

2009

CAMHD Biennial Report

*EFFECTIVE PSYCHOSOCIAL INTERVENTIONS FOR YOUTH
WITH BEHAVIORAL AND EMOTIONAL NEEDS*

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2009 BIENNIAL REPORT

EFFECTIVE PSYCHOSOCIAL INTERVENTIONS FOR YOUTH WITH BEHAVIORAL AND EMOTIONAL NEEDS

This report is an updated review summarizing selected areas of the scientific literature on interventions and services for youth with significant emotional or behavioral needs. The Child and Adolescent Mental Health Division (CAMHD) of the Hawaii Department of Health Task Force for Empirical Basis to Services issued the original review in August 2000, and its authors disseminated the findings nationally in the journal *Clinical Psychology: Science and Practice* in spring 2002. Updates have been published in 2002, 2004, and 2007.

The CAMHD Task Force for Empirical Basis to Services was established in 1999, and in August 2002, the Task Force became a standing committee: Evidence Based Services (EBS) Committee. This committee continues to incorporate into policy the various scientific findings related to child emotional and behavioral health.

Committee membership remains an open process, by which a member petitions in writing to join. Continual membership requires regular attendance (no more than two consecutive absences) and participation in various committee related activities or workgroups. Detailed coding of papers on psychosocial treatments is conducted independently by PracticeWise, LLC, which provides coding results to the committee for review purposes.

Committee members have included parents, providers, educators, university faculty, and health administrators, with backgrounds that include nursing, social work, psychology, psychiatry, and special education.

The overarching goals continue to be to broaden and update the summary of scientific information used to guide decisions about children's care. This report involves an extensive review of the major randomized, controlled research findings for psychosocial (non-medication) treatments for youth. Particular attention is paid to independent scientific demonstrations of promising outcomes, as well as descriptions of provider and youth characteristics, intervention setting, format, and duration, and size of the observed effects. A second section of this report focuses on the specific applicability of the evidence base to CAMHD registered youth, with an eye toward identifying practices most relevant for the provider workforce.

REVIEW METHODS

The methods for this report can be traced back to the multiple efforts conducted within the American Psychological Association (APA) in the mid 1990's. These include the collective reports of APA Task Force on Psychological Intervention Guidelines (1995), the APA Task Force on Promotion and Dissemination of Psychological Procedures (1995), and the APA Task Force on Empirically Supported Psychosocial Interventions for Children (1998).

Because the work of the EBS Committee involves the specific goal of improving practice on a large scale, it has long been the

consensus of the Committee that simply distributing lists of evidence-based interventions (e.g., as found in other reports or on the internet) is insufficient to ensure that quality interventions would ultimately be delivered to children locally. Because such factors as the appropriateness of particular interventions for various ethnic groups of various ages in various settings, the recentness of the literature, the magnitude of treatment effects, and the “trainability” of various programs are of high concern to providers and families, these concerns have remained a major focus of the Committee in its review.

In addition, the research literature reviewed in this report is primarily organized around particular problem behaviors, rather than strictly by psychiatric diagnosis. For example, many studies of depression used ratings of low mood rather than diagnosis as a means for including participants. Thus, although the findings in the “depression” section may be relevant to youth with diagnoses of Major Depressive Disorder, they are also relevant to youth with low mood levels. The problem areas for this review included: (1) anxiety and avoidance, (2) attention and hyperactivity, (3) autism spectrum, (4) depression and withdrawal, (5) disruptive behavior, (6) eating problems, (7) substance use, and (8) traumatic stress.

Services for the EBS Committee review were identified by the PracticeWise coding team through a combination of strategies, including: (a) computerized searches of electronic databases for relevant publications; (b) evaluation of studies reviewed by the APA Task Force on Empirically Supported Psychosocial Interventions for Children, the American Academy of Child and Adolescent Psychiatry

Practice Parameters, and other major published scientific literature reviews; (c) personal communication with national scholars in effectiveness research and (d) additional *ad hoc* nominations from EBS Committee members and members of the PracticeWise coding team. Four hundred and thirty-five (435) studies were read and coded in detail over a period of 5 years for this report. This is over a hundred new studies coded since the previous CAMHD Biennial Report.

LEVELS OF ANALYSIS: TREATMENTS AND TREATMENT FAMILIES

Interventions were not defined at the level of specific manuals. Rather, interventions sharing a majority of components with similar clinical strategies and theoretical underpinnings were considered to belong to a single “treatment family” for the purposes of evaluation. For example, rather than score each Cognitive Behavior Therapy protocol for anxiety on its own (there are more than a dozen such protocols), these protocols were considered together as a single group that could achieve a particular level of scientific support.

This decision to aggregate to a lower level of detail was designed to prevent challenges for users of the report that would result from finding a great many related interventions each with only limited support, and little means to select among those interventions for implementation, treatment planning, etc. For example, different interventions for depressive or avoidant behaviors that involved self-monitoring, identifying problem

thoughts, developing coping thoughts or problem-solving strategies, and accompanying behavioral exercises were collectively labeled “cognitive behavior therapy” (CBT) and evaluated as a single approach, called a “treatment family.” When differences were more substantial (e.g., one intervention outperformed another in a study), treatment families were considered distinct. When key differences were noted with respect to the inclusion of parents in the intervention, this often defined a new “treatment family” as well.

STRENGTH OF EVIDENCE: THE FIVE-LEVEL SYSTEM

In order to develop a sense of which treatments have the best scientific support, it is important to come up with a system of rules for “grading” the strength of evidence. Again, the starting point was the criteria developed by APA over 10 years ago. The APA’s Task Force on Promotion and Dissemination of Psychological Procedures (1995) defined two different levels at which an intervention may be deemed “efficacious” or having strong evidence for its effects (see the first two levels in Table 1). At the highest level, the APA stated that a “Well-Established” intervention refers to an intervention that has demonstrated its effects either (a) in a minimum of two good between group design experiments, where the intervention is superior to pill or psychological placebo or to another intervention, or (b) in a large series of controlled single-case experiments ($n \geq 9$) that have compared the intervention to another intervention. In either case, interventions must be conducted with a manual, and effects must have been

demonstrated by at least two different investigators. At the second level, the APA Task Force used the term “Probably Efficacious” to refer to an intervention that has been found to be either: (a) superior to a wait-list control group in two experiments, (b) equivalent to an already established intervention or superior to pill placebo, psychological placebo, or another intervention in a single experiment, or (c) superior to pill placebo, psychological placebo, or another intervention in a small series of single case design experiments ($n \geq 3$).

In the original EBS Committee reviews from 1999 to 2007, it was not always possible to identify interventions in all problem areas corresponding to “Well-Established” (Level 1) or “Probably Efficacious” (Level 2) status. This led to the decision of the committee to expand and ultimately redefine the criteria for strength of evidence to include a wider range of interventions for consideration. The resulting expanded criteria were adapted from the definitions of the APA Task Force, and consisted of 5 levels, with a third level corresponding to treatments without manuals, a fourth level for treatments with minimal or no evidence, and a fifth level added corresponding to treatments with known risks. This set of definitions was used by CAMHD from 2000 to 2006.

This set of definitions was revised again in 2007 such that the five-level system now simply refers to the strength of *supportive* evidence for a treatment family.

Level 1 (**Best Support**) continues to correspond to the APA definition of “Well-Established” described above. Likewise Level 2 (**Good Support**) corresponds to the APA definition of “Probably Efficacious” described above. Definitions for both levels 1 and 2,

however, no longer take into consideration studies involving single case experimental designs, given the increasing depth of the literature involving randomized clinical trials.

Level 3 (**Moderate Support**) continues to refer to treatment families that would otherwise meet criteria for Level 2 but do not involve the use of treatment manuals.

TABLE 1. DEFINITION OF STRENGTH OF EVIDENCE LEVELS

Level 1: Best Support

- I. At least two randomized trials demonstrating efficacy in one or more of the following ways:
 - a. Superior to pill placebo, psychological placebo, or another treatment.
 - b. Equivalent to all other groups representing at least one Level 1 or Level 2 treatment in a study with adequate statistical power (30 participants per group on average; cf. Kazdin & Bass, 1989) and that showed significant pre-post change in the index group as well as the group(s) being tied. Ties of treatments that have previously qualified only through ties are ineligible.
- II. Experiments must be conducted with treatment manuals.
- III. Effects must have been demonstrated by at least two different investigator teams.

Level 2: Good Support

- I. Two experiments showing the treatment is (statistically significantly) superior to a waiting-list or no-treatment control group. *Manuals, specification of sample, and independent investigators are not required.*
- OR
- II. One between group design experiment with clear specification of group, use of manuals, and demonstrating efficacy by either:
 - a. Superior to pill placebo, psychological placebo, or another treatment.
 - b. Equivalent to an established treatment (see qualifying tie definition above).

Level 3: Moderate Support

One between group design experiment with clear specification of group and treatment approach and demonstrating efficacy by either:

- a. Superior to pill placebo, psychological placebo, or another treatment.
- b. Equivalent to an already established treatment in experiments with adequate statistical power (30 participants per group on average).

Level 4: Minimal Support

One experiment showing the treatment is (statistically significantly) superior to a waiting-list or no-treatment control group. *Manuals, specification of sample, and independent investigators are not required.*

Level 5: No Support

The treatment has been tested in at least one study, but has failed to meet criteria for levels 1 through 4.

New strength of evidence definitions are being employed for levels 4 and 5, now called **Minimal Support** and **No Support** respectively. A classification of **Minimal Support** (Level 4) denotes that a protocol in that treatment family may have beaten a no-treatment or waitlist control group in a single study, with or without the use of a treatment manual. Given that achieving this level of support is relatively easy, treatment families with **Minimal Support** are considered preliminary, and are identified simply for the purposes of differentiating them from interventions with no scientific support whatsoever. Treatments families with **Minimal Support** should rarely if ever be the first line choice of treatment, unless no better options exist for that particular youth problem.

A classification of **No Support** indicates that a treatment family was tested and did not once outperform any control condition (active treatment, waitlist, no treatment, placebo, etc.). In other words, treatments labeled with **No Support** are those that were tested and failed.

Treatment approaches not listed in the analyses or mentioned in this report may also literally have “no support,” but will not show up in the results. These approaches include the hundreds of named psychotherapies that have never been tested in a randomized clinical trial. One can assume that if the treatment is not listed at one of the 5 levels of evidence in this report, that the EBS Committee through its procedures has not identified any studies—successful or otherwise—that have tested that treatment. For example, the absence of any discussion of Health Realization as a treatment for youth with anxiety problems would simply mean that we were unable to identify any qualified

research on that treatment approach for that problem type.

QUALITY AND RELEVANCE

As originally recommended by the APA in the early 1990’s, the Committee also examined aspects of interventions that spoke to their feasibility, relevance, and expected benefits. These variables were defined by the Committee in a manner consistent with that of the original APA Psychological Intervention Guidelines Task Force, with several key additions. The information coded for each study and the corresponding definitions appear in Table 2.

Several of these variables warrant specific mention here. The first two columns in Tables 1.3 through 1.10 speak to the quality of the research by showing (1) the overall volume of supporting research (“wins/ties:” the number of studies in which a treatment group beat another group or had a qualifying tie with an established treatment) and (2) the recentness of the research (the publication year of the most recent study). Generally speaking, treatment families may be viewed more positively when the research is both plentiful and current. This suggests that treatments of this nature are perhaps better understood and are continuing to be refined and studied, either in new contexts or under varying conditions.

Another very important variable in Tables 1.3 through 1.10 appears in the rightmost column and refers to the size of the effect observed on average across all positive studies of treatments in that treatment family. Larger numbers are better, and numbers higher than 1.0 generally mean that a youth on average will improve to a degree

TABLE 2. CODES FOR QUALITY AND RELEVANCE

Trials	This is the number of studies that contributed to a particular treatment family achieving an evidence-based status (at a level of 1 through 4).
Year	The year of the most recent successful study of an intervention in a particular treatment family. This speaks to how current the supportive literature is on the intervention type.
Trainability	An estimate of the degree to which an intervention can be trained easily to others. "High" = manual available AND treatment was successfully used by non-doctoral level practitioners; "Moderate" = manual available OR treatment was successfully used by non-doctoral level practitioners; "Low" = no manual available AND treatment was successfully used by doctoral level practitioners only.
Compliance	An estimate of how acceptable the treatment approach is, by looking at how many children dropped out of the treatment group or study. Equal to the average percentage of children who did not drop out (post treatment n)/(pre treatment n) within that treatment condition. For example, if 6 of 30 children drop out during treatment, compliance = 80%.
Gender	Whether boys or girls (or both) were in the treatment group; if information was not reported for a specific treatment condition, the percentage was estimated using information for the entire study; when the lower percentage was greater than 30%, the term "both" was used. When the lower percentage was below 30%, the treatment was listed as representing the majority gender only (e.g., studies that had 75% boys would be displayed as "boys").
Age	Years or months since birth; when range was not reported, it was estimated by using the mean age plus or minus 1.5 SD (approximately 87% of a normal distribution) or the mean alone when no SD was given; thus, for a mean age 9.0 and $SD = 1.6$, the estimated range would be 6 to 11; if information was not reported for a specific treatment condition, this number was estimated using information for the entire study.
Ethnicity	Presence of each ethnic group within condition; if information was not reported for a specific treatment condition, this presence was estimated using information for the entire study under the assumption of the independence of ethnicity and treatment condition.
Therapist	The training, if reported, for the main provider(s) involved within each treatment condition.
Frequency	The highest and lowest observed frequency of contact with child/family, reported in sessions per unit time (e.g., "weekly").
Duration	The minimum and maximum length of time from pre treatment to post treatment.
Format	Whether the treatment was group, individual, or some other format of therapy, including whether it included parents or family, etc.
Setting	The primary location types in which treatment was delivered; when setting was not reported, it was sometimes inferred based on aspects of the treatment (e.g., teacher as therapist implied a school setting).
Effect size	The size of the effect of the treatment, calculated as the number of (pretreatment) standard deviations that each group improved on average (mean) from pre treatment to post treatment on the primary outcome measure.

equivalent to just above a clinical threshold to average for a non-treated population. In other words, an effect size of 1.0 is quite large, and

on a more conventional metric, is equivalent to a change from 85 (low normal) to 100 (normal) in IQ points. These effect sizes are

calculated on a single measure of the treatment target for each study, and therefore are subject to especially large errors in estimation when the numbers of studies are small. Therefore, it is recommended that effect size estimates of treatment families with 3 or fewer trials be interpreted with great caution. One should not consider a treatment with one study showing an effect size of 2.0 as definitely “more effective” than a treatment with five studies showing an average effect size of 1.0. Finally, effect size estimates do not take into consideration changes on any variables such as function, education, etc. (see below for definitions of outcomes). Entries in the summary tables are sorted in descending order within level by number of successful studies, and within number of studies by alphabetical order of treatment names.

DEFINITIONS OF OUTCOMES

The coding of all studies involved the examination of variables across 6 different domains: **target symptoms** (those related to the youths’ “main problem,” e.g., depression in a study of depression), **other symptoms** (other symptoms that were not the direct target of the interventions, e.g., anxiety in a study of depression), **education** (e.g., attendance, academic performance), **functioning** (e.g., ability to meet role expectations), **satisfaction**, and **ecology**. However, all findings throughout this report are based on findings for the first domain only. Treatment level assignments might be entirely different for the **functioning** domain, for instance. Two major reasons for not including these other domains in this report are (1) to reduce the overall complexity of the

findings and (2) to address the fact that most studies report no data in the five domains other than **target symptoms**. Nevertheless, future reports may take a closer look at the findings in these other areas.

PRACTICE ELEMENTS

Keeping with the initiative to develop strategies for measuring and defining clinical practice, the Committee sought to identify their specific “clinical ingredients” of all available evidence-based protocols identified in Section I of this report. These strategies were identified using the PracticeWise clinical coding system, which details over 55 different clinical techniques or procedures, known as “practice elements.” Each protocol was coded for its specific content by two judges regarding the presence or absence of each of these 55 practice elements, and a third judge performed a final validation review. Example practice elements are strategies such as “relaxation,” or “assertiveness training.” Coding was performed on the best available description of the treatment procedures, which in the majority of cases was the description provided in the text of a research study. When the actual manuals were available, these were the first choice for coding.

Graphs or “profiles” were developed to represent the relative frequency with which each element was included in a successful treatment for a particular problem. For example, a value of 80% for “relaxation” on a depression figure indicates that 80% of the coded successful protocols targeting depression included relaxation in their approach. A successful treatment was defined as an active, non-pharmacological treatment

that beat another study group (a treatment group, placebo, waitlist, no-treatment, or other control group) or had a qualifying tie with an established treatment in one or more randomized trials on the main outcome measure in the target symptom domain. Protocols are then organized according to the eight main problem areas represented in this report.

