduct problem behaviors are represented in the probably efficacious treatments as well. Research teams led by Kazdin, studying problem solving skills training (Kazdin, Esveldt-Dawson, French, & Unis, 1987a, 1987b; Kazdin, Siegel, & Bass, 1992), and by Lochman, studying anger coping therapy (Lochman, Burch, Curry, & Lampron, 1984; Lochman, Lampron, Gemmer, & Harris, 1989), have each conducted rigorous evaluations of treatments for school-age children (see Table 2). Finally, four treatments for conduct-disordered adolescents have attained probably efficacious treatment status: anger control/stress inoculation (Feindler, Marriott, & Iwata, 1984; Schlichter & Horan, 1981), assertiveness training (Huey & Rank, 1984), multisystemic therapy (Borduin et al., 1995; Henggeler, Melton, & Smith, 1992; Henggeler et al., 1986), and rational-emotive therapy (Block, 1978).

Table 2. *The Probably Efficacious Treatments and the Studies Supporting Their Efficacy*

Treatment	Supporting Studies
Anger Control Training With Stress Inoculation Anger Coping Therapy	Feindler, Marriott, & Iwata (1984); Schlichter & Horan (1981) Lochman, Burch, Curry, & Lampron (1984); Lochman, Lampron, Gemmer, & Harris (1989)
Assertiveness Training Delinquency Prevention Program Multisystemic Therapy	Huey & Rank (1984) Tremblay, Pagani-Kurtz, Masse, Vitaro, & Phil (1995); Vitaro & Tremblay (1994) Borduin, Mann, Conc, Henggeler, Fucci, Blasko, & Williams (1995); Henggeler, Rodick, Borduin, Hanson, Watson, & Urey (1986); Henggeler, Melton, & Smith (1992)
Parent-Child Interaction Therapy	Eyberg, Boggs, & Algina (1995); McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk (1991); Zangwill (1983)
Parent Training Program Problem Solving Skills Training	Peed, Roberts, & Forehand (1977); Wells & Egan (1988) Kazdin, Esveldt-Dawson, French, & Unis (1987a); Kazdin, Esveldt-Dawson, French, & Unis (1987b); Kazdin, Siegel, & Bass (1992)
Rational-Emotive Therapy	Block (1978)
Time-Out Plus Signal Seat Treatment	Hamilton & MacQuiddy (1984)

Treatment Characteristics

While reviewing the 82 outcome studies, we collected data on several parameters of the treatments to characterize the treatment literature on children and adolescents with conduct-problem behavior. These treatment characteristics, shown in Table 3, included the intervention setting, treatment format, theoretical foundation of treatment, the participants in the child's treatment, and the qualifications of the therapist. The picture that emerges is consistent with Kazdin's (1997) observation that child therapy research is most often conducted in the schools, conducted in a group treatment format, and led by relatively inexperienced therapists-in-training.

Treatment studies conducted in schools typically obtain participants by screening the student population or by soliciting participants from among the student population rather than by clinic referral. One implication of the setting data is that the research findings for these treatments may not be representative or generalizable to the more severely conduct-disordered children and adolescents referred to treatment facilities. On the other hand, treatments conducted in the schools have many cost-effective features, which is highly rele-

vant for many families with a conduct-disordered child or adolescent. The data in Table 3 also show that the majority of treatments identified in this review involved the child directly, the child's mother, or both in the treatment. The theoretical foundation of the treatments for conduct-disordered children and adolescents is primarily cognitive-behavioral, perhaps because cognitive-behavioral treatments lend themselves to the kinds of precise description that are associated with research. Finally, we found that nearly one third of the therapists treating conduct-disordered children in outcome research have been graduate students in training, followed by licensed psychologists, who constitute over 20% of study therapists. Remaining therapists for these outcome studies included master's- and bachelor's-level therapists in professional practice as well as parent-graduates from parent training programs under study.

Future Directions

The summary of information gathered from psychosocial intervention outcome studies, and particularly from the identification of ESTs, has myriad research, clinical, and policy implications. Many of the implications for psychosocial treatment research have been discussed by Chambless and Hollon (in press). This special issue probes research challenges and future directions that emerge from the search and identification of treatments for children and adolescents. Based on our methodological review of the treatment research with conduct-disordered youngsters, we emphasize here the importance of participant characteristics to future research on efficacious treatments for these children.

We found not only a low rate of studies reporting basic participant characteristics but also that the reported characteristics of the children studied are, by and large, unrepresentative of the population of conduct-disordered children. Our data on sex distribution, for example, reveal a much larger proportion of boys than girls (5:1) in the treatment studies. In future treatment studies, routine inclusion of girls will be critical. It is probably true that prevalence rates of ODD are higher for boys during the preadolescent years (APA, 1994) and that boys are referred more frequently for conduct problems than girls (Schuhmann, Durning, Eyberg, & Boggs, 1996). Nevertheless, girls constitute a significant minority of mental health referrals for conduct problems. At present, there is almost no information on differences in girls' and boys' response to treatment and, as a result, almost no information to guide decisions about specific treatment matches for girls with conduct problems.

