

POPPING THE HOOD: DISRUPTIVE BEHAVIOR DISORDERS, COMORBIDITY,  
AND THERAPEUTIC PRACTICES IN COMMUNITY MENTAL HEALTH

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Trina E. Orimoto

Thesis Committee:

Charles Mueller, Chairperson

Kentaro Hayashi

Brad Nakamura

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## ABSTRACT

Comorbidity in usual care practice is often viewed as a barrier to the use of evidence-based treatments. Yet studies of outcome research indicate that comorbid (i.e., the presence of two diagnoses) and multimorbid (i.e., the presence of three or more diagnoses) youth often have comparable outcomes to youth with one diagnosis. In order to examine this issue further, the current study evaluated whether community therapists adjusted their treatment, specifically providing more and a more diverse set of therapeutic practice elements, as a function of (a) type of comorbidity or (b) number of diagnoses. Clinical data from 444 youth with either a pure disruptive behavior disorder (DBD; n=165), a DBD and an attentional disorder (n=164), or a DBD and an internalizing disorder (n=115) receiving intensive in-home (IIH) services from the State of Hawai'i, Child and Adolescent Mental Health Division (CAMHD) were examined. Eight measures of practice element (PE) diversity and dosage were compared across diagnostic groups. An additional sample of 569 youth with a pure DBD (n=165), a DBD and only one additional disorder (n=279), or a DBD and two or more additional disorders (n=125) were compared on the same measures. Overall, diversity and dosage of practices did not vary as a function of type of comorbidity but did differ as a function of number of diagnoses. Youth with a DBD and two or more diagnoses (multimorbid) received treatment characterized by more diverse and greater use of therapist practices than the other two groups. Results suggest that multimorbidity, rather than comorbidity, may influence the types and frequencies of practices applied. Limitations and clinical and research implications are discussed.

## TABLE OF CONTENTS

ACKNOWLEDGMENTS .....	ii
ABSTRACT.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES .....	v
LIST OF FIGURES .....	vi
LIST OF ABBREVIATIONS.....	vii
CHAPTER 1. INTRODUCTION .....	1
Disruptive Behavior Disorders and Comorbidity.....	2
Comorbidity and Treatment As Usual.....	5
Current Study.....	9
CHAPTER 2. METHODS .....	11
System of Care .....	11
Participants .....	11
Source of the Data .....	13
Human Subjects Considerations.....	14
Measurement .....	14
Data Analytic Strategy .....	16
CHAPTER 3. RESULTS .....	19
Diversity of PEs and Comorbidity .....	19
Dosage of PEs and Comorbidity .....	20
Additional Analyses Regarding Multimorbid Youth .....	21
CHAPTER 4. DISCUSSION.....	24
Limitations.....	28
Conclusions .....	32
REFERENCES .....	35
FOOTNOTES .....	45
APPENDICES .....	46
TABLES .....	75
FIGURES.....	81

## LIST OF TABLES

TABLE 1. Youth Participant Demographics as a Function of Comorbidity Type (N=444).....	75
TABLE 2. Youth Participant Demographics as a Function of Number of Diagnoses (N=569) .....	76
TABLE 3. Intercorrelations of Client Characteristics, Diversity and Dosage Scores (N=444).....	77
TABLE 4. Means and Standard Deviations for All Practice Element Diversity and Dosage Scores as a Function of Type of Comorbidity (N=444) .....	78
TABLE 5. Intercorrelations of Client Characteristics, Diversity and Dosage Scores (N=569).....	79
TABLE 6. Means and Standard Deviations for All Practice Element Diversity And Dosage Scores as a Function of Number of Diagnoses (N=569) .....	80

## **LIST OF FIGURES**

- FIGURE 1. Proportion of Youth Who Received Practice Elements One or More Times During Treatment, Grouped by Comorbidity Status (N=444) ..... 81-83
- FIGURE 2. Proportion of Youth Who Received Practice Elements One or More Times During Treatment, Grouped by Number of Diagnoses (N=569) . 84-86