RELIABILITY

Procedures for coding required all papers and protocols to be coded by two independent raters, using a detailed coding manual. The resulting codes were then inspected both by an automated review of rater disagreements and by manual inspection. Coding disagreements generated by the first two raters, as well as any manually identified coding errors were corrected by a third rater in the final record for each protocol and paper.

These coding procedures are similar to those used in previous versions of the CAMHD Biennial Report, which demonstrated adequate reliability for the article and protocol codes. Recent published research on several of these codes also demonstrated acceptable reliability. Reliability is therefore expected to be similar to the previous report, based on the highly structured coding procedures.

CAUTIONARY STATEMENT

As mentioned in prior reports, it is important to keep in mind a number of factors when considering the results of these reviews. First, any summary of scientific

support for interventions is a work in progress, in that findings are continually accumulating as new interventions are developed and tested. Thus, the reviews are meant to represent the state-of-the-art at the time that the committee met and cannot address quality of interventions that may still be on the horizon or even appearing in journals this year. Second, the Committee at no point entertained the idea that the results would provide a panacea or produce lists of perfect interventions. Rather, the goals of the group were (a) to organize interventions in order of their relative likelihood to be relevant and helpful (b) to provide detailed information about the studies and populations in which these interventions have been found to work, and (c) to provide summary descriptions of the frequency of the use of particular practice elements for different problem areas. These materials are meant to be a guide in treatment planning and review and to support and inform decision-making that involves multiple team members, inclusive of youth and their families.

Third, it is worth repeating that the practice element profiles for interventions are merely frequency counts of the presence or absence of particular practice elements in “winning” study groups and therefore cannot speak to their necessity, sufficiency, or causality in producing a positive treatment outcome. In other words, the presence of any one technique in a profile—even when very frequent—does not constitute absolute proof of its effectiveness in isolation or in different combinations. Rather, it summarizes the frequency with which researchers who designed successful treatments included those practice elements along with others in their treatment protocols. These practice

elements results are thus intended to be used as a descriptive guidepost for service plan review or development, but are not intended to be so strongly prescriptive that a youth's plan must include or exclude an element based on its presence or absence in the profile.

Finally, although there is a proliferation of other reviews recommending best practices in the literature and on the internet, many such reviews are consensus-based, meaning that interventions are selected by a panel of experts. This approach differs in that it measures each intervention against pre-defined scientific criteria. Our criterion-based approach is thus designed to yield a much more conservative and reliable determination of best practices, and consequently may be inconsistent with consensus-based recommendations found elsewhere. Other reviews available may also yield different results due to the application of different definitions of evidence or other differences in review procedures.

RESULTS OF THE REVIEW

ANXIOUS OR AVOIDANT BEHAVIOR PROBLEMS

INTERVENTIONS IDENTIFIED

The interventions reviewed for anxious or avoidant behavior problems included all those with controlled outcome research as identified through the search procedures outlined above. Descriptions of 171 interventions in this area were organized into the following 23 treatment families:

Assertiveness Training, Attachment Therapy, Biofeedback, Client Centered

Therapy, Cognitive Behavior Therapy (CBT), Cognitive Behavior Therapy and Medication, Cognitive Behavior Therapy for Child and Parent, Cognitive Behavior Therapy with Parents Included, Cognitive Behavior Therapy with Parents Only, Contingency Management, Education, EMDR, Exposure, Family Psychoeducation, Group Therapy, Hypnosis, Modeling, Play Therapy, Psychodynamic, Rational Emotive Therapy, Relationship Counseling, Relaxation, and Teacher Psychoeducation.

STRENGTH OF EVIDENCE

Best Support

Of the 23 treatment families identified, five(5) demonstrated **Best Support**. These were **CBT, Exposure, Modeling, Education,** and **CBT plus Medication**. **CBT** was successful in 42 studies, **Exposure** was successful in 32 studies, **Modeling** was successful in nine (9) studies, **Education** was successful in three (3) studies, and **CBT plus Medication** was successful in two (2) studies. The vast majority of the evidence was in support of exposure and CBT for anxiety.

Good Support

Six of the 23 treatment families were found to have **Good Support**, two of which were variations of CBT. **CBT with Parents Included** was successful in three (3) studies, **Relaxation** was successful in two (2) studies, **Assertiveness Training** was successful in one (1) study, **CBT for Child and Parent** (each treated separately) was successful in one (1) study, **Family Psychoeducation** was successful in a single (1) study, and **Hypnosis** was also successful in one (1) study

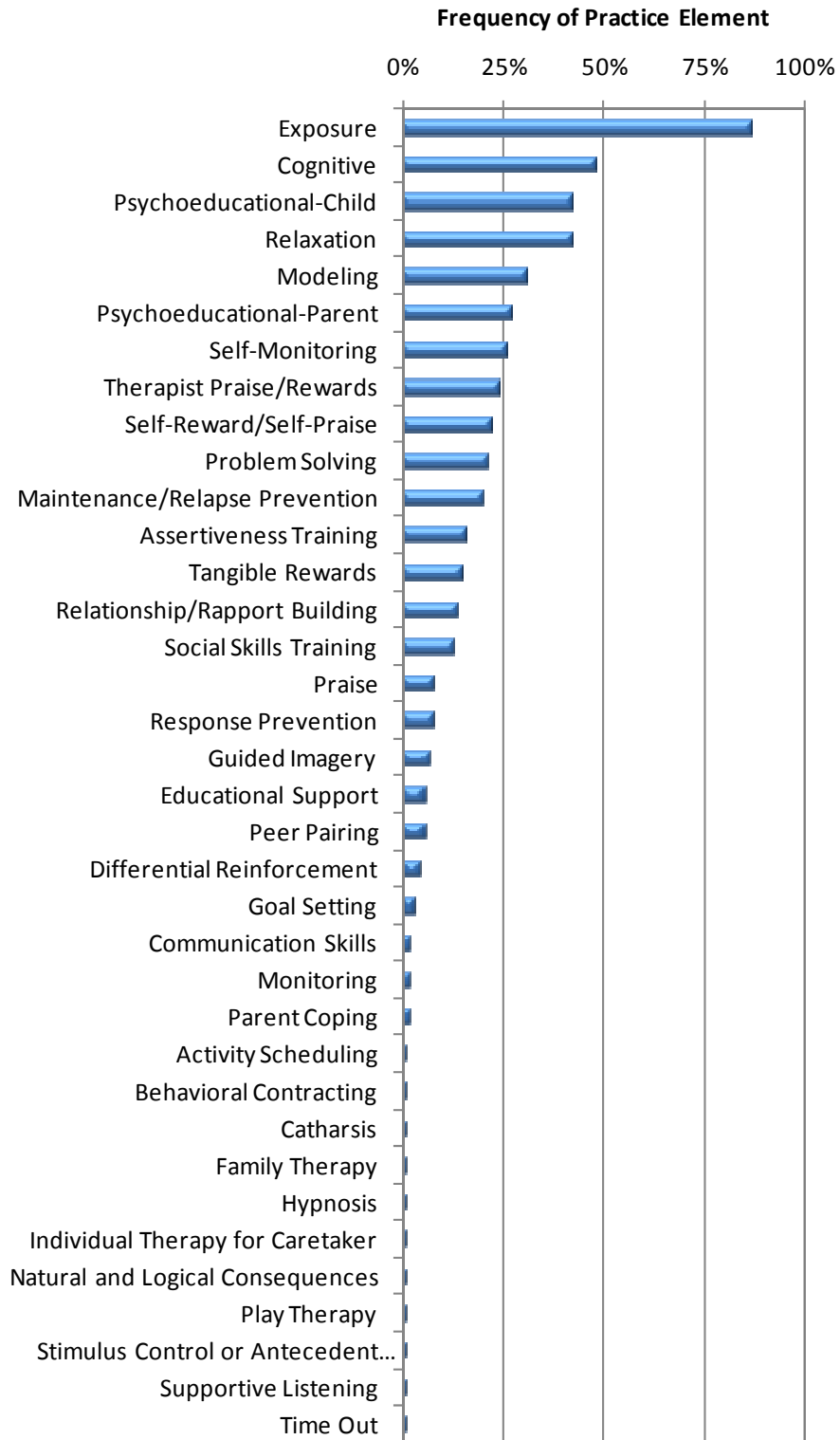
TABLE 1.3 EFFECTIVE INTERVENTIONS FOR ANXIETY AND AVOIDANCE

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 1: Best Support													
Cognitive Behavior Therapy (CBT)	42	2008	High	94%	Both	4 to 18	Aboriginal (Australia), American Indian or Alaska Native, Asian, African-American, Caucasian, Dutch, Hindu, Hispanic or Latino/a, Indonesian, Multiethnic, Other	Pre-BA, MA, MD, PhD, Parent, Other	Daily to Monthly	1 day to 24 weeks	Bibliotherapy, Email, Family, Group Client, Individual Client, Multi-Family, Parent and Child, Parent Group, Parent Administered, Teacher Group, Telephone Call	Clinic, Community Field, Day Care, Home, School	0.85
Exposure	32	2008	High	97%	Both	3 to 19	Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Other	Pre-BA, BA, MA, PhD, Other	Daily to Weekly	1 day to 14 weeks	Group Client, Individual Client, Parent and Child, Parent Group, Parent Individual	Clinic, Community Field, Day Care, Hospital, School	0.70
Modeling	9	1984	Moderate	100%	Both	3 to 16	African-American, Caucasian	PhD, Teacher, Other	Daily to Semiweekly	1 day to 6 months	Group Client, Individual Client	Dental Clinic, School	0.45
Education	3	1986	Moderate	100%	Both	9 to 13	African-American, Caucasian	*	Daily to Semiweekly	1 day to 3 weeks	Group Client	School	0.54
CBT plus Medication	2	2008	Moderate	94%	Both	6 to 15	American Indian or Alaska Native, Asian, African-American, Caucasian, Hispanic or Latino/a, Other	MA, MD, Other	Semiweekly to Weekly	12 weeks	Individual Client, Parent and Child, Parent Individual	*	1.06
Level 2: Good Support													
CBT with Parents Included	3	2008	Moderate	85%	Both	4 to 14	American Indian or Alaska Native, Asian, Caucasian, Hispanic or Latino/a, Multiethnic	MA, PhD	Weekly to Biweekly	12 to 14 weeks	Group Client, Multi-Family, Parent Group	Clinic	1.24
Relaxation	2	1970	Moderate	89%	*	14 to 18	*	BA, Other	Daily to Semiweekly	1 month to 8 weeks	Group Client	School	*
Assertiveness Training	1	1987	Moderate	79%	Both	14 to 15	*	*	Semiweekly	2 weeks	Group Client	School	*
CBT for Child and Parent	1	2003	Moderate	100%	*	7 to 18	Caucasian	MA, PhD	Weekly	12 weeks	Individual Client, Parent Individual	Clinic	0.81
Family Psycho-education	1	2008	Moderate	78%	Both	7 to 12	Caucasian, Other	MA, PhD	*	16 weeks	Individual Client, Parent and Child, Parent Individual	Clinic	0.27
Hypnosis	1	1994	Moderate	100%	Both	12 to 15	*	*	Weekly	2 weeks	Group Client	School	1.23

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 3: Moderate Support													
Contingency Management	1	1970	*	100%	Male	7 to 9	Caucasian	MA, MD	Weekly	20 weeks	Group Client	Clinic	*
Group Therapy	1	1970	*	100%	Male	7 to 9	Caucasian	Other	Weekly	20 weeks	Group Client	Clinic	*
Level 4: Minimal Support													
Biofeedback	1	1996	*	96%	*	12 to 14	*	Other	Semiweekly	12 weeks	*	School	*
Play Therapy	1	1970	Moderate	100%	Both	6 to 11	*	Teacher	Weekly	17 weeks	Individual Client	School	*
Psycho-dynamic	1	1972	Low	100%	Both	6 to 15	African-American, Caucasian	PhD	Semiweekly	8 weeks	Individual Client	Clinic	0.55
Rational Emotive Therapy	1	1976	High	100%	Both	10 to 12	Caucasian	BA	Weekly	5 weeks	Group Client	School	0.77

Note. "Train" = Trainability; * - information could not be determined from the published reports.

FIGURE 1.1. PRACTICE ELEMENTS FOR ANXIETY AND AVOIDANCE (97 STUDY GROUPS)



Moderate Support

Two (2) treatment families demonstrated **Moderate Support**. These were **Contingency Management** and **Group Therapy**, each successful in a single study. Neither treatment used a manual.

Minimal Support

Four (4) treatments for anxiety were found to have **Minimal Support**. **Psychodynamic Therapy, Play Therapy, Biofeedback, and Rational Emotive Therapy**. Each beat a waitlist or no-treatment control, each in a single study.

No Support

Several other treatments were tested in randomized trials and belonged to treatment families that were found to have **No Support** in those studies. These included: **Attention, CBT with Parents Only** (i.e., no treatment for the child), **Client Centered Therapy, Eye Movement Desensitization and Reprocessing (EMDR), Relationship Counseling, and Teacher Psychoeducation**.

QUALITY AND RELEVANCE

Information related to the quality and relevance of the research for anxious or avoidant behavior problems is summarized in Table 1.3. All of the supported treatment families have been used successfully with boys and girls, are relatively short term, were delivered by therapists ranging from pre-bachelor level to doctoral level, and showed rather large effects. Of the Level 1 interventions, **CBT** showed the largest effects on average. Effect size estimates for **CBT** suggested that the average child score at posttest was better than 80% of the pretreatment scores.

Studies that specified ethnicity covered a wide variety of groups, and effective treatments were available for children from ages 3 to 19. According to the literature, **CBT** and its variants appeared to be more appropriate than other treatments for the more complex anxious or avoidant behavioral problems (e.g., social phobia, separation anxiety disorder, generalized anxiety disorder, post-traumatic stress disorder, etc.). A single study showed that **CBT** for obsessive compulsive disorder was better than medication alone. With respect to how recent and potentially applicable the research is, only **Exposure, CBT** (and its variants), and **Family Psychoeducation** had successful studies within the last 15 years.

PRACTICE ELEMENTS

The practice element profiles of all successful treatments (97 altogether) are summarized in Figure 1.1. The results show that exposure (87%) was the most common practice element across study groups. The next five most common practice elements were: cognitive (47%), relaxation (42%), psychoeducation-child (42%), modeling (31%), and psychoeducation-parent (27%).

The shape of the profile highlights the presence of exposure as a therapeutic strategy common to successful treatment demonstrations. Generally, most treatments appeared to be organized around using the other elements to support the successful use of exposure.

ATTENTION AND HYPERACTIVITY

INTERVENTIONS IDENTIFIED

The interventions reviewed for attention and hyperactivity behaviors included all those with controlled outcome research as

identified through the search procedures outlined above. Descriptions of 79 interventions in this area were organized into the following 25 treatment families:

Attention, Behavior Therapy and Medication, Biofeedback, Client Centered Therapy, CBT, CBT and Anger Control, Contingency Management, Education, Parent Coping and Stress Management, Parent Management Training (PMT), PMT and Problem Solving, PMT and Self-Verbalization, PMT and Social Skills, PMT and Teacher Psychoeducation, Physical Exercise, Relaxation, Relaxation and Physical Exercise, Self-Control Training, Self Verbalization, Self Verbalization and Contingency Management, Self Verbalization and Medication, Skill Development, Social Skills, Social Skills and Medication, and Working Memory Training.

STRENGTH OF EVIDENCE

Best Support

Results for attention and hyperactivity problems appear in Table 1.4. Of the 25 treatment families identified, two (2) demonstrated **Best Support** for attention and hyperactivity problems. These were **Self-Verbalization** and **Behavior Therapy plus Medication**. **Self-Verbalization** was successful in four (4) studies, and **Behavior Therapy plus Medication** was successful in three (3) studies.

Good Support

Ten (10) different treatment approaches demonstrated **Good Support** for attention and hyperactivity problems. These were **Parent Management Training (PMT), Physical Exercise, Biofeedback, Contingency Management, PMT and**

Teacher Psycho-education, Social Skills plus Medication, Education, PMT and Problem Solving, Relaxation and Physical Exercise, and Working Memory Training, **PMT** was successful in five (5) studies, beating an alternative treatment in one (1) comparison and beating a no-treatment condition in five (5) comparisons.

Contingency Management was successful in three (3) studies, beating alternative treatments four (4) times, and beating a no-treatment control once. **Physical Exercise** was successful in three (3) studies, beating alternative treatments one (1) time, and beating a no-treatment control two (2) times. **Biofeedback** was successful in two (2) studies, beating alternative treatments both times. The combination of **Social Skills and Medication** was successful in two (2) studies. The combination of **Relaxation and Physical Exercise** also beat an alternative treatment in one (1) study. The combination of **Parent Management Training and Problem Solving** was successful in one (1) study, beating an alternative treatment. The combination of **Relaxation and Problem Solving** beat an alternative treatment in one (1) study, and **Working Memory Training** beat an alternative treatment in one (1) study as well. Finally, **Education** was successful in one study, also beating an alternative treatment once.