We found that fewer than half of the reviewed studies included data on the SES or racial/ethnic breakdown

Table 3. *Characteristics of the Child and Adolescent Interventions*

Characteristic	Percentage of Treatments With Characteristic
Intervention Setting	
Child/Adolescent's School	43.0
University Psychology Clinic	19.0
Child/Adolescent's Home	11.4
Hospital	7.6
Other	24.7
Intervention Format	
Group Treatment	51.9
Family Treatment (Includes Parent)	25.3
Individual Treatment (Child Only)	25.3
Other	35.8
Theoretical Orientation	
Cognitive Behavioral	78.5
Other	21.4
Intervention Participants	
Child/Adolescent	82.3
Mother	49.4
Father	38.0
Teachers	15.2
Siblings	8.9
Peers	7.6
Other	1.3
Therapists	
Graduate Student	31.6
Licensed Psychologist	22.8
Social Worker	16.7
Other	40.5

Note: Some of the percentages do not equal 100% because some treatments are classified into more than one category.

of the participants. Families from diverse racial/ethnic backgrounds constitute a growing proportion of mental health referrals, and matching children to treatments based on culture-specific variables may be important (see Sue, 1990). Certainly it is important to ensure that therapists conducting experimental interventions are aware and respectful of each child's sociocultural context (Kaslow et al., 1997). We must also actively seek diversity in study populations to examine the effects of ethnicity on treatment outcome.

We did find, however, that there are several interventions with good evidence for the improvement of diagnosed ODD and CD. Review of the 29 studies using well-established and probably efficacious treatments revealed that 28% of the studies included participants meeting the *DSM-III-R* (APA, 1987) or *DSM-IV* (APA, 1994) criteria for ODD or CD. Twenty-one percent of the studies reported that the participants were court-referred for treatment or had a history of serious criminal activity. Thus, 49% of the studies providing evidence for the efficacy of well-established and probably efficacious treatments included a clinical population with a high magnitude of behavior problems. In the remaining half of the studies, 17% of the participants were identified by extreme scores on behavior ratings, 17% included participants who were parent- or teacher-referred for treatment, 14% included children who displayed behaviors or symptoms consistent with a disruptive behavior disorder (e.g., aggression, non-compliance), and 3.4% (1 study) included participants who were socially rejected by peers. Although these latter methods of participant recruitment do not specifically meet *DSM* criteria for a disruptive behavior disorder, it is possible that some of these children had clinically significant problems that would have warranted an ODD or CD diagnosis. Among the treatment packages including participants who met *DSM* criteria for ODD or CD were parent-child interaction therapy (Eyberg et al., 1995), assertiveness training (Huey & Rank, 1984), problem-solving skills training (Kazdin et al., 1987a, 1987b; Kazdin et al., 1992), and a videotape modeling parent-training program (Webster-Stratton, 1994). The treatment packages that included children who were court-referred for treatment—a serious classification in its own right—were multisystemic therapy (Henggeler et al., 1992; Borduin et al., 1995), parent-training programs based on *Living With Children* (Patterson & Gullion, 1968), and anger control training with stress inoculation (Schlichter & Horan, 1981). We believe these studies provide good evidence for effective treatment of clinical populations with conduct disorders as they all reported a significant decrease in children's disruptive behavior. Whereas the remaining probably efficacious treatments reported efficacy for the treatment of nonclinical populations, their importance should not be discounted, as many behaviors displayed by children with subclinical levels of disruptive

behavior can be frustrating and annoying for parents, and successful treatment of these subclinical problems can relieve considerable parenting stress.

We believe that future studies should include children diagnosed with ODD and CD, as this will provide the consistent classification that is crucial for scientific rigor in treatment outcome research. We encourage treatment researchers to study clinic-referred children and adolescents and to allow and examine comorbidity in participants, to increase in every way possible the congruence between the treatments used in research and those used in clinical practice. It is only with congruence between treatment research and the real world of conduct-disordered children in treatment that research can inform practice as to the effectiveness of ESTs.

The "typical" conduct-disordered child in treatment studies is a 9-year-old Caucasian boy from a lower middle income background, whose mother may or may not be participating in his cognitive-behavioral treatment for conduct problems. In our review, we found little information from which to know whether this boy would do better, or worse, in his particular treatment if he were a girl or from a minority background, or if his family (or his therapist) belonged to a higher or lower socioeconomic group. We also do not know if the boy would do better or worse in this treatment if he were older or younger than he was. Of all the demographic variables, however, age is our best bet for the variable with greatest potential impact on treatment matching.

Two recent studies (Dishion & Patterson, 1992; Ruma, Burke, & Thompson, 1996) compared the effectiveness of behavioral parent training across many ages and suggested that this type of treatment is more effective in reducing behavior problems in younger than older children. Cognitive developmental theory, on the other hand, would predict that cognitive treatments for conduct problems would be more effective for older than for younger (preschool-age) children. As an index of a child's cognitive, social, or emotional level of development, age is a likely moderator of outcome for all treatments of conduct problem behavior (Eyberg, Schuhmann, & Rey, 1997) and should be incorporated routinely into future treatment study designs. Interactions of age with child sex and ethnic/racial background should also be examined whenever a treatment study has sufficient range and sample size.

In the design of future studies, the literature on treatments for conduct problems is ready to address many questions beyond, "Does this treatment work?" We must now address the question, "For whom does this treatment work?" There are other immediate questions: "Is this treatment cost-effective?" "When is this treatment not enough?" "How long does this treatment work?" "How can we prevent relapse?" We also need to ask, Is this treatment equivalent to, or better than, *Living With Children* or videotape modeling?"

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CONDUCT PROBLEM BEHAVIOR

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