## LIST OF ABBREVIATIONS

AD/HD	.....Attention-Deficit/Hyperactivity Disorder
CAFAS	.....Child and Adolescent Functional Assessment Scale
CAMHD	.....Child and Adolescent Mental Health Division of Hawai‘i Department of Health
CAMHMIS	.Child and Adolescent Mental Health Management Information System of CAMHD
CASSP	.....Child and Adolescent Service System Program
DBD	.....Disruptive Behavior Disorder
DBD NOS	...Disruptive Behavior Disorder, Not Otherwise Specified
DOE	.....Department of Education
DOH	.....Department of Health
DSM-IV-TR	American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 4 <sup>th</sup> Edition, Text Revised
FERPA	.....Family Educational Rights and Privacy Act
GLM	.....General Linear Model
HIPAA	.....Health Insurance Portability and Accountability Act
IIH	.....Intensive In-Home Services Therapy
MST	.....Multisystemic Therapy or Multisystemic Treatment
MTPS	.....Monthly Treatment Progress Summary
ODD	.....Oppositional Defiant Disorder
RET	.....Research and Evaluation Team jointly operated by CAMHD and the University of Hawai‘i at Mānoa Department of Psychology
SPSS	.....Statistical Package for the Social Sciences software program

## CHAPTER 1. INTRODUCTION

Disruptive behavior disorders (DBD), including oppositional defiant disorder (ODD), conduct disorder (CD), and disruptive behavior disorders not otherwise specified (DBD NOS) continue to be among the most prevalent juvenile disorders served in mental health and community clinics (Frick, 1998; Kazdin, 1995). Indeed these diagnoses are of great concern, as they account for approximately 30% of the youth community client population, are related to a high degree of impairment (Lahey, Miller, Gordon, & Riley, 1999), and are costly to society (e.g., incarceration, mental health services; Scott, Knapp, Henderson, & Maughan, 2001).

At the same time, years of research have identified multiple treatment methods, which have been shown to improve oppositional, defiant, and rule-breaking behavioral problems (Evidence Based Services Committee, 2009). A recent analysis of the 175 randomized-control trials for interventions for DBDs in youth found “best support” for the following treatment families: parent management training, Multisystemic Therapy (MST), social skills, cognitive behavior therapy, and parent management training plus problem solving. Parent training interventions include modules intended to improve interactions between parents and their children. Typically, these treatments include caregiver skill development in the proper use of commands, contingent reinforcement, differential attention, and time-out (e.g., McMahon & Forehand, 2003). MST, on the other hand, is a program based on a social-ecological model, which intervenes with youth by coordinating the multiple layers of their social environment including family, neighborhood, peers, and school (e.g., Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998). Cognitive behavior therapy for youth with oppositional problems



aims to increase positive social-cognitive processes and concentrates on improving anger control and social and problem solving skills (e.g., Greene et al, 2004; Kazdin, Siegel & Bass, 1992; Webster-Stratton, Reid, & Hammond, 2001). Frequently, components of these various treatments are combined into programs that simultaneously target parenting and youth skill building (e.g., parent management plus problem solving; Webster-Stratton & Hammond, 1997).

Consistent with these results, effective programs often were comprised of common specific therapeutic practices (or practice elements; PE) including but not limited to, praise, time out, and tangible rewards for youth under the age of 13 years, and problem solving, cognitive, and goal setting techniques for youth ages 13 years and older (Evidence Based Services Committee, 2009). Notably, evidence-based interventions for other disorders do not mirror comparable treatments for DBDs. For example, practices occurring most frequently in studies of effective treatments for youth anxiety include exposure, cognitive change (i.e., practices designed to alter the interpretation of events through an examination of individuals' reported thoughts), and psychoeducation for the child while recommended practices for youth with depression include cognitive change, psychoeducation for the child, and activity scheduling. As expected, suggested practices for attentional disorders overlap more with those for DBDs and include praise, problem solving, and psychoeducation for the parent (Evidence Based Services Committee, 2009).

### **Disruptive Behavior Disorders and Comorbidity**

Youth with DBDs often meet criteria for one or more additional disorders, and studies of community and clinic populations provide substantial evidence for the presence of comorbidity rates greater than chance. Though “comorbidity” is the term that

is most consistently applied, “multimorbidity” (or the occurrence of more than two diagnoses) also occurs (Krueger & Bezdjian, 2009). Given the long-standing finding of two global dimensions of child and adolescent mental health symptoms (externalizing and internalizing; Achenbach, 1966), comorbidity is often examined in the context of the four disorder families of youth mental health (disruptive behavior, anxiety, attentional and depression). It should be noted that although comorbidity is not restricted to these four diagnostic groups, these diagnoses characterize the most common problems treated in community youth mental health settings (e.g., Jackson, Mueller, Daleiden, & Ku, 2010).