Minimal Support

Four (4) approaches demonstrated **Minimal Support** for attention and hyperactivity problems. These were **Parent Management Training and Social Skills, Social Skills** alone, **Relaxation**, and the combination of **Self-Verbalization and Contingency Management**. Each beat a waitlist or no-treatment control in a single study. The

evidence for these four treatment families (including particular combinations of treatments involving otherwise successful approaches, see below) remains preliminary.

No Support

Four other treatment approaches were tested and were found to have **No Support** in those studies. These included: **Attention, Client Centered Therapy, CBT, CBT and Anger Control, Parent Coping/Stress Management, PMT and Self-Verbalization, Self-Control Training, Self Verbalization and Medication, and Skill Development.**

The findings regarding **Self-Verbalization** combined with other effective interventions may seem counterintuitive, in that it is a combination of two existing evidence-based approaches and yet failed to achieve “evidence based” status. These treatment families often failed to level on their own however, because they were tested in comparison to other strong treatment groups: for example, a **Parent Management Training** group and a **Self-Verbalization** group. Because the sample sizes per groups were quite small, these ties did not qualify to allow the combination treatments to achieve better strength of evidence ratings. Thus, it may be misleading or at the very least premature to characterize the combinations with **Self-Verbalization** as ineffective—more research is needed here.

QUALITY AND RELEVANCE

Information related to the quality and relevance of the research for inattention or hyperactivity problems is summarized in Table 4. The majority of the supported interventions were tested on participants who were mostly male, and notably, no interventions were supported for youth older

than age 13. Most were relatively short term, were delivered by therapists ranging from pre-bachelor level to medical doctor level, and almost all showed rather large effects. **Contingency Management** showed a very large effect size, although this was based on only two studies (one of the 3 relevant studies did not report effect size), and one of those estimates was an extreme outlier (a highly unusual estimate).

Information on ethnicity was unavailable for most studies, and in those studies that reported it, participants were mostly Caucasian. Some studies reported including African American youth, and only one study reported including Latino/a youth. As a whole, then, the treatment literature on inattention and hyperactivity is largely characterized by Caucasian boys under the age of 13.

Another issue worth noting is that different studies tended to target different types of outcomes. For example, programs such as **Self-Verbalization** typically targeted improvements on test-taking ability or attention capacity; whereas other interventions targeted parent-reported youth hyperactivity. Thus, comparison of effect sizes across treatment families needs to be performed with caution, as some protocols sought to modify more challenging behaviors than did others.

PRACTICE ELEMENTS

The practice element profiles of all “winning” treatments (27 altogether) are summarized in Figure 1.2. The results show that problem solving and praise (41%) were the most common practice elements across study groups. The next four most common practice elements were: psychoeducation-parent (37%), tangible rewards (37%),

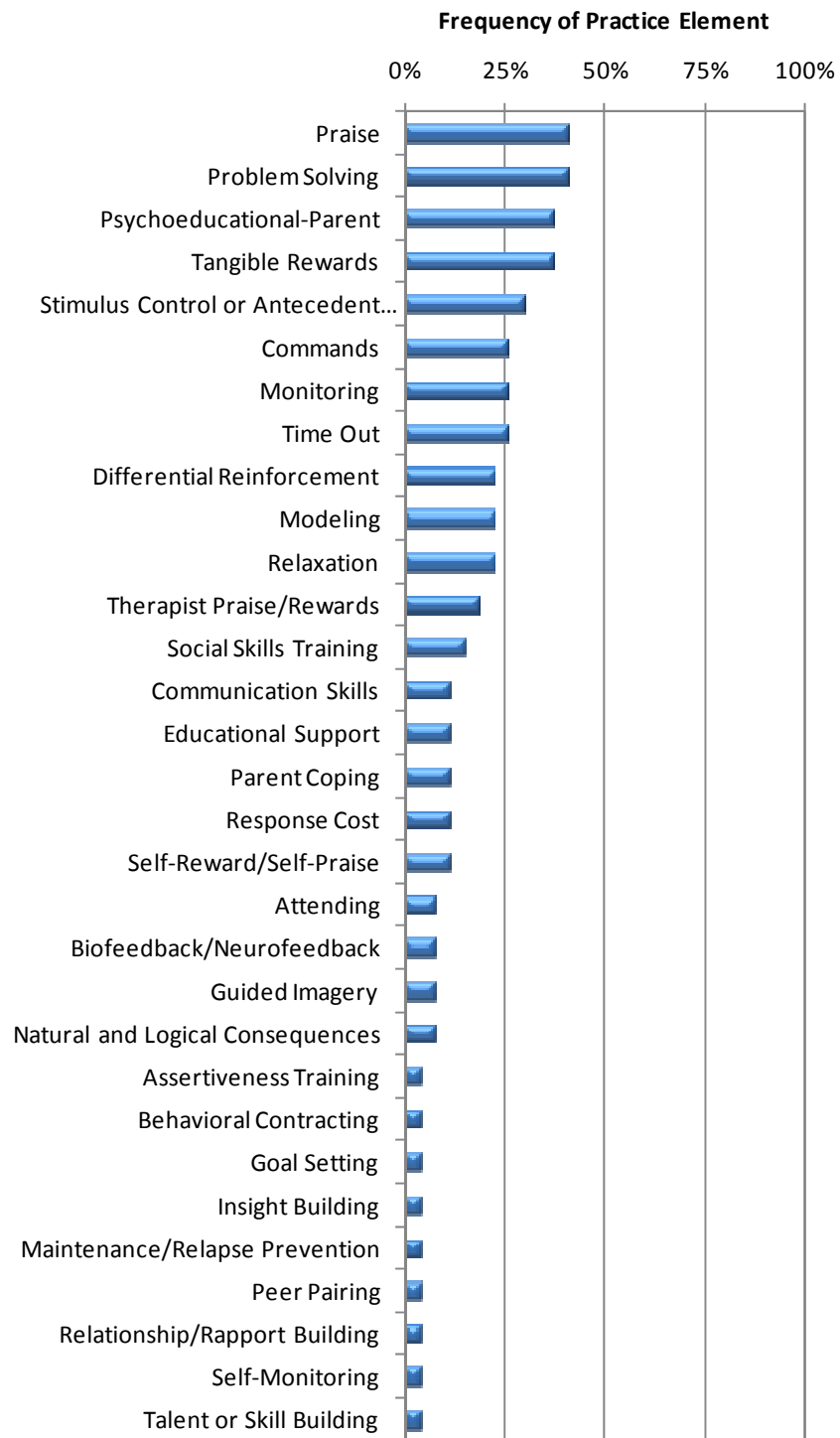
TABLE 1.4 EFFECTIVE INTERVENTIONS FOR ATTENTION AND HYPERACTIVITY

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 1: Best Support													
Self Verbalization	4	1982	Moderate	100%	Both	7 to 13	Caucasian	Other	Daily to Semiweekly	2 days to 2 weeks	Individual Client	Clinic, School	0.31
Behavior Therapy plus Medication	3	1999	Moderate	86%	Male	7 to 11	African-American, Caucasian, Hispanic or Latino/a	MA, MD, Teacher	Daily to Biweekly	12 weeks to 426 days	Group Client, Individual Client, Multi-Family, Parent and Child, Parent Group	Clinic, Community Field	0.09
Level 2: Good Support													
Parent Management Training (PMT)	5	2001	High	100%	Male	2 to 12	*	BA, Other	Weekly	6 to 12 week	Parent and Child, Parent Group	Clinic, Home	0.92
Physical Exercise	3	1995	High	97%	Male	6 to 13	*	MA	Semiweekly to Weekly	3 to 4 weeks	Group Client, Individual Client, Parent Individual	Partial Hospital, School	0.83
Biofeedback	2	1982	Moderate	100%	Male	7 to 12	*	PhD	*	12 weeks	Individual Client	School	0.67
Contingency Management	2	1991	High	100%	Both	6 to 10	Caucasian	Pre-BA, Teacher	Semiweekly	10 weeks	Group Client	School	2.00
PMT and Teacher Psycho-education	2	2007	Moderate	100%	Both	5 to 12	Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic	MA, PhD	Weekly	10 to 12 weeks	Fax To Teacher, Group Client, Multi-Family, Parent Group	Clinic	0.80
Social Skills plus Medication	2	1984	High	100%	Male	8 to 13	*	Pre-BA, MA	Daily	2 weeks	Group Client	School	*
Education	1	2001	Moderate	100%	Male	6 to 12	Caucasian	*	Daily	3 to 5 weeks	Computer Administered	*	*
PMT and Problem Solving	1	1991	Moderate	100%	Male	7 to 13	*	*	Semiweekly	*	Family, Individual Client	Clinic, Home	0.68
Relaxation and Physical Exercise	1	1984	High	100%	Male	6 to 8	*	MA	Weekly	3 weeks	Group Client	*	2.21
Working Memory Training	1	2005	High	85%	Male	7 to 11	*	*	Semiweekly	5 to 6 weeks	Self Administered	Home, School	0.26

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 4: Minimal Support													
PMT and Social Skills	1	1997	Moderate	100%	Both	8 to 10	African-American, Caucasian	BA, PhD	Biweekly	8 weeks	Group Client, Parent Group	Clinic	0.78
Relaxation	1	1977	Moderate	100%	Male	8 to 9	*	*	*	3 weeks	Individual Client	School	*
Self Verbalization and Contingency Management	1	2002	High	100%	Male	8 to 9	Caucasian	Teacher	*	*	Group Client	School	0.87
Social Skills	1	1997	Moderate	100%	Both	8 to 10	African-American, Caucasian	BA, PhD	Weekly	8 weeks	*	Clinic	0.51

Note. “Train” = Trainability; * - information could not be determined from the published reports.

FIGURE 1.2. PRACTICE ELEMENTS FOR ATTENTION AND HYPERACTIVITY (27 STUDY GROUPS)



stimulus control/antecedent management (30%), and commands (26%).

The flat shape of the profile suggests that the successful treatments for this area are somewhat diverse. That is, some contain a handful of the noted strategies, and others contain a different set. No strategy showed up in the majority of approaches.

Generally, most treatments appeared to be organized into one of two types—one that involved the pairing of problem solving, modeling, and self-verbalization, in which therapists modeled how to “think aloud” to approach a problem, and one that was based on behavior management strategies of praise, rewards, time out, and parent psychoeducation.

AUTISM SPECTRUM DISORDERS

INTERVENTIONS IDENTIFIED

The interventions reviewed for autism spectrum disorders included all those with controlled outcome research as identified through the search procedures outlined above. Descriptions of 22 interventions in this area were organized into the following seven (7) treatment families: **Auditory Integration Training, CBT, Hyperbaric Treatment, Intensive Behavioral Treatment, Intensive Communication Training, PMT, and Peer Pairing**. One additional study (Bristol et al., 1993) tested a **Parent Psychoeducation** program targeting maternal depression, but did not report outcomes for any of the primary symptom clusters for autism, and hence was not subject to a strength of evidence analysis.

STRENGTH OF EVIDENCE

Best Support

Results for autism spectrum disorders appear in Table 1.5. Two treatment families demonstrated **Best Support**. **Intensive Behavioral Treatment** was successful in four (4) studies, and **Intensive Communication Training** was successful in three (3) studies, beating alternative treatments in two (2) of those, and beating a no-treatment control in one (1) study.

Minimal Support

Three treatments achieved a level of **Minimal Support**: **CBT, PMT, and Peer Pairing**. Each of these treatments was better than a no-treatment control group.

No Support

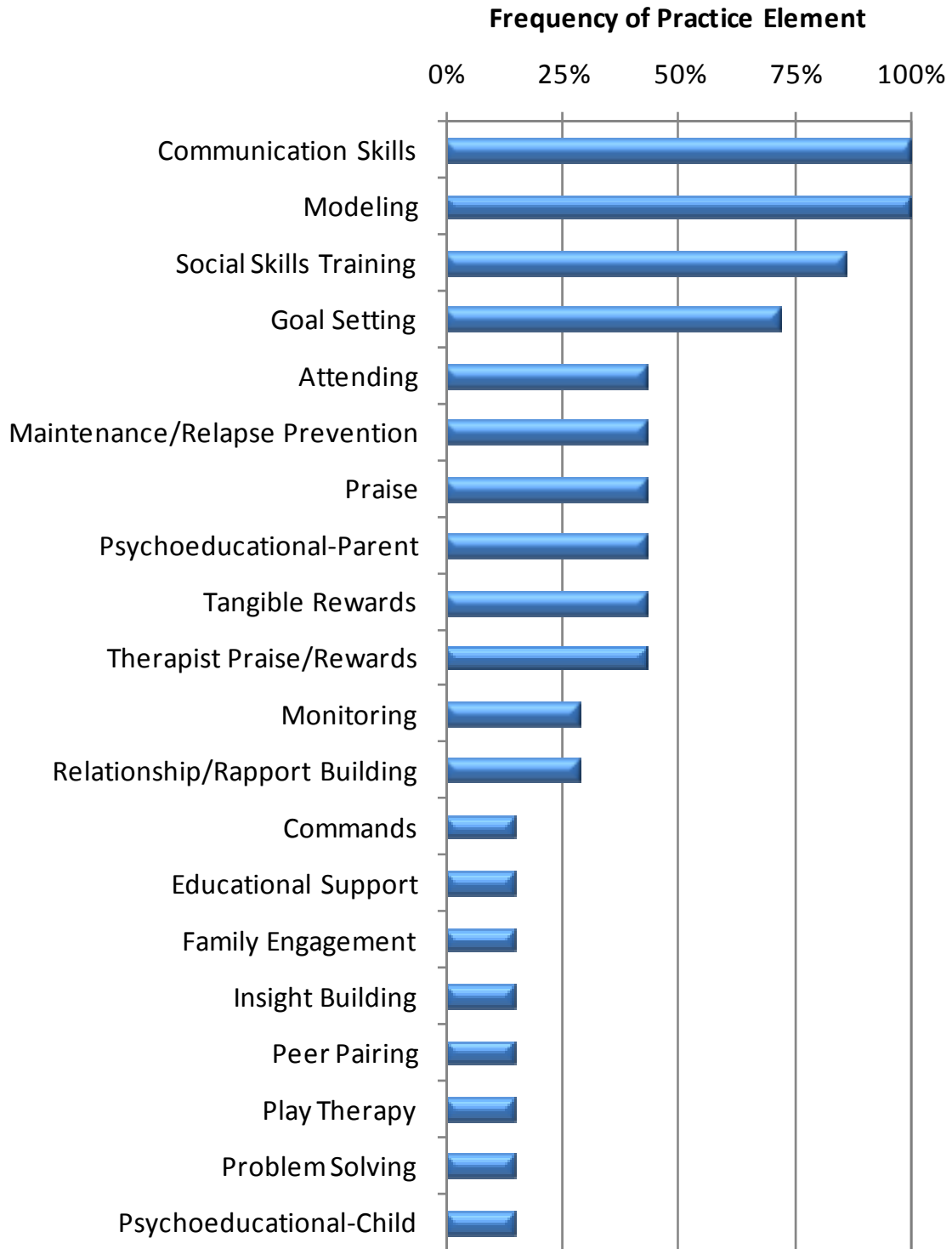
Auditory Integration Training was assigned a level of “no support” as it did not report outcome data for effects at immediate post-treatment. Notably, it did report 3-month follow up data showing that Auditory Integration Training was superior to a control group in which children listened to music. However, because definitions for evidence levels require effects at immediate post-treatment, and no clear explanation was given for why measures were not taken at that time, this treatment approach could not be assigned a level higher than **No Support**. **Hyperbaric Treatment**, which consists of placing a child in a pressurized, oxygen-enriched environment, was also assigned no support, due to lack of differences from a control group with close to normal atmospheric pressure.

TABLE 1.5 EVIDENCE-BASED TREATMENTS FOR AUTISM SPECTRUM

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 1: Best Support													
Intensive Behavioral Treatment	4	2006	High	100%	Male	2 to 12	Asian, African-American, Caucasian, Hispanic or Latino/a, Other	Pre-BA, MA, MD, PhD, Other	Daily to Weekly	5 weeks to 1917 days	Group Client, Individual Client, Parent Group	Clinic, Community Field, Day Care, Home, School	0.28
Intensive Communication Training	3	2007	High	93%	Male	1 to 10	African-American, Caucasian, Other	BA, MA, Teacher, Other	Daily to Bimonthly	152 days to 1 year	Group Client, Individual Client, Parent and Child, Parent Group, Parent Individual, Other	Clinic, School	0.49
Level 4: Minimal Support													
Cognitive Behavior Therapy	1	2007	Moderate	100%	Male	8 to 13	*	PhD	Weekly to Monthly	24 weeks	Group Client, Parent Group	Clinic	1.67
Parent Management Training	1	2009	High	100%	Male	2 to 9	*	MA	Weekly to Semiweekly	9 weeks	Parent Group, Parent Individual	*	0.55
Peer Pairing	1	2005	Moderate	100%	Male	3 to 4	*	Teacher	Weekly	13 weeks	Group Client	Day Care	1.48

Note. “Train” = Trainability; * - information could not be determined from the published reports.

**FIGURE 1.3. PRACTICE ELEMENTS FOR AUTISM SPECTRUM
(7 STUDY GROUPS)**



Not Scored, but of Interest

The **Caregiver Psychoeducation** program described above, although not analyzed for its autism outcomes, did beat a no-treatment control group on a measure of maternal depression in a single study, and would have been assigned a level of **Minimal Support** for this finding if leveling were applied to domains other than the primary symptoms of the selected youth. Thus, although it does not appear in the table, it appears to be a promising approach for reducing maternal depression among mothers of youth with autism.

QUALITY AND RELEVANCE

Both **Intensive Behavioral Treatment** and **Intensive Communication Training** demonstrated moderate treatment effects. For example, 69% of post-treatment scores for children receiving **Intensive Communication Training Behavioral Treatment** were better than the average score at pre-treatment. Similarly, 61% of post-treatment scores for children receiving **Intensive Behavioral Treatment** were better than the average pre-treatment score. These findings are all based on studies that are very recent.

As their names suggest, both of these treatment approaches are demanding. Several of the studies showed the treatments being administered daily, and for **Intensive Behavioral Treatment**, in some cases the treatment lasted over five years.

The treatments were delivered in a wide variety of settings and by therapists with a variety of training levels, particularly true for **Intensive Communication Training**. The majority of children in these studies were male, and generally quite young (some

starting as early as 12 months of age). No successful studies involved teenagers.

Although these results are quite promising none of these studies claimed that children were “autism free” following the intervention programs. Nevertheless, these findings represent an extraordinary improvement over the evidence base for interventions for autistic spectrum disorders in the recent past.

PRACTICE ELEMENTS

The practice element profiles of all successful treatments (7 altogether) are summarized in Figure 1.3. The results show that communication skills (100%) and modeling (100%) were the most common practice element across study groups. The next five most common practice elements were: social skills training (86%), goal setting (71%), maintenance (43%), attending (43%), and praise (43%).

The shape of the profile suggests that all successful treatments for autistic spectrum disorders involve teaching communication skills and modeling of appropriate communication or other behaviors. Other strategies include training in non-verbal communication (social skills), teaching parents and teachers to praise desired behaviors, and the setting of goals paired with the intensive rehearsal and reinforcement of behaviors consistent with those goals (i.e., discrete trial training).

DEPRESSION AND WITHDRAWAL

INTERVENTIONS IDENTIFIED

The interventions reviewed for depression or withdrawal included all those with controlled outcome research as

TABLE 1.6 EVIDENCE-BASED TREATMENTS FOR DEPRESSION AND WITHDRAWAL

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 1: Best Support													
Cognitive Behavior Therapy (CBT)	15	2007	High	94%	Both	8 to 23	American Indian or Alaska Native, Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Puerto Rican National, Other	Pre-BA, BA, MA, PhD	Semiweekly to Weekly	4 to 16 weeks	Group Client, Individual Client, Self Administered, Telephone Call, Other	Clinic, School	0.87
CBT plus Medication	3	2008	Moderate	94%	Both	12 to 21	Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Other	MA, MD, PhD	Semiweekly to Weekly	12 weeks to 6 months	Individual Client, Parent and Child, Parent Individual	Clinic	1.47
CBT with Parents Included	3	2008	Moderate	95%	Both	13 to 18	Caucasian, Other	BA, MA, MD, PhD	Semiweekly to Biweekly	8 to 12 weeks	Group Client, Individual Client, Parent and Child, Parent Group	Clinic	0.95
Family Therapy	2	2007	Moderate	100%	Both	10 to 17	Asian, African-American, Caucasian, Other	MA, PhD	Weekly to Monthly	12 weeks to 9 months	Family, Individual Client	Clinic	0.97
Level 2: Good Support													
Interpersonal Therapy	3	2004	Moderate	90%	Female	12 to 18	Hispanic or Latino/a, Puerto Rican National	MA, MD, PhD	Weekly	12 to 16 weeks	Individual Client	Clinic, School	0.99
Expressive Writing-Journaling-Diary	2	2006	*	100%	Both	15 to 22	Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Other	*	Weekly to Biweekly	3 to 4 weeks	Individual Client	Clinic, Home	0.46
Relaxation	2	1990	Moderate	86%	Both	10 to 18	Caucasian	MA, PhD	Semiweekly	5 to 8 weeks	Group Client	School	1.14
Client Centered Therapy	1	2006	High	100%	Both	15 to 22	Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Other	Pre-BA, MA	Weekly	4 weeks	Group Client	School	0.96
Level 4: Minimal Support													
Self-Control Training	1	1987	Moderate	100%	Both	9 to 12	*	MA, PhD	Semiweekly	5 weeks	Group Client	School	1.43
Self-Modeling	1	1990	Moderate	100%	Both	10 to 14	*	MA, PhD	Semiweekly	6 to 8 weeks	Individual Client	School	0.85

Note. "Train" = Trainability; * - information could not be determined from the published reports.

identified through the search procedures outlined above. Descriptions of 46 interventions in this area were organized into the following 14 treatment families: **Client Centered Therapy, CBT, CBT and Medication, CBT with Parents Included, Expressive Writing-Journaling-Diary, Family Therapy, Interpersonal Therapy, Life Skills, Problem Solving, Psychodynamic, Relaxation, Self-Control Training, Self-Modeling, and Social Skills.**

STRENGTH OF EVIDENCE

Best Support

Results for depression and withdrawal problems appear in Table 1.6. Of the treatment families identified, four demonstrated **Best Support**. These were **CBT and CBT plus Medication**. **CBT** was successful in 15 studies, and **CBT plus Medication** as well as **CBT with Parents Included** were each successful in three (3) studies. Two (2) studies were supportive of **Family Therapy**.

Good Support

Four (4) different treatment approaches demonstrated **Good Support** for depression. These were **Expressive Writing-Journaling-Diary, Interpersonal Therapy, Relaxation, and Client Centered Therapy**. **Expressive Writing-Journaling-Diary** and **Relaxation** were each successful in three (3) studies. **Client Centered Therapy** was successful in one (1) study, tying an evidence based treatment (**CBT**) one (1) time.

Minimal Support

Two (2) treatment families were found to have **Minimal Support**. **Self-Control Training** and **Self-Modeling** each had one (1) supportive study, in which each beat a no-

treatment control group. The evidence for these treatments is still considered preliminary.

No Support

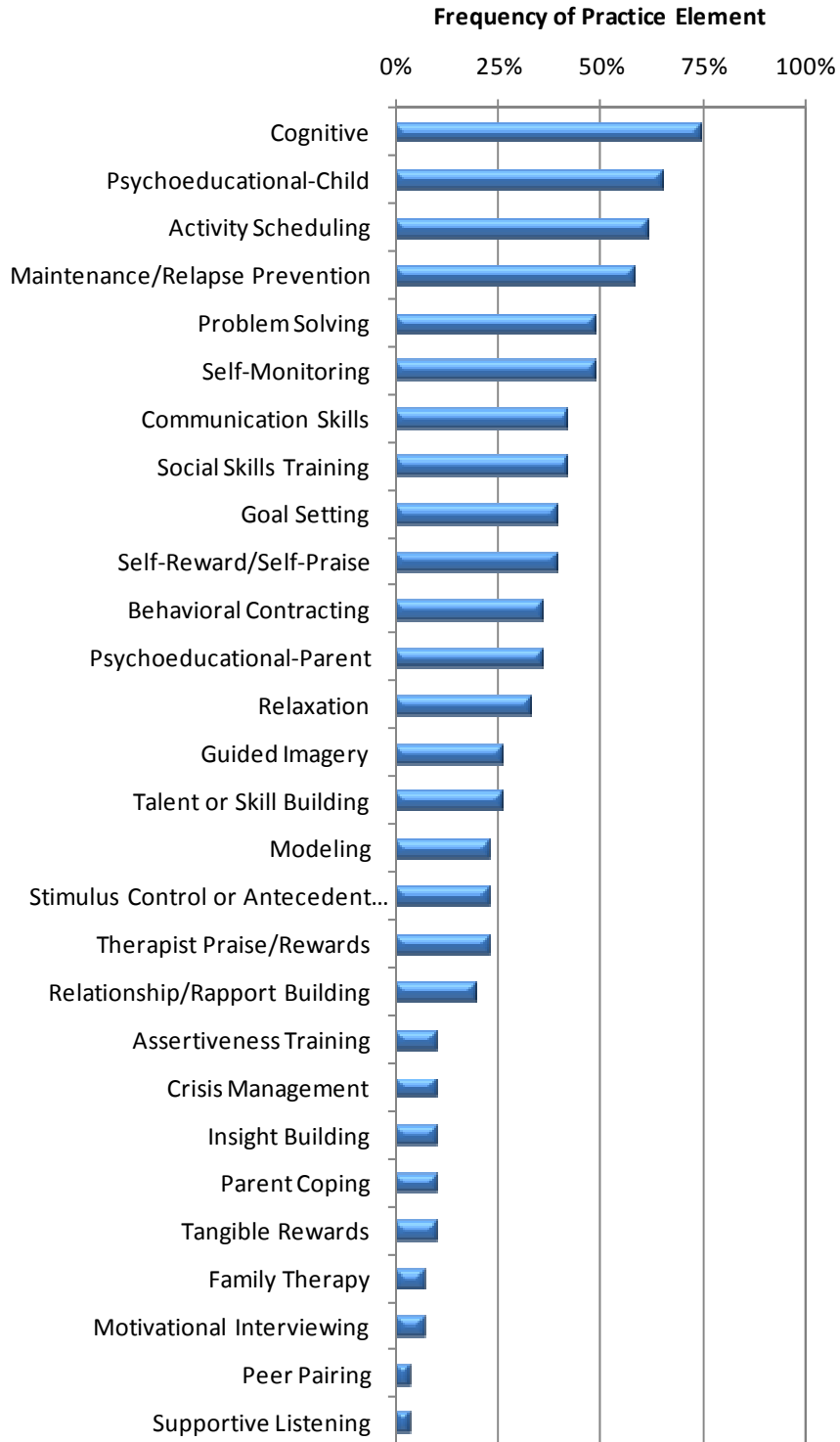
Finally, **No Support** was found for **Life Skills, Problem Solving, Psychodynamic Therapy** and **Social Skills**. This is somewhat unusual with respect to **Problem Solving** and **Social Skills**, as both of these approaches are typically part of CBT programs for depression. However, both studies were essentially too small to provide good tests of these approaches.

QUALITY AND RELEVANCE

Information about the quality and relevance of treatment families for depression appears in Table 1.6. At the highest level, **CBT** (with or without medication) was delivered to both boys and girls from ages 8 to 21, with treatments mainly being delivered weekly over a brief period of time. Effect sizes were quite large, especially for **CBT plus Medication**. For **CBT**, the average child score at post-test would be better than 81% of pretreatment scores. Adding medication, this figure improves to 93%. This literature is still quite current, with the most recent studies occurring in the past couple of years.

At the level of **Good Support** a variety of treatments were observed (see Table 1.6). Notably, these interventions appeared only to have support for ages 10 and higher. That limitation aside, the effect sizes were almost uniformly large (with the exception of **Expressive Writing**), and treatments were brief in nature and could be administered by master's level clinicians. For **Interpersonal Therapy**, the majority of study participants were girls.

FIGURE 1.4. PRACTICE ELEMENTS FOR DEPRESSION AND WITHDRAWAL (31 STUDY GROUPS)



At the level of **Minimal Support**, both treatments showed good effect sizes, but these studies are now fairly dated, and again only involved comparisons to waitlist control groups. Nevertheless, they appeared to be successful in a brief period of time and could be administered by master's level clinicians. Information about the ethnicity of participants in these studies is unknown.

PRACTICE ELEMENTS

The practice element profiles of all successful treatments (31 altogether) are summarized in Figure 1.4. The results show that for depression, cognitive (74%) was the most common practice element across study groups. The next five most common practice elements were: psychoeducation-child (65%), activity scheduling (61%), maintenance (58%), problem solving (48%), and self-monitoring (48%). The wide shape of the profile suggests that there are a large number of practices that are common among treatments for depression and lowered mood, with 12 different skills showing up in more than a third of the treatment families on average.

In general, most treatments involved training the youth to identify and correct thinking associated with lowered mood. Other strategies including teaching the youth basic information about moods and feelings, how to plan for and seek out rewarding experiences, how to solve problems in a structured manner, and how to keep track of the effects of events on mood and feelings. Most treatment approaches included a maintenance phase, in which skills were reviewed and rehearsed.

DELINQUENCY AND DISRUPTIVE BEHAVIOR

INTERVENTIONS IDENTIFIED

The interventions reviewed for delinquency and disruptive behavior included all those with controlled outcome research as identified through the search procedures outlined above. Descriptions of 175 interventions in this area were organized into the following 40 treatment families: **Anger Control, Assertiveness Training, Attention, Catharsis, Client Centered Therapy, Cognitive Behavior Therapy, Cognitive Behavior Therapy and Anger Control, Cognitive Behavior Therapy with Parents, Collaborative Problem Solving, Communication Skills, Contingency Management, Education, Exposure, Family Empowerment, Family Systems Therapy, Functional Family Therapy, Group Therapy, Life Skills, Multisystemic Therapy, Outreach Counseling, Parent Management Training, Parent Management Training and Classroom Contingency Management, Parent Management Training and Problem Solving, Parent Management Training and Self-Verbalization, Peer Pairing, Physical Exercise, Play Therapy, Problem Solving, Project CARE, Psychodynamic, Rational Emotive Therapy, Relaxation, Self-Control Training, Self Verbalization, Skill Development, Social Skills, Stress Inoculation, Therapeutic Foster Care, Transactional Analysis, and Wraparound.**

STRENGTH OF EVIDENCE

Best Support

Six (6) interventions demonstrated **Best Support**. These were **Parent Management**

Training (PMT), Multisystemic Therapy, Social Skills, CBT, and PMT plus Problem Solving.

Parent Management Training had by far the most substantial amount of supportive evidence, with 41 studies supporting this approach. **Multisystemic Therapy** was successful in nine (9) studies, beating an alternative treatment in all nine (9) of them. **Social Skills** training was successful in seven (7) studies, beating alternative treatments in four (4) comparisons. **CBT** demonstrated positive results in four (4) studies, and **PMT plus Problem Solving** was successful in three (3) studies.

The findings regarding **Multisystemic Therapy** are worthy of some additional discussion. There were at least 10 trials identified testing this approach. A rating of **Best Support** requires not only two or more demonstrations of beating an alternative treatment, but also that at least one demonstration is by an independent investigator team. Two (2) of those 10 studies were conducted independently (one in Norway, the other in the U.S.). In the first of those two (the Norway replication), **Multisystemic Therapy** was found not to beat the alternative treatment group on the primary outcome measure (hence only 9 successful trials are listed in Table 1.7).

In the second study (the U.S. replication), **Multisystemic Therapy** did beat the alternative treatment group; however the findings are not without some controversy. First, in that study, the treatment groups differed substantially prior to treatment, such that youth in the **Multisystemic Therapy** group scored on average more than 20 points lower on the Child and Adolescent Functional Assessment Scale (CAFAS), a measure of life

functioning (lower scores imply better functioning). The primary outcome measure in this study (re-arrest rates) was taken only at post-test, so the findings may in fact be confounded by the pre-treatment differences between groups (e.g., the youth treated with **Multisystemic Therapy** may have been an “easier” sample, given that they were less impaired at pretreatment). Thus, although strict application of the criteria suggests a rating of **Best Support** for this approach, the evidence is on average more controversial than for other interventions awarded **Best Support** in this report. Contention regarding the quality of the evidence has been noted in at least one other independent review of **Multisystemic Therapy**.

Good Support

Ten (10) treatment approaches demonstrated **Good Support**. These were **Problem Solving, Communication Skills, Contingency Management, Anger Control, Relaxation, Therapeutic Foster Care, Functional Family Therapy, PMT and Contingency Management, Rational Emotive Therapy, and Transactional Analysis**.

There were seven (7) studies in which **Problem Solving** was successful. In three (3) of those, it beat waitlist, and in four (4) of those, it beat a no-treatment or waitlist control. **Communication Skills** was successful in five (5) studies, and **Contingency Management** was successful in five (5) as well.