According to a meta-analysis of general population studies, in youth with DBDs, 3.1–41.0% also had AD/HD, 2.2–45.9% had depression, and 4.8–55.3% had one or more comorbid anxiety disorders (Angold, Costello, & Erkanli, 1999). In addition, results from the National Comorbidity Survey suggest that among individuals with lifetime ODD, 92.4% met criteria for at least one other lifetime DSM-IV disorder such as mood (45.8%), anxiety (62.3%), and AD/HD (35.0%; Nock, Kazdin, & Hiripi, 2007). In a clinic-referred sample, Greene and colleagues (2002) reported that over 80% of those diagnosed with a conduct disorder also had AD/HD, approximately 50% met criteria for depression and about 40% met criteria for an anxiety disorder.

Long term outcomes of youth with a DBD and a comorbid disorder are often worse than for youth with only a DBD diagnosis. For example, in comparison to youth with AD/HD or CD alone, youth with AD/HD and CD are more likely to have greater peer problems, appear in the juvenile justice system, and meet criteria in adulthood for Antisocial Personality Disorder (Waschbusch, 2002).

## **Comorbidity and Treatment**

Currently, studies examining the relationship between comorbidity (i.e., broadly defined as the presence of more than one disorder) and treatment response for youth with DBD have produced mixed results. Though the hypothesis that comorbidity undermines treatment outcomes has been suggested in multiple reviews (e.g. Jensen, Martin, & Cantwell, 1997; Kazdin & Crowley, 1997; MTA Cooperative Group, 1999), little empirical evidence has supported this claim. Indeed, several recent community and clinical studies have found that comorbidity is unrelated to treatment outcomes across many childhood disorders (Jensen Doss & Weisz, 2006; Kazdin & Whitley 2006; Mueller, Tolman, Higa-McMillan, & Daleiden, 2010; Ollendick, Jarrett, Grills-Taquechel, Hovey, & Wolff, 2008), but may be linked to the post-treatment recurrence of symptoms (Crawley, Beidas, Benjamin, Martin, & Kendall, 2008; Rohde & Clarkin, 2001). These findings also seem to apply to DBDs and comorbidity. For example, Jensen Doss & Weisz (2006) examined syndrome co-occurrence (as determined by youths' scores on all syndrome scales of the Child Behavior Checklist; Achenbach, 1966) within a community clinic population and found that though higher initial severity was indicative of greater treatment gains, co-occurrence was not a significant predictor of treatment outcomes in most analyses (accounting for only 0.6% of outcome variance on average).

Thus, the relationship between comorbidity and treatment response remains a paradox. While youth with comorbidity are more functionally impaired, have more negative life courses, and show more post-treatment problems, they do not necessarily respond less well to treatment when measured at treatment end (Kazdin & Whitley, 2006;

Mueller et al, 2010). One possible explanation for these results is that the actual treatments comorbid DBD youth receive vary from those for non-comorbid DBD youth in characteristics such as diversity of practices, dosage, duration, focus, or sequence. In other words, therapists possibly treat comorbid youth differently (i.e., with different techniques) such that these youth might show similar gains to youth with DBD alone. This might be particularly true in treatment as usual settings and in public mental health where youth tend to receive treatment until they show improvement or age out of the system.

Clues about treatment for comorbid youth can be found in developing models of treatment for adult comorbid conditions, such as severe mental illness plus substance abuse disorders. Recommended treatment structures for dual-diagnosis patients in this population are transitioning from treating each disorder separately or targeting both disorders simultaneously, to more synchronized and integrated approaches (Drake, Mercer-McFadden, Mueser, McHugo, & Bond, 1998; Horsfall, Clearly, Hunt, Walter, & Hunt, 2009). Though efforts to advance interventions for comorbid youth can be found in the emergent modularized treatment movement, virtually no programs have been developed to focus directly on youth with DBDs and comorbid disorders.