Anger Control training was successful in four (4) studies, and **Relaxation** was successful in two (2) studies. In one (1) it beat an alternative treatment, and in another it beat a no-treatment control group. **Therapeutic Foster Care, Functional**

TABLE 1.7 EVIDENCE-BASED TREATMENTS FOR DISRUPTIVE BEHAVIOR

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 1: Best Support													
Parent Management Training (PMT)	41	2008	High	93%	Male	2 to 15	Asian, Australian, Australian Koori, African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Norwegian Or Western European	Pre-BA, BA, MA, PhD, Teacher, Parent, Other	Daily to Weekly	1 day to 2 years	Family, Group Client, Multi-Family, Parent and Child, Parent Group, Parent Individual, Phone Sessions/Videotape Instruction, Self Administered	Clinic, Home, Hospital, Playground, School, Undergraduate University Course	0.98
Multisystemic Therapy	9	2006	High	95%	Male	10 to 17	Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic	BA, MA, MD, Other	Daily to Weekly	5 weeks to 438 days	Family, Individual Client, Parent and Child, Parent Individual	Community Field, Home, Hospital, School	0.46
Social Skills	7	2001	High	98%	Both	4 to 19	American Indian or Alaska Native, Asian, African-American, Caucasian, Hispanic or Latino/a, Other	MA, PhD	Daily to Weekly	3 to 22 weeks	Group Client	Clinic, Community Residential, Corrections, Day Treatment Center, School	0.60
Cognitive Behavior Therapy	4	2004	High	100%	Both	9 to 18	American Indian or Alaska Native, Asian, African-American, Caucasian, Hispanic or Latino/a	MA, PhD, Other	Semiweekly to Weekly	6 to 12 weeks	Group Client	Corrections, School	0.57
Assertiveness Training	3	1999	High	100%	Both	13 to 18	African-American, Caucasian, Hispanic or Latino/a, Multiethnic	Other	Semiweekly	2 to 4 weeks	Group Client, Peer	Hospital, School	0.27
PMT and Problem Solving	3	2007	High	89%	Male	0 to 13	African-American, Caucasian	BA, MA	Weekly to Biweekly	12 weeks to 8 months	Family, Group Client, Individual Client, Parent Group, Parent Individual	Clinic, Hospital	0.98
Level 2: Good Support													
Problem Solving	7	2000	High	96%	Male	5 to 17	African-American, Caucasian, Israeli (Jewish, Arab, and Druz)	BA, MA, PhD, Other	Semiweekly to Weekly	45 days to 20 weeks	Bibliotherapy, Group Client, Individual Client	Home, Hospital, School	0.52
Communication Skills	5	1988	Moderate	92%	Male	6 to 16	*	BA, MA, PhD	Weekly	4 to 7 weeks	Family, Multi-Family, Parent and Child, Parent Individual, Other	Clinic	1.27
Contingency Management	5	1991	High	100%	Male	4 to 19	African-American, Caucasian	Pre-BA, BA, MA, PhD, Teacher, Other	Semiweekly to Weekly	4 to 20 weeks	Group Client, Individual Client	Clinic, Corrections, Hospital, School	1.08

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Anger Control	4	1993	Moderate	87%	Male	9 to 21	American Indian or Alaska Native, Asian, African-American, Caucasian, Hispanic or Latino/a	MA, PhD, Other	Semiweekly to Weekly	5 to 12 weeks	Group Client, Individual Client	Corrections, School	0.20
Relaxation	2	1986	Moderate	100%	Both	9 to 18	*	MA	Daily to Semiweekly	5 weeks to 80 days	Individual Client	Corrections, School	0.62
Therapeutic Foster Care	2	2005	Moderate	100%	Both	12 to 17	American Indian or Alaska Native, Asian, African-American, Caucasian, Hispanic or Latino/a, Other	Other	Daily	174 days	Family, Foster Care, Individual Client, Parent Group, Parent Individual	Foster Home	0.80
Functional Family Therapy	1	1973	High	74%	Both	13 to 16	*	MA	*	5 to 6 weeks	*	*	*
Parent Management Training and Classroom Contingency Management	1	2007	*	100%	Both	5 to 6	Asian, African-American, Caucasian, Hispanic or Latino/a, Other	Teacher, Other	Semiweekly to Weekly	2 years	Group Client, Parent Group	School	0.25
Rational Emotive Therapy	1	1978	High	100%	Both	15 to 17	African-American, Hispanic or Latino/a	MA	Daily	12 weeks	Group Client	School	2.45
Transactional Analysis	1	1975	Moderate	97%	Male	15 to 17	African-American, Caucasian, Hispanic or Latino/a, Other	MA, Other	Semiweekly	30 weeks	Group Client	Corrections	*

TABLE 1.7 EVIDENCE-BASED TREATMENTS FOR DISRUPTIVE BEHAVIOR (CONTINUED)

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 3: Moderate Support													
Attention	1	1966	*	100%	Female	14 to 18	*	*	Semiweekly	3 months	Group Client	Corrections	*
Outreach Counseling	1	1978	Moderate	100%	*	*	*	MA, Other	*	*	*	Community Field	*
Peer Pairing	1	1982	Moderate	100%	Both	15 to 18	*	Teacher	Semiweekly	7 weeks	Group Client, Individual Client	School	*
Self Control Training	1	1979	Low	100%	*	14 to 17	African-American, Caucasian, Ethnicity Other: Puerto Rican, Hispanic or Latino/a	PhD	Weekly to Semiweekly	4 weeks	Group Client, Individual Client	Community Residential	0.30
Level 4: Minimal Support													
Parent Management Training and Self-Verbalization	1	2004	Moderate	100%	Both	6 to 12	African-American, Caucasian	Other	*	*	Group Client, Parent Individual	Community Field, Home, School	0.02
Physical Exercise	1	1995	*	91%	Male	7 to 13	*	*	Semiweekly	4 weeks	Group Client	Partial Hospital	*
Stress Inoculation	1	1981	High	100%	Male	13 to 18	*	MA	Semiweekly	5 weeks	Individual Client	Corrections	0.63

Note. “Train” = Trainability; * - information could not be determined from the published reports.

Family Therapy, PMT and Classroom Contingency Management, and Rational Emotive Therapy were each successful in one study. Each of these three treatment approaches beat an alternative treatment one (1) time when studied. **Transactional Analysis** was successful in one (1) study, in which it tied an evidence-based treatment (**Contingency Management**).

Moderate Support

Four (4) treatment approaches demonstrated **Moderate Support**. **Self-Control Training, Peer Pairing, and Outreach Counseling** were successful in one (1) study each. All three treatment approaches did not involve the use of a treatment manual, but managed to beat an alternative treatment.

Minimal Support

Three (3) treatments demonstrated **Minimal Support** for delinquency or disruptive behavior. **Stress Inoculation and PMT plus Self-Verbalization** each beat a waitlist in one (1) study, and **Physical Exercise** also beat a no-treatment group in one (1) study.

No Support

Many of the treatments tested were found to have **No Support**. These included: **Catharsis, Client Centered Therapy, Cognitive Behavior Therapy and Anger Control, Cognitive Behavior Therapy with Parents, Collaborative Problem Solving, Education, Exposure, Family Empowerment, Family Systems Therapy, Group Therapy, Life Skills, Play Therapy, Project CARE, Psychodynamic, Self Verbalization, Skill Development, and Wraparound.**

Risks

Moreover, both **Group Therapy** and **Project CARE** treatment approaches demonstrated negative effects on outcomes, and are considered treatments with risks.

QUALITY AND RELEVANCE

Information about the quality and relevance of treatment families for delinquency and disruptive behavior appears in Table 1.7. At the highest level of support, all six treatments were rated as highly trainable. **Parent Management Training** was most often successful with younger children; whereas **Multisystemic Therapy, Cognitive Behavior Therapy** and **Assertiveness Training** were effective primarily among adolescents only. **Social Skills** training appeared to be successful across most school-aged children.

The treatments were fairly brief for the most part; however, one parent training program lasted as long as 2 years. The effect sizes across all the treatment programs at this level of support were quite good. The highest effect size for a treatment with **Best Support** was found for **Parent Management Training**, which showed that the average child score at post-test would be better than 83% of the pretreatment scores. A moderate effect size was observed for **Multisystemic Therapy**, which could in part be a reflection of the more challenging youth participants in those studies. **Assertiveness training** showed the lowest effect size of level 1 treatments.

Interventions with **Best Support** were applicable across a diversity of ethnic groups, and some were delivered by therapists at the undergraduate level. The most common treatment format for these treatment families

**FIGURE 1.5A. PRACTICE ELEMENTS FOR DISRUPTIVE BEHAVIOR
(AGE 12 AND UNDER; 72 STUDY GROUPS)**

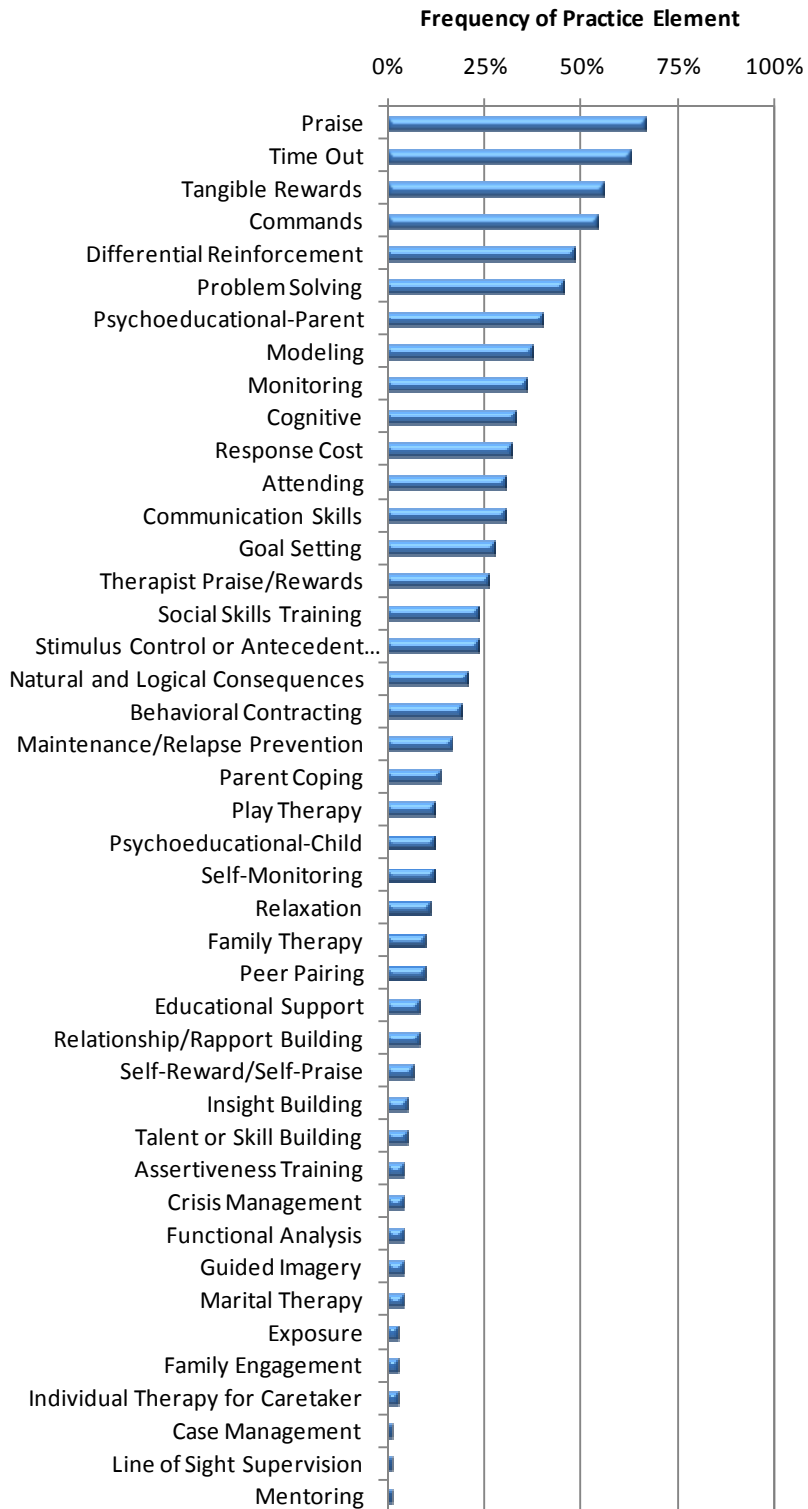
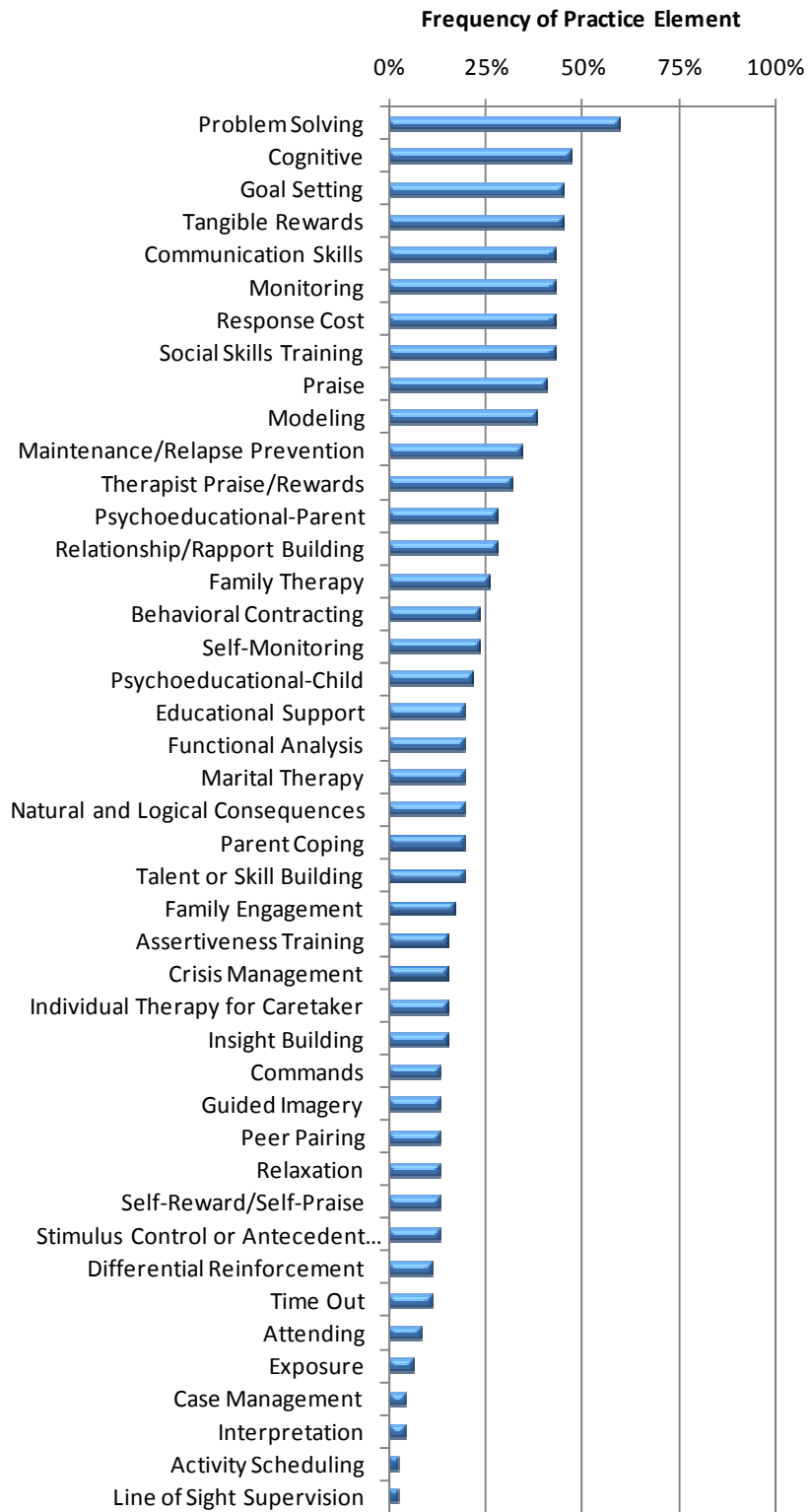


FIGURE 1.5B. PRACTICE ELEMENTS FOR DISRUPTIVE BEHAVIOR (AGE 13 AND OVER; 47 STUDY GROUPS)



(other than for **Parent Management Training** and **Multisystemic Therapy**) was a group format with youth. This suggests that these interventions may have particular benefits that overcame the possible risks associated with group formats for youth with these types of problems. A more generic group therapy approach has been shown in our review to have negative effects for youth with disruptive behavior.

Review of treatments for disruptive behavior demonstrated more interventions available with **Good Support** than for any other problem area. All in all, 10 treatment approaches were identified. Collectively, these were moderately to highly trainable, and many were applicable across a wide age range. Most of the treatments were brief in nature; however some lasted up to 8 months. These interventions were tested primarily on Figure 1.5a Disruptive Caucasian, African American, and Latino youth; **Multidimensional Treatment Foster Care** and **Anger Control** showed the greatest range of ethnic diversity among the youth in those studies.