### **Comorbidity and Treatment As Usual**

A logical preliminary step in understanding treatment of comorbid youth is to identify the treatment strategies that providers actually apply. Though we know much about practices utilized in well-controlled research trials, we know very little about the usual care practices of therapists (Bickman, 2000). While a natural speculation is that clinicians' primarily utilize recommended practices from the evidence-base, studies of

therapist attitudes indicate that they often view manualized treatments as too rigid and incompatible with their complex cases (e.g., Addis & Krasnow, 2000; Borntrager, Chorpita, Higa-McMillan, Weisz, & The Research Network on Youth Mental Health, 2009; Nelson, Steele, & Mize, 2006). This is a reasonable concern, as case complexity in the community setting is often magnified by the inherent challenges of working with youth and their home, school, and community systems (Garland, Bickman & Chorpita, 2010). Therapists also claim preferences for combining techniques from multiple theoretical orientations (e.g., Baumann, Kolko, Collins, & Herschell, 2006), and describe their therapeutic approach as “eclectic” (Kazdin, Siegel, & Bass, 1990; Norcross, Karpiak, & Lister, 2005). Garland and colleagues suggest that perhaps for these reasons, research has also demonstrated that manualized programs are not widely used by practitioners who serve youth and that the outcomes in usual care are not as robust as those found in research settings (Hoagwood & Olin, 2002; Perkins, Jensen et al, 2007; Weiss, Catron, Harris, & Phung, 1999; Weisz, Jensen-Doss, & Hawley, 2006; Weisz, Weiss, & Donenberg, 1992).

While previous studies have evaluated treatment practices at the theoretical orientation (e.g., cognitive-behavioral) or program level (e.g., Defiant Child), researchers are now examining treatment practices at the technique or common elements level (e.g., Parent Praise; Chorpita & Daleiden, 2009; Chorpita, Daleiden, & Weisz, 2005; Garland, Hawley, Brookman-Fraze, & Hurlburt, 2008; Garland, Hurlburt, & Hawley, 2006; McLeod & Weisz, 2010). This approach advances knowledge about common practices within evidence-based packages and provides an alternative for the delivery of practices derived from the evidence base (e.g. Modular Cognitive-Behavior Therapy; Chorpita,

2006; Chorpita et al., 2005; Garland et al., 2008). Preliminary evidence indicates that modular approaches are practical, acceptable to therapists and improve therapist attitudes towards evidence-based practice (Borntrager et al., 2009). Specific therapeutic technique or PE models allow for a more detailed and nuanced understanding of actual clinical practice (McLeod & Weisz, 2010; Weersing, Weisz, & Donenberg, 2002). As such, these models allow for the comparison of usual care to approaches suggested by the evidence base, as well as an examination of the relationship between the use of specific PEs and client outcomes (Mueller et al, 2010).

At the same time, therapy entails a private, multifaceted relationship that is difficult to measure in an effective and efficient manner. Attempts to assess therapeutic strategies fall into three broad categories: observational coding systems, client reports, and practitioner reports (Schoenwald et al, 2011). Although observational modalities provide objective information and are considered to be the gold standard of analyses (e.g., Therapy Process Observational Coding System – Strategies scale; TPOCS-S; McLeod & Weisz 2005; McLeod & Weisz, 2009), therapist reports are much less time-consuming, require fewer resources, and are practical in day-to-day clinical contexts.

Consistent with this approach, the Child and Adolescent Mental Health Division (CAMHD) in the Hawaii State Department of Health (DOH) has developed a measure of therapists' reports of treatment techniques (or PEs), based on a common elements approach to intervention assessment. The Monthly Treatment and Progress Summary (MTPS; CAMHD, 2005) is an instrument designed to assess treatment targets (e.g., aggression, shyness), service format (e.g., individual, group, family), service setting (e.g.,

home, school), intervention strategies (PEs; e.g., praise, time out), and clinical progress ratings.

Data from the MTPS and other available measures of usual care settings have identified several initial patterns in clinical practice. On a global level, observational studies of community therapists' practices with youth with DBDs indicate that therapists tend to apply a great breadth of practices at a relatively low intensity and often devote large amounts of time to case management. Interestingly, these studies also suggest that therapists use some evidence-based treatments frequently, while other core elements are rarely applied (Garland et al, 2010).