For treatment families with **Good Support** for disruptive behavior, effect sizes were varied. The largest effect size was observed for **Rational Emotive Therapy**, which showed that the average child score at post-test would be better than 99% of the pretreatment scores (although this estimate is based on a single, very old study). Effect sizes could not be determined for two of the different approaches due to the lack of available data. Qualifying studies of **Functional Family Therapy**, **Rational Emotive Therapy**, and **Transactional Analysis** were quite old—all being conducted approximately 30 or more years ago. Studies on **Communication Skills** and **Relaxation**

for these problems are approximately 20 years old or more.

Four treatment families with **Moderate Support** were each only tested in a single study, all of which were published prior to 1985. None of these approaches was rated high for trainability, given the lack of treatment manuals. **Self-Control Training**, in particular, was only delivered by doctoral level providers, so seems particularly challenging in terms of training and dissemination. This was the only approach for which effect size could be calculated. Those treatments reporting age range were observed to be applicable only to adolescents. On the positive side, two treatments that reported duration (**Self-Control Training**, **Peer Pairing**) were brief in nature.

Three interventions with **Minimal Support** were also brief, and were successfully delivered in non-clinic settings. The research on **Physical Exercise** and on **Stress Inoculation** are older than 10 years. The one study on **PMT and Self-Verbalization** is more recent.

PRACTICE ELEMENTS

Because of differences in practice patterns noted across the age range or age-related problem groupings (e.g., oppositional problems versus willful misconduct), separate practice element profiles are summarized in Figures 1.5a (all studies including any youth under the age of 13) and 1.5b (all studies including any youth ages 13 or older).

In studies of the younger group of youth with disruptive behavior, praise (67%) was the most common practice element. In that same younger group, the next five most common practice elements were: time out

(63%), tangible rewards (56%), commands (54%), differential reinforcement (i.e., “planned ignoring;” 49%), and problem solving (46%). For the most part, interventions were based on the use of parent strategies, including rewards (praise or tangibles), the alternate rewarding and ignoring of selected behaviors, effective use of commands and instructions, and psychoeducation about children’s behavior. The most common youth-directed strategy in this age group was the training of problem solving skills.

In studies of the older group of youth with disruptive behavior, problem solving (60%) was the most common practice element. In that same older group, the next six most common practice elements were: cognitive (47%), goal setting (45%), tangible rewards (45%), communication skills (43%), social skills training (43%), response cost (43%), and parent monitoring (43%). In contrast with the findings from studies of youth under the age of 13, these studies summarized interventions that were youth-directed and emphasized problem solving, goal-setting, communication, and social interaction.

Some skills were common among practices across developmental level. Specifically, Praise, Tangible Rewards, and Problem Solving were in the top 10 common practices for both age groupings, and were the three most common techniques among successful treatments for disruptive behavior regardless of age—appearing in 57%, 50%, and 48% of all successful studies for disruptive behavior respectively. Other practices common to both age groupings were cognitive, modeling, and parent monitoring. Thus, overall it seems that emphasizing a mix of cognitive and problem solving skills along with parent use of praise,

rewards, and increased monitoring of behavior is suitable across the age range.

EATING PROBLEMS

INTERVENTIONS IDENTIFIED

The interventions reviewed for eating problems (e.g., anorexia, bulimia) included all those with controlled outcome research as identified through the search procedures outlined above. It should be noted that this area has a somewhat smaller literature than for other areas.

Descriptions of 20 interventions in this area were organized into the following 6 treatment families: **Client Centered Therapy, Cognitive Behavior Therapy, Education, Goal Setting, Family Systems Therapy, and Family Therapy.**

STRENGTH OF EVIDENCE

Good Support

Of the treatment families identified, three (3) were found to have **Good Support. Family Therapy** and **Family Systems Therapy** (a specific type of family therapy) were each successful in two studies. **Cognitive Behavior Therapy** was successful in one (1) study, beating an alternative treatment.

No Support

No Support was found for **Client Centered Therapy, Goal Setting, or Education.**

QUALITY AND RELEVANCE

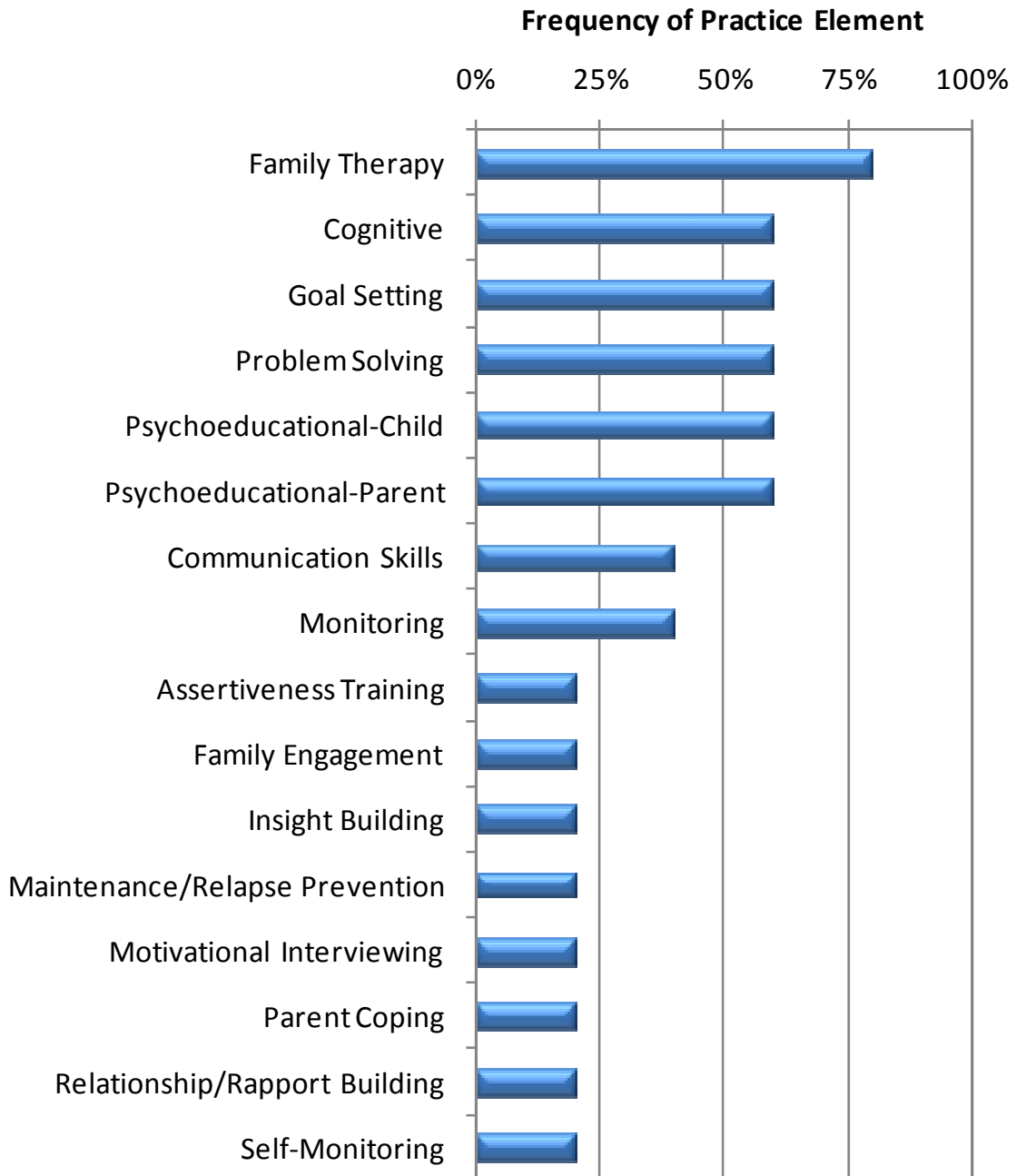
Successful treatments were identified only for youth ages 11 and higher (see Table 1.8). Both types of family therapy showed better effect sizes, better study compliance rates, and included a greater ethnic diversity

TABLE 1.8 EVIDENCE-BASED TREATMENTS FOR EATING PROBLEMS

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 2: Good Support													
Family Systems Therapy	2	1999	Moderate	100%	Female	11 to 20	African-American, Caucasian, Hispanic or Latino/a	MA, PhD	Weekly to Bimonthly	1 year to 1.5 years	Family	Clinic	1.16
Family Therapy	2	2007	Moderate	92%	Female	11 to 19	Caucasian, Middle Eastern	MD, PhD	Weekly to Monthly	6 months to 1 year	Family	*	0.90
Cognitive Behavior Therapy	1	2007	Moderate	70%	Female	13 to 20	Caucasian	*	Weekly to Monthly	6 months	Individual Client, Parent and Child	Clinic	0.41

Note. "Train" = Trainability; * - information could not be determined from the published reports.

**FIGURE 1.6. PRACTICE ELEMENTS FOR EATING PROBLEMS
(5 STUDY GROUPS)**



of youth relative to **CBT**. All studies involved primarily female participants, and all treatments on average took at least six months, with **Family Systems Therapy** taking up to 18 months.

PRACTICE ELEMENTS

The practice element profiles of all successful treatments (5 altogether) are summarized in Figure 1.6. The results showed that family therapy as a practice was the most common element, showing up in 80% of the treatments (not surprisingly, since 4 of the 5 treatments were in fact family therapy approaches). The next five most common elements among all 5 treatments were: Cognitive, Goal Setting, Problem Solving, Psychoeducation-Child, Psychoeducation-Parent, each occurring in 60% of successful treatments.

SUBSTANCE USE

INTERVENTIONS IDENTIFIED

The interventions reviewed for substance use included all those with controlled outcome research as identified through the search procedures outlined above.

Descriptions of 25 interventions in this area were organized into the following 13 treatment families: **Client Centered Therapy, Cognitive Behavior Therapy, Contingency Management, Education, Goal Setting, Goal Setting with Monitoring, Family Systems Therapy, Family Therapy, Group Therapy, Motivational Interviewing/Engagement, Project CARE, Purdue Brief Family Therapy, and a Twelve Step Program.**

STRENGTH OF EVIDENCE

Best Support

Of the treatment families identified, only **Family Therapy** was found to have the best support, and was successful in three (3) studies.

Good Support

Of the remaining treatment families, six (6) were found to have **Good Support**. **Cognitive Behavior Therapy** was successful in three (3) studies, beating an alternative treatment in one of them. Motivational Interviewing was successful in two (2) studies, and **Contingency Management, Family Systems Therapy, Goal Setting with Monitoring, and Purdue Brief Family Therapy** also each beat an alternative treatment in one (1) study.

Minimal Support

Goal Setting (without monitoring) was successful in a single study against a no-treatment control group.

No Support

No Support was found for **Client-Centered Therapy, Education, Group Therapy, Project CARE, or the Twelve Step Program.**

Risk

As with delinquency and disruptive behavior, both **Group Therapy** and **Project CARE** treatment approaches demonstrated negative effects on outcomes, and are therefore considered treatments with risks.

QUALITY AND RELEVANCE

Family Therapy was a brief, weekly treatment with a reasonable effect size (the largest of any treatment approach identified),

TABLE 1.9 EVIDENCE-BASED TREATMENTS FOR SUBSTANCE USE

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 1: Best Support													
Family Therapy	3	2001	High	100%	Male	6 to 21	Asian, African-American, Caucasian, Hispanic or Latino/a, Other	MA, PhD	Weekly	3 weeks to 6 months	Family, Individual Client, Parent Individual	Clinic	0.71
Level 2: Good Support													
Cognitive Behavior Therapy	3	2006	High	62%	Both	13 to 18	Caucasian	BA, MA, PhD	Weekly	2 to 12 weeks	Group Client	School	0.55
Motivational Interviewing/Engagement	2	2006	High	100%	Both	14 to 20	American Indian or Alaska Native, Asian, African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Pacific Islander, Other	MA	Daily	1 day	Individual Client	Community Field	0.13
Contingency Management	1	1994	High	100%	Male	13 to 18	African-American, Caucasian, Hispanic or Latino/a	BA, MA	Semiweekly	6 months	Parent and Child	Clinic	0.48
Family Systems Therapy	1	1992	High	78%	*	11 to 20	African-American, Caucasian, Hispanic or Latino/a	MA	Weekly	7 to 15 weeks	Family	Clinic	*
Goal Setting/Monitoring	1	2007	Moderate	100%	Both	14 to 17	Caucasian, Other	*	Weekly	3 weeks	Individual Client, Parent Individual	School	0.46
Purdue Brief Family Therapy	1	1990	Moderate	100%	Male	12 to 22	*	*	*	12 weeks	Family	*	*
Level 4: Minimal Support													
Goal Setting	1	2007	Moderate	100%	Both	14 to 17	Caucasian, Other	*	Weekly	2 weeks	Individual Client	School	0.34

Note. "Train" = Trainability; * - information could not be determined from the published reports.

**FIGURE 1.7. PRACTICE ELEMENTS FOR SUBSTANCE USE
(12 STUDY GROUPS)**



and it was applicable across a wide age range. It was also tested successfully with a wide variety of ethnic groups relative to other evidence based treatments for substance use.

Most of the Level 2 treatment approaches were tested with adolescents, although a successful study of **Family Systems Therapy** included participants as young as 11.

Motivational Interviewing was the briefest of the interventions, but it should be noted that the outcomes in these studies were not substance use related, but rather related to engagement in treatment. Thus, **Motivational Interviewing** appears to be warranted to increase compliance with other effective treatment approaches, but may be insufficient on its own. **Family Therapy** appears to be the most promising approach for reducing substance use overall.

PRACTICE ELEMENTS

The practice element profiles of all successful treatments are summarized in Figure 7. Motivational Interviewing was the most common practice. This bears special mention, because when characterized as a treatment family, motivational interviewing was tested successfully in 3 studies. However, four other treatment families included motivational interviewing into their protocols, thus making the actual practice element the most common one among all practices in evidence-based approaches for substance use (58%, or 7 of the 12 successful studies). This reinforces the earlier point that motivational interviewing may be an important feature to enhance any effective intervention for substance use. The next three most common practice elements for substance use were: Family Therapy (42%), Cognitive (33%), and Psychoeducation-Child (33%). Several other practice elements were

found in 25% of successful treatment protocols: Assertiveness Training, Communication Skills, Family Engagement, Monitoring, Psychoeducation-Parent, and Stimulus Control or Antecedent Management.

TRAUMATIC STRESS

INTERVENTIONS IDENTIFIED

The treatment families reviewed for traumatic stress included all those with controlled outcome research as identified through the search procedures outlined above. Descriptions of 17 interventions in this area were organized into the following 8 treatment families: **Client Centered Therapy, CBT, CBT plus Medication, CBT with Parents Included, CBT with Parents Only, Eye Movement Desensitization and Reprocessing (EMDR), Play Therapy, and Psychodrama.**

STRENGTH OF EVIDENCE

Best Support

Of those treatments identified for traumatic stress, only **Cognitive Behavior Therapy with Parents** was found to have **Best Support**. This treatment approach was successful in four (4) studies, beating alternative treatments three (3) times and a waitlist control condition one (1) time.