A different study of therapists from community clinics found that therapists differentially apply techniques based on client characteristics. In particular, they report using (a) more family techniques with externalizing clients, (b) more behavioral techniques with younger externalizing clients, (c) more cognitive techniques with older externalizing clients, and (d) more psychodynamic techniques with male clients (Walker, Weersing et al, 2008; Weersing et al, 2002). Furthermore, therapists treating youth with more severe impairment at service intake (based on the Child and Adolescent Functional Assessment Scale; CAFAS; Hodges, 1995) report utilizing more behavioral management and family intervention practices (Orimoto, Higa-McMillan, Mueller, & Daleiden, under review).

With regard to the application of scientifically-validated techniques for DBD, Brookman-Frazee, Haine, Baker-Ericzén, Zoffness, and Garland (2009) found that use of evidence-based practices for youth and families was associated with older child age, higher caregiver educational level, greater caregiver alcohol use, and having a therapist

with a self-reported cognitive-behavioral or behavioral primary theoretical orientation (compared to “eclectic/other”). Child, family, and therapist characteristics were not significantly associated with evidence-based practice application with caregivers. Overall there appear to be some connections between the selection of therapeutic techniques and client and clinician characteristics. Yet the extent to which specific client characteristics such as comorbidity, gender, age, and symptom severity influence practice application remains largely unknown.

Additional clues about treatment as usual interventions for youth with multiple disorders are found in the Hawaii system of care. Surprisingly, several brief examinations of usual care practices in CAMHD’s intensive in-home (IIH) level of care point to minimal differences between therapists’ practices for youth with a primary DBD diagnosis and reported practices for youth with a primary diagnosis from one of the other three major disorder families (i.e., mood, attentional, anxiety; e.g., Daleiden et al, 2004). Thus, there appears to be very little distinction in treatment approach as a result of primary diagnosis. However, it is likely that the subtle effects of comorbidity are obscured in these data, as many youth in the sample population have underlying additional diagnoses and/or disruptive behavior problems. Determining how practices for youth with a pure DBD differ from practices for comorbid youth will further our understanding of the extent to which comorbidity might contribute to therapists’ treatment choices.

### **Current Study**

This exploratory study aims to answer several questions regarding treatment for youth diagnosed with a single versus comorbid<sup>1</sup> (i.e., anxiety, mood, and attentional



disorders) DBD diagnosis. First, utilizing CAMHD therapists' reports of PEs (as indicated on the MTPS), do practices differ with regard to variety of PEs applied (diversity) and the frequencies at which these techniques are endorsed (dosage), as a function of comorbidity? The empirical literature points to PE differences in evidence-based packages across disorders and CAMHD is committed to evidence-based services, procedures, and tools, as reflected in its Child and Adolescent Service System Program (CASSP) principles (Nakamura et al, 2011). Thus, it is hypothesized that overall effects will be found for therapists' reported practices as a function of each of the comorbidities.

Though the primary goal of the present study is to determine whether PE application differs as a function of type of diagnostic comorbidity, it is possible that certain nuanced effects of comorbidity will be masked by decisions to limit the sample to youth with one or two diagnoses. Thus, this study will also briefly examine whether PEs differ in diversity and dosage as a function of number of diagnoses. Due to the exploratory nature of this question, we did not set any a priori hypotheses. However, it is logical to assume that greater comorbidity will be associated with higher rates of diversity and dosage, such that youth with three or more diagnoses might receive a greater variety and higher frequency of PEs than youth with two diagnoses or youth with a single DBD.

## CHAPTER 2. METHOD

### System of Care

Through the State of Hawai'i system of care, mental health services are provided to youth and families through the Department of Education's (DOE) school-based programs and an additional array of intensive services contracted by the Department of Health (DOH) CAMHD (CAMHD, 2006). The CAMHD is equipped to provide therapy at multiple levels of care, including outpatient IHH, community-based foster homes, group homes, residential treatment facilities and emergency services. The least restrictive service, IHH, is a non-manualized treatment delivered to youth and their families, designed to improve families' abilities to stabilize youths' functioning in their current environments (CAMHD, 2006). Currently, CAMHD has contracted eight private agencies across the state to provide IHH therapy. Individuals offering treatment within these agencies consist of licensed professionals, unlicensed professionals, and paraprofessionals with varying educational backgrounds and professional specialties (CAMHD, 2006).

Upon system entry, each youth is assigned to a care coordinator at one of the five regional family guidance centers. Care coordinators are charged with the management, planning, and monitoring of client services and work intimately with families to review treatment progress across several client domains (individual, family, community, school, and peer).

### Participants

Participants (N=444)<sup>2</sup> in the current study consisted of all youth diagnosed with either a pure DBD (i.e., CD, ODD, or DBD NOS), or a DBD with a single comorbid

internalizing (i.e., anxiety disorders including Generalized Anxiety, Obsessive-Compulsive, Separation Anxiety, Social Phobia, Specific Phobia, Post-Traumatic Stress Disorder, Acute Stress Disorder and/or Anxiety NOS; mood disorders including Cyclothymia, Dysthymia, Major Depressive, Bipolar, or Mood NOS), or attentional disorder (i.e., any Attention Deficit-Hyperactivity Disorder). Although comorbidity is not realistically constrained to these four disorder families, the current study only examined narrowly defined comorbidity (i.e., the presence of two disorders) in the context of the most common childhood disorders. This criteria has been used in several meta-analytic studies of comorbidity (Angold et al, 1999; Ollendick et al, 2008), including a recent study within the Hawai'i system (Mueller et al, 2011). In accordance with CAMHD standards, youth diagnoses were determined via annual assessments comprised of interviews based on Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> edition, text revised criteria (American Psychiatric Association, 2000).

Only clients that were newly admitted into the IIH level of care in the CAMHD system between July 1, 2003 and June 30, 2010 with minimum treatment episode length of 30 days ( $M=228.00$ ,  $SD=208.23$ ) were included in the analyses. Selected clients reflected the pattern of characteristics of youth receiving IIH services from CAMHD in any given year and appeared to represent an unbiased sample of this population (Jackson et al, 2010). The sample was ethnically diverse, approximately 60% male, with an average age of 13.09 years ( $SD=3.48$ ) From this larger group of 444, three smaller subgroups were formed on the basis of diagnostic type: DBD only ( $n=165$ ), DBD and a single internalizing disorder ( $n=115$ ), DBD and a single attentional disorder ( $n=164$ ). Descriptive statistics for each of the diagnostic groups are presented in Table 1.

Two hundred sixty six (266) different clinicians provided clinical data on the youth sample. Although limited therapist demographic information was available, it is likely that therapists' characteristics were consistent with those seen in the larger CAMHD system. Previous studies of IHH have determined that the majority of clinicians have obtained masters' degrees (approximately 89%) from pre-service training programs including social work, counseling, psychology, marriage and family therapy, medicine, and nursing (Orimoto et al, under review).

**Additional analyses regarding multimorbid youth.** An additional 125 youth with three or more diagnoses were added to the original sample so that practices related to mutimorbidity could be assessed. Participation in these analyses was again limited to youth with only diagnoses in the four main disorder families (i.e., disruptive behavior, attentional, mood, anxiety). A discussion of the inclusion criteria are abbreviated here, because additional standards were identical those stated earlier. This larger sample was divided into three smaller groups based on number of diagnoses: (a) pure DBD only (n=165), (b) DBD and one additional disorder (n=279), (c) DBD and two or more additional disorders (n=125). Table 2 provides demographic and descriptive information on these groups.

### **Source of the Data**

Clinical data for the current investigation were electronically extracted and de-identified from the Child and Adolescent Mental Health Management Information System (CAMHMIS) by the Research Evaluation and Training (RET) office (Chorpita & Mueller, 2008). CAMHIS maintains clinical and demographic records on all registered clients, in accordance with the standard operating practices of the family guidance centers

(CAMHD, 2006; Nakamura, Daleiden, & Mueller, 2007). For purposes of this study, records were evaluated across each youth's entire first IIH treatment episode.

It should be noted that CAMHD's procedures occasionally result in substantial missing data, though the source of the errors (i.e., data collection, entry, or analyses) is often unknown. Along these lines, a significant amount of ethnicity data was missing from the current data set and was thus excluded from all analyses.

### **Human Subjects Considerations**

This study was approved by the University of Hawai'i at Mānoa's Committee on Human Studies Institutional Review Board. Upon entry into the local system of care, youth clients and