Good Support

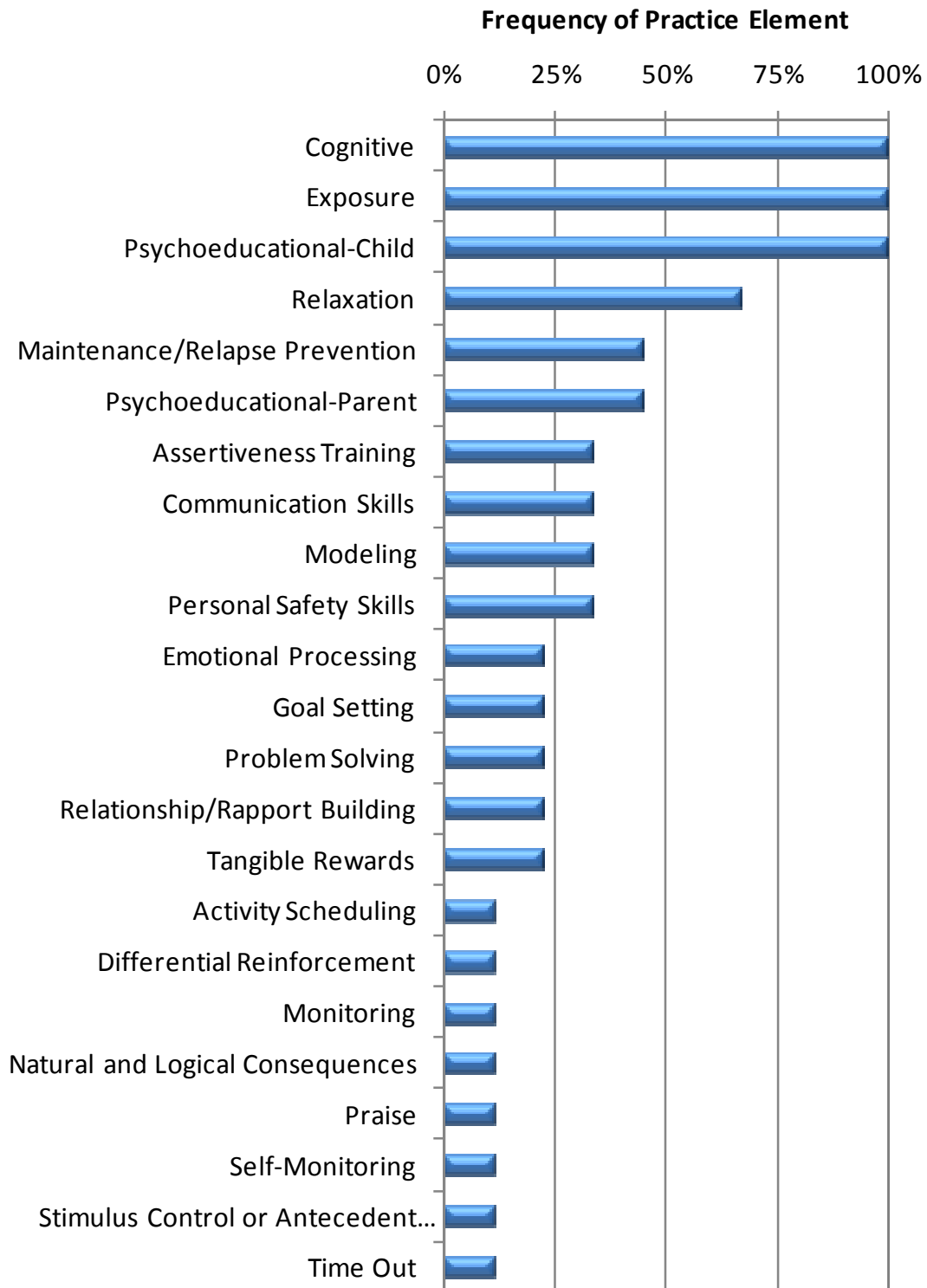
Good Support was found for **Cognitive Behavior Therapy**. This treatment approach was successful in five (5) studies. This approach actually had more successful results in its favor than for the Level 1 treatment; however, it remained a Level 2 treatment because all successes relative to active treatment control groups were performed by

TABLE 1.10 EVIDENCE-BASED TREATMENTS FOR TRAUMATIC STRESS

Treatment Family	Wins/Ties	Year	Train	Compliance	Gender	Age	Ethnicity	Therapist	Frequency	Duration	Format	Setting	Effect Size
Level 1: Best Support													
Cognitive Behavior Therapy (CBT) with Parents Included	4	2004	High	94%	Female	2 to 18	African-American, Caucasian, Hispanic or Latino/a, Multiethnic, Other	MA, PhD, Other	Semiweekly to Weekly	12 to 20 weeks	Individual Client, Parent and Child, Parent Individual	Clinic	0.79
Level 2: Good Support													
CBT	5	2007	High	93%	Both	5 to 18	African-American, Caucasian, Hispanic or Latino/a, Other	MA, PhD, Other	Weekly	8 to 20 weeks	Group Client, Individual Client	Clinic, Corrections, School	1.16
Level 4: Minimal Support													
Play Therapy	1	2002	Moderate	100%	Both	8 to 12	Chinese National	Other	Semiweekly	4 weeks	Group Client	School	*
Psychodrama	1	1999	Moderate	92%	Female	11 to 13	African-American, Hispanic or Latino/a, Other	MA	Weekly	20 weeks	Group Client	School	0.52

Note. "Train" = Trainability; * - information could not be determined from the published reports.

**FIGURE 1.8. PRACTICE ELEMENTS FOR TRAUMATIC STRESS
(9 STUDY GROUPS)**



members of a single network of investigators. Nevertheless, this is a clear instance where the choice of a Level 2 treatment over a Level 1 treatment could be clinically appropriate.

Minimal Support

Two treatment approaches were found to have *Minimal Support*. These were **Psychodrama** and **Play Therapy**, which each beat a no-treatment group, each in one (1) study.

No Support

No Support was found for the following treatment approaches: **Client Centered Therapy**, **Cognitive Behavior Therapy with Parents Only** (i.e., therapy that does not involve the child at all), and **EMDR**.

In summary, the great majority of the evidence for treatment of traumatic stress in youth supports the use of **Cognitive Behavior Therapy**, with evidence for inclusion of non-offending parents in the treatment program when available.

QUALITY AND RELEVANCE

Cognitive Behavior Therapy, whether it included parents or not, was rated as highly trainable, had low dropout rates, could be administered by master's level clinicians, and lasted from 8 to 20 weeks. Formats for youth were both group and individual, and parent involvement could either be in group or individual parent format. Both approaches were tested successfully in clinic and school settings, with **Cognitive Behavior Therapy** alone also performing successfully in a correctional setting. Both approaches were successful with boys and girls from a variety of ethnic backgrounds, and published studies on these approaches were recent.

For those studies with *Minimal Support* trainability was not rated as high. Only **Play Therapy** showed results with balanced percentage of boys and girls, and the age range and ethnic background of youth in the one study of **Play Therapy** are unknown. Both approaches were administered in school settings in group format, and the studies were within the past 10 years. Given the lack of detail about their applicability and the minimal amount of supportive evidence overall, **Psychodrama** and **Play Therapy**—although promising—are not recommended as a first choice intervention for traumatic stress.

PRACTICE ELEMENTS

The practice element profiles of all successful treatments (9 altogether) are summarized in Figure 1.10. The results show that for traumatic stress, Cognitive (100%), Exposure (100%), and Child Psychoeducation (100%) were the most common practice elements across study groups. The next six most common practice elements were: Relaxation (67%), Maintenance/Relapse Prevention (44%), Psychoeducation-Parent (44%), Assertiveness Training (33%), Communication Skills (33%), and Modeling (33%). This profile is somewhat similar to anxiety; however, the high frequency of assertiveness training (33% of successful treatment protocols) is a notable difference from common practices for non-trauma based anxiety problems. In addition, although training in personal safety skills was not part of our standard code set and was therefore not represented in the figure, this practice was written in by coders as an “other” practice for 33% of successful treatments, making it another important feature specific to treatments for traumatic stress.

In general, most successful treatments in this area involved training the youth to identify and correct thinking associated with anxiety and to cope with avoidance and anxiety triggers through exposure, often in imaginal or narrative form. Other supportive strategies include teaching the youth how to manage personal safety, to be assertive when necessary, and to solve problems that may be related to traumatic stress triggers.

Review of the Evidence Base: Summary of Key Points

- A wide variety of evidence-based practices are available for all of the problem areas reviewed, and many had large effect sizes.
- Although more than 1,000 different treatments were evaluated for this report, the vast majority of findings were supportive of cognitive behavior therapy and parent management training. Both of these approaches apply to more than one problem type.
- Family therapy appeared to have particular value for youth with eating disorders or substance use problems.
- Many of the most supported treatments appear to make use of a common set of cognitive and behavioral strategies, including cognitive restructuring, problem solving, relaxation, rewards, social skills, and goal setting. All of these strategies were part of evidence-based interventions for multiple different problem types.
- It is recommended that the services for CAMHD youth continue to prioritize selection of those interventions with the greatest support, and to consider choosing from among the many other evidence-based alternatives should challenges arise. There are enough promising approaches outlined in the treatment family lists as well as the practice element profiles to support continually evidence-informed management and adaptations of the service plans for CAMHD youth.

RELEVANCE MAPPING

OVERVIEW

The following section of this report summarizes the degree to which a sample of CAMHD registered youth is “covered” by evidence-based treatment protocols tested in clinical trials. The term “relevance mapping” is used to evaluate how relevant the evidence base is to those youth served by CAMHD, under a variety of different assumptions. For the evidence base to be considered relevant for a particular CAMHD youth, there must be a match between that youth and at least one study from the research literature. In other words, if a child matches the characteristics of children in at least one study that produced an evidence-based treatment, that youth is considered “covered” by the evidence base.

Coverage can be defined in different ways, depending on how strict or loose a match is required between a youth in the service sample and participants in a given study. Specifically, we examined five child characteristics and their combinations, from a large set of possible dimensions: **Problem, Age, Gender, Ethnicity**, and the **Setting** (abbreviated as “PAGES”) in which they were treated, as factors on which the child could match a given study. For example, one could choose to define coverage as requiring matches on only Problem and Age. A youth is therefore “covered” if at least one study in the literature included youth with the same Problem and of the same Age as that particular youth from the CAMHD service sample. More conservative criteria could define coverage as requiring matches on all five features: Problem, Age, Gender, Ethnicity,

and Setting. Generally speaking, the greater the number of features needed to define a match between a youth and a study, the lower the coverage of children by evidence-based treatments.

This framework allows us to examine two broad issues. First, we can examine this relationship between CAMHD youth and the research literature from the perspective of the youths themselves. How many youth are covered under a variety of assumptions? If there are some youth not covered, what are their characteristics; that is, who is not represented in the evidence base, and why? For example, although there are studies of 11 year old youths with depressed mood treated in outpatient settings, perhaps there are no such studies with Native Hawaiian youths.

Second, we can examine this relationship from the perspective of the treatments or practices. What are the practices that are most important to learn in order to serve the largest number of CAMHD youth with evidence-based approaches? What is the minimum number of common practice elements making up the evidence based treatments relevant to CAMHD?

The first set of issues is outlined in the **youth coverage report**, which shows how many youth are covered and are not covered by evidence-based treatments, under different scenarios regarding which characteristics must match for a child to be considered “covered.” The **youth coverage report** also gives a description of the features of CAMHD youth who are not covered by evidence-based treatments. This description reveals which types of youth (e.g., older, younger) are not covered.

Second, the **practice coverage report** details the types of treatment approaches

that are responsible for the coverage, with frequencies showing the percentage of the youth in service covered by each approach. This report shows three things about evidence based treatments and their relevance to CAMHD youth: (1) what is the minimum number of treatments to learn (and what are they?) in order to serve the largest possible percentage of CAMHD youth with evidence-based treatments, (2) to what percentage of youth does each evidence based treatment or practice apply, and (3) what would happen if you decided not to learn any one of those treatments or practices in terms of the drop in number of youth that could be served with evidence based treatments. These practice coverage reports can be performed using both treatment families (treatments as defined on previous versions of the CAMHD Blue Menu) or by practice elements (the components of evidence-based practices). The specific practices can therefore inform an efficient training or practice development plan specific to youth registered with CAMHD.

METHOD

SERVICE SAMPLE

The sample in this report represents 1,781 registered youth receiving services during the Fiscal Year 2007. The characteristics of the total Service Sample are outlined in Table 2.1, under the column labeled “N.” The median age of youth in this sample was 15.

STUDY SAMPLE

Four hundred and thirteen (413) papers reporting 435 randomized clinical trials were

coded for this report. These studies spanned a period of 42 years of research and tested over a thousand different non-pharmacological treatments targeting anxiety disorders, attention deficit and hyperactivity, autistic spectrum, depression, disruptive behavior, substance use, and traumatic stress. These studies produced 278 protocols that were evidence-based at Level 1 or Level 2. For a study to be included, the majority of participants had to be under the age of 19. We did not include studies of interventions for health related conditions (e.g., childhood obesity, diabetes management) or some of the less common mental health conditions among children and adolescents (e.g., bipolar disorder, tic disorders).

Studies contributing to this review were identified through a combination of strategies, including: (a) computerized searches of electronic databases for relevant publications; (b) evaluation of studies reviewed by the APA Task Force on Empirically Supported Psychosocial Interventions for Children, the American Academy of Child and Adolescent Psychiatry Practice Parameters, and other major published scientific literature reviews; (c) personal communication with national scholars and (d) additional ad hoc nominations from members of the coding team and other professionals.

CHARACTERISTICS DEFINING WHETHER YOUTH ARE COVERED BY THE EVIDENCE BASE: PAGES

Problem. The nature of the problem in the evidence-based literature was coded using a checklist of 25 different problem areas, that allowed coders to write in up to three “other” entries that did not fit the

checklist. A problem was defined as that which the study explicitly selected and observed (e.g., selecting youth with depression and showing that youth in the study were depressed). Although we coded research studies for primary problem selected and for any problem observed (comorbidity), we explicitly matched youth in our analysis based on primary problem only. For consistency with the earlier review, these 25 primary problem categories were subsequently reduced to the following 8 categories, which correspond to the main problem areas reviewed earlier in this report: Anxiety and Avoidance, Attention and Hyperactivity, Autism Spectrum, Depression and Withdrawal, Disruptive Behavior, Eating Problems, Substance Use, and Traumatic Stress. Studies or youth with primary problems falling outside of these areas were coded as “Other,” and instances in which both a youth and a study were coded with problem “Other” were not counted as a match.

Age. Age of participants in the evidence-based literature was coded as the maximum and minimum age reported in each study group or study. When only means and standard deviations were reported, the range was estimated at the mean plus or minus 1.5 standard deviations. When only the mean or no information was provided, age was either imputed from grade level, or the mean age was used as both the minimum and maximum age. If those data were also missing, age was then coded as missing, which meant that treatments from those studies could not cover any children in the service sample under scenarios in which age was required for a match. Matches on age were defined as the age of a CAMHD youth falling within the minimum and maximum ages for a given study.

Gender. Gender of participants in the literature was coded as whether the study reported any presence of boys or girls. Thus, if a study included at least one boy, it was coded as including boys, and if it included at least one girl, it was coded as including girls. When no information was provided, gender was coded as missing, which meant that treatments from those studies could not match any children in the service sample under scenarios in which gender was required for a match. A match on gender was defined as the gender of a CAMHD youth matching of at least one of the participants reported in the study.

Ethnicity. Participant ethnicity in the literature was similarly coded using the “at least one” strategy, given that a large number of studies reported ethnic group membership without providing specific numbers or percentages for each group. Ethnicity in studies was coded using the U.S. Census definitions for major groups. When no information was provided for a study, ethnicity was coded as missing, which meant that treatments from those studies could not match any children in the service sample under scenarios in which ethnicity was required for a match. Matches between CAMHD youth and the study sample were collapsed to a final set of seven ethnic categories: Multiethnic, Caucasian, Native Hawaiian or Pacific Islander, Asian American, African American, Hispanic/Latino, and Native American/Alaskan.

Setting. Setting of participants in the literature was coded using a checklist of 10 common settings as reported in the treatment literature, plus the ability to write in any additional settings using an “other” field. These settings were matched to eight settings common to the CAMHD levels of care:

TABLE 2.1 PERCENTAGES AND CHARACTERISTICS OF YOUTH NOT COVERED BY EVIDENCE-BASED TREATMENTS AS A FUNCTION OF DIFFERENT DEFINITIONS OF COVERAGE

Category	N	Matches Required for Coverage				
		P	PAG	PAGE	PAGS	PAGES
Percentage of Total		1,781				
Covered		79%	71%	41%	26%	14%
Not Covered		21%	29%	59%	74%	86%
Problem						
Disruptive Behavior	612			29%	37%	64%
Depression/Withdrawal	268			27%	96%	97%
Attention/Hyperactivity	264		48%	94%	83%	98%
Traumatic Stress	125		2%	63%	99%	99%
Substance Use	68			82%	100%	100%
Anxiety/Avoidance	54			41%	57%	87%
Autism Spectrum	19			100%	100%	100%
Eating	1			100%	100%	100%
Other/Missing	370	100%	100%	100%	100%	100%
Age						
1 to 3	5	60%	60%	100%	100%	100%
4 to 6	79	32%	33%	75%	99%	100%
7 to 9	124	27%	27%	82%	69%	95%
10 to 12	239	20%	23%	78%	74%	97%
13 to 15	684	21%	31%	52%	71%	80%
16 to 19	649	18%	28%	52%	75%	86%
Missing	1	100%	100%	100%	100%	100%
Gender						
Boys	1,151	20%	29%	60%	74%	86%
Girls	630	23%	28%	56%	74%	87%

Category	N	Matches Required for Coverage				
		P	PAG	PAGE	PAGS	PAGES
Ethnicity						
Multiethnic	993	17%	25%	51%	72%	83%
Caucasian	219	24%	36%	37%	79%	82%
Native Hawaiian or Pacific Islander	172	19%	24%	97%	68%	100%
Asian American	129	22%	32%	43%	78%	81%
African American	31	13%	23%	32%	68%	71%
Hispanic/Latino	22	27%	32%	41%	73%	73%
Native American/Alaskan	10	40%	50%	90%	100%	100%
Missing	205	34%	41%	100%	80%	100%
Setting						
Crisis Setting	52	35%	40%	58%	100%	100%
Hospital	50	32%	38%	70%	82%	94%
Community-Based Residential	223	17%	23%	52%	87%	100%
Group Home	69	22%	30%	51%	100%	100%
Foster Home	181	25%	31%	65%	97%	99%
Home/Community Based	1,379	19%	28%	57%	59%	77%
Outpatient	37	14%	24%	46%	27%	49%
Other	96	22%	26%	61%	100%	100%

Community-Based, Home-Based, Community Based Residential, Foster Home, Assessment Only, Group Home, Hospital, and Crisis Setting (including Crisis Stabilization or Crisis Shelter). When no information about setting was provided in a study, setting was coded as missing, which meant that treatments from those studies could not match any CAMHD youth in which setting was required for defining a match.

RESULTS

Youth Coverage Report

Table 2.1 shows the percentage of the service sample covered and not covered by evidence-based practices represented in the study sample. The first column, labeled “N” refers to all youth in the CAMHD sample,

covered or not. This is just the basic count of how many youth fell into each category from among the 1,781 total youth evaluated. The next five columns refer to different assumptions about features required to define a match between a youth and a study. Below the percentages of youth not covered, in each of the five columns, are the percentages within category of youth not covered by any evidence-based practices in the literature. For example, the first row of the “Problem” section of rows (“Disruptive Behavior”), indicates that there were 612 of 1,781 CAMHD youth with primary disruptive behavior diagnoses, and all of them were covered under the first two scenarios (columns “P” and “PAG”), 29% were not covered in the third scenario (column “PAGE”), 37% not covered in the fourth scenario, etc.

Thus, in the problem only scenario (column “P”), one can see that aside from the 370 youth who fell into the “missing/other” problem category (335 with “other” problems and another 35 youth who were missing diagnostic data altogether), all of the CAMHD youth are covered by the evidence-based treatment literature. The total coverage in this scenario is four out of five (79%, or 21% not covered). Again, those 21% not covered were only the youth with missing assessment data or with problems falling outside the main area of the evidence-based literature review. The 335 youth whose problems were not covered represented 30 different DSM diagnostic categories or v-codes, the majority of which were accounted for by adjustment disorders (36%), bipolar disorders (21%), reactive attachment disorder (9%), and psychotic disorders (8%).

The next scenario examined whether requiring CAMHD youth to match on age and

gender as well as problem (column “PAG”), showed a slight increase in the percentage of youth not covered, from 21% to 29%. In other words, even under these more conservative matching requirements, nearly three-fourths of CAMHD registered youth were covered by at least one evidence-based practice. Those youth affected most by this matching restriction were nearly half (48%) of the youth with attention and hyperactivity as a primary problem, and just less than half (42%) of those with autism spectrum problems. Only 2% of those with traumatic stress as a primary problem were no longer covered. In all three cases, the lack of coverage was due to the CAMHD youth being above the maximum age represented in studies of evidence-based treatments for attention/hyperactivity (age 13), autism spectrum (age 12), and for traumatic stress (age 18). The low age range cutoff in the attention and hyperactivity literature has important implications for serving what is the third most common primary problem type among CAMHD youth, given that many CAMHD youth are over the age of 13. Even when traditional evidence-based psychosocial approaches for attention and hyperactivity are used, half of those on average may involve an untested extension of the evidence base. Thus, such youth may require additional monitoring and attention to ensure the effectiveness of their psychosocial treatment plans.

Regarding the small number of youth falling above the age range for the evidence-based treatments for traumatic stress, these 19 year old youth are likely covered by the substantial evidence-base for traumatic stress treatments for adults, and the lack of coverage in this report is merely an artifact of

Youth Coverage Report: Summary of Key Points

- Seventy-one percent (71%) of CAMHD youth are covered by at least one evidence-based treatment that applies to their primary problem, age group, and gender.
- About half of CAMHD youth with attention/hyperactivity problems are above the tested age range for evidence-based treatments for their primary problem.
- Just fewer than half of CAMHD youth with autism spectrum problems are above the tested age range for evidence-based treatments for their primary problem.
- Native Hawaiian and Pacific Island youth are less-well represented under strict definitions of the relevance of the evidence base, which may require generalizing from findings on treatments tested successfully with youth of other ethnic backgrounds until better research with this population develops.
- Aside from treatments developed for disruptive behavior, many evidence-based treatments are less often tested in settings typical of the CAMHD service model. For many youth, the adaptation of best practices from other settings may be needed, while at the same time CAMHD should prioritize placing youth at levels of care for which the evidence base is comparatively stronger (e.g., home and community based).

the scope of our literature review being restricted to children and adolescents.

Under both the Problem and the Problem-Age-Gender scenarios, gender played a minimal role in terms of whether evidence based-practices “covered” CAMHD youth. Note that the percentage of youth not covered ranged between 20% and 24% for both boys and girls, roughly equal to the average for the entire service population and also roughly equal to each other (compare gender coverage rows to the not covered row at the top of Table 2.1). This lack of effect of gender on matching is mainly because the treatment literature has good representation of both girls and boys across almost all treatments and problem types, and because we used a liberal rule to define inclusion of a particular group for this analysis (at least one member as opposed to 30% of the group in a study).

In the next scenario, (Column “PAGE”), we then examined the effects of requiring matches on all previous characteristics as well as on ethnicity. Overall, the percentage of youth to whom evidence-based treatments would apply under these assumptions was only about two out of five (41%). The largest increase in cases not covered was for Native Hawaiian/Pacific Island youth, which was 24% not covered under the Problem-Age-Gender scenario but 97% not covered (only 3% covered) under the Problem-Age-Gender-Ethnicity scenario. Thus, the impact of requiring a match between CAMHD youth and the evidence-based treatment literature has its largest impact on this group. Other groups affected were Multiethnic youth, who went from 25% not covered on average to 51% not covered—although this group was nevertheless covered better than the average of all other youth in the CAMHD population—

and Native American/Alaskan, of whom 9 out of 10 youth were not covered when ethnicity was required for a match. As expected, those ethnic groups that are better represented in the treatment outcome literature were minimally impacted in this scenario: youth who identified as Caucasian, African-American, or Hispanic/Latino. With respect to effects within specific problem groups, these restrictions showed greater impact with youth with attention/hyperactivity, substance use, and autism spectrum disorders. The one youth in the population with primary eating disorder was also no longer covered when matching required ethnicity to be considered.

We then tested a scenario in which Problem, Age, Gender, and Setting (but NOT ethnicity) were required for defining a match. This was a way to gauge the impact of adding setting requirements on the Problem-Age-Gender scenario, which provided relatively good coverage. As can be seen in the “PAGS” column, the requirement that studies be conducted in the same setting to provide a match to CAMHD youth had a dramatic impact, with the percentage of youth not covered rising from 29% to 74% (comparing the “PAG” column to the “PAGS” column). In other words, under strict assumptions that a treatment be tested successfully in the same environment in which a CAMHD youth would receive it, only about one in four (26%) of youth have any evidence-based practice that would apply. These effects were pronounced at nearly all levels of care within the CAMHD system, with the least impact being for outpatient services (not a formal part of the traditional CAMHD service array) and home or community based services. These findings suggest two important points: (1) that for a majority of the CAMHD served youth that

some extension and adaptation of the treatments in the literature is needed—specifically to use treatments from mainly school-based and clinic settings in home and community based and residential settings, and (2) that there should be continued efforts to place youth in levels of care for which there is a stronger supportive evidence base (e.g., home-based services versus group home). Notably, the youth with disruptive behavior problems are those least affected by this set of assumptions (about 3 of five youth or 63% still covered), given the relatively well-developed literature on treatments delivered in home, community, and foster care settings for these problems. The fact that coverage of youth in foster home settings was almost zero (only 3%), even though there is an evidence-based treatment designed for this setting (i.e., Multidimensional Treatment Foster Care; MTFC), suggest that the majority of the youth in foster home settings do not meet the other matching requirements to qualify for those approaches (e.g., they have primary problems other than disruptive behavior or are outside the age range for MTFC).

The final analysis in the youth coverage report examined the strictest set of matching assumptions, requiring a youth to share characteristics of study participants on all 5 selected dimensions (“PAGES”). As can be seen from the table, almost 9 out of 10 (86%) youth have no relevant evidence-based practice under these assumptions. This reinforces the points made earlier regarding the need for increased monitoring of cases being served beyond the documented scope of the evidence base, and the need to try to serve youth at levels of care that better match the supportive evidence.

Practice Coverage Report

Given that the previous report demonstrated reasonable coverage under the Problem-Age-Gender scenario, the following analyses focus on this set of assumptions for matching as the “best case” working scenario for CAMHD. The **practice coverage report** shows the percentage of CAMHD youth who are covered by different treatment families (Table 2.2) and practice elements (Table 2.3). Regarding treatment families, the results show that it is possible to serve the full 71% of “coverable” youth using only 6 treatment families. These families are essentially variants of only four approaches: **CBT**, **Parent Management Training**, **Contingency Management**, and either **Intensive Behavioral Treatment** or **Intensive Communication Training** for autism, and for the vast majority of CAMHD youth, only 5 of those are relevant (autism treatments serving less than 1% of the CAMHD population). The first column of percentages shows that CBT alone is an evidence-based practice applicable to 61% of the CAMHD youth (of a possible 71% to whom anything in the evidence base applies). This means that practice development efforts that emphasize **CBT** will serve roughly 86% of coverable youth. **Contingency Management** is relevant to the next largest percentage of the CAMHD youth, followed by **Parent Management Training** variants and **CBT** that includes parent participation. **Intensive Communication Training** and **Intensive Behavioral Treatment** are approaches that apply to only 11 of the 1,781 youth in the sample, but are nevertheless included in the report, due to the requirements of covering

all youth for whom any evidence based practice exists.

The rightmost column in the table refers to the percentage of covered youth who would no longer be coverable were a particular approach to be dropped from the CAMHD service array. Thus, although **CBT** applies to 61% of CAMHD youth, were it not available, only 8% fewer youth would be served by an evidence-based practice. That is because 53% of youth could be served by one of the other treatment families in the set (e.g., **Parent Management Training**, **Contingency Management**). In other words, only 8% of youth are uniquely covered by **CBT** and **CBT** alone. Thus, as one can see from the table, the variants of **Parent Management Training** and other forms of CBT are largely not unique in their ability to cover CAMHD youth, and almost all (but not all) coverable youth could be served with a considerably smaller set of treatments (e.g., **CBT** and **Parent Management Training** only). **Intensive Communication Training** and **Intensive Behavioral Treatment** serve almost entirely the same set of youth: 11 of the 19 CAMHD youth with primary autism spectrum problems under the age of 13, with **Intensive Communication Training** covering 9 youth, and **Intensive Behavioral Treatment** covering 7 (but only two of them uniquely).

It should be noted that the “% of Youth Lost” statistics are applicable to dropping one treatment family only, and are not additive. In other words, the effects of dropping one or more treatment family involve complex interdependencies and therefore cannot be represented in the table. Analyses are possible that examine the effects of dropping various combinations that aimed at covering a “large” but not “maximum” number of coverable youth, but the aim of this report

TABLE 2.2 TREATMENT FAMILIES RELEVANT TO CAMHD YOUTH

Treatment Family	Applies to This % of CAMHD Youth	% of Youth Lost if Practice or Treatment Dropped
Cognitive Behavior Therapy	61%	8%
Parent Management Training and Problem Solving	14%	3%
Contingency Management	32%	1%
Parent Management Training	22%	< 1%
Cognitive Behavior Therapy with Parents Included	22%	< 1%
Intensive Communication Training	< 1%	< 1%
Intensive Behavioral Treatment	< 1%	< 1%

was to offer practice development recommendations that targeted all youth who could be covered by the evidence-base, regardless of how well-represented they are in the CAMHD population as a whole. Models for determining the shape of the curve relating between increased service capacity (essentially, “cost”) and number of youth covered (essentially, “benefit”) could be examined in future reports designed for that specific purpose.

The practice elements analysis in Table 2.3 represents the same logic as the treatment families analysis. This table shows the minimum number of practice elements (from over 55 possible elements) that cover the maximum amount of coverable youth in

the “Problem Age Gender” scenario (71% of CAMHD youth).

There were 31 practice elements in the minimum set for CAMHD youth, with only 14 of those relevant to more than 60% of youth. Two of these: Modeling and Parent Psychoeducation, were relevant to 70% of the 71% of coverable youth—in other words, nearly every coverable youth in the CAMHD service sample had at least one matching evidence-based treatment that used either one or both of those two practices.

Regarding efficiency, 31 practices is the equivalent number of procedures contained in two to four average evidence-based treatment approaches. Thus, this analysis paints a similar picture to the treatment

TABLE 2.3 PRACTICE ELEMENTS RELEVANT TO CAMHD YOUTH

Practice Element	Applies to This % of CAMHD Youth	% of Youth Lost if Practice or Treatment Dropped
<i>Cognitive</i>	63%	20%
<i>Exposure</i>	34%	8%
<i>Psychoeducation-Child</i>	63%	7%
<i>Modeling</i>	70%	6%
<i>Assertiveness Training</i>	59%	4%
<i>Maintenance/Relapse Prevention</i>	63%	4%
<i>Stimulus Control or Antecedent Management</i>	66%	4%
<i>Self-Monitoring</i>	62%	4%
<i>Psychoeducation-Parent</i>	70%	2%
<i>Problem Solving</i>	65%	1%
<i>Tangible Rewards</i>	68%	1%
<i>Relationship/Rapport Building</i>	63%	< 1%
<i>Time Out</i>	28%	< 1%
<i>Praise</i>	51%	< 1%
<i>Relaxation</i>	68%	< 1%
<i>Commands</i>	32%	< 1%
<i>Communication Skills</i>	62%	< 1%
<i>Differential Reinforcement</i>	37%	< 1%
<i>Monitoring</i>	50%	< 1%
<i>Social Skills Training</i>	63%	< 1%
<i>Peer Pairing</i>	47%	< 1%
<i>Response Cost</i>	41%	< 1%
<i>Activity Scheduling</i>	51%	< 1%
<i>Therapist Praise/Rewards</i>	58%	< 1%
<i>Talent or Skill Building</i>	55%	< 1%
<i>Goal Setting</i>	62%	< 1%
<i>Crisis Management</i>	47%	< 1%
<i>Educational Support</i>	38%	< 1%
<i>Family Therapy</i>	54%	< 1%
<i>Insight Building</i>	53%	< 1%
<i>Self-Reward/Self-Praise</i>	58%	< 1%

Practice Coverage Report: Summary of Key Points

- Seventy-one percent (71%) can be covered by one of only 7 different treatment families.
- Cognitive Behavior Therapy alone applies to 61% of all CAMHD youth—almost all of the youth coverable by any evidence-based practice.
- Parent Management Training variants and Contingency Management are other treatment families that apply to a large portion of the CAMHD sample.
- Thirty-one practice elements are needed to cover the maximum number of coverable CAMHD youth.
- Of those 31, about 14 apply to a large proportion of coverable youth (more than 60% of the total CAMHD sample, of which 71% are possibly coverable).
- Cognitive seems to be the single most important practice element, present in treatments that uniquely apply to one in five CAMHD youth.

families analysis in that about four full treatments apply to this population. The practice element analysis add the new level of detail, showing which specific practices are most applicable and whether they are uniquely so.

Along those lines, Cognitive was the procedure that applied uniquely to the largest number of CAMHD youth. In other words, if this one procedure were not available, the number of coverable youth in CAMHD would drop from 71% to 51%. Exposure, Child Psychoeducation, and Modeling also each were part of treatments that uniquely covered more than 5% of the CAMHD youth. Interestingly, although only about 3% of the CAMHD population had primary anxiety, exposure was applicable to 34% of youth, and 8% were uniquely covered by treatments that included exposure. This was largely due to two studies of stress inoculation that used

exposure in the context of treating disruptive behavior.

Most of the other practices in the list were in fact minimally unique in their relevance to the CAMHD population. In other words, more than half of the practices were distilled from evidence-based treatments that each uniquely applied to fewer than 18 youth (about 1% of the sample). This suggests (as did the previous analysis) that an analyses designed to examine approximations of the maximum (e.g., covering “nearly all” but not all of the coverable youth) would likely produce a *much* smaller set of practices. Again, given that the scope of this report was to identify a service plan relevant to *all* coverable youth, those analyses are not represented here and could be the subject of future reports. Given the reasonably small number of practices contained in this initial report, it seems feasible to emphasize the application of these clinical procedures

across CAMHD services, and the selection of grouping of procedures could be informed by practice element profiles in the earlier sections of this report. Highest priorities for mastery should be given to those practices that are both highly relevant and uniquely so, such as Cognitive and Child Psychoeducation.

REVIEW SUMMARY

This report summarizes the results of 1,088 study groups from 435 studies with an estimated 40,700 youth participants, covering the areas of anxiety, attention problems, autistic spectrum disorders, depression and withdrawal, delinquency and disruptive behavior, substance use, and traumatic stress. Although there remain noted gaps in the review, this report is the largest such review of youth mental health treatments to date. It is recommended that the information herein be incorporated into efforts to further enhance clinical practice in the Hawaii child service system. Future reporting efforts should examine additional findings related to effective medications for youth, review more studies in those areas most lacking (e.g., adjustment disorders, bipolar disorder, childhood psychosis), and address more detailed follow-up questions regarding the specific practices relevant to CAMHD youth under a greater variety of program-driven assumptions.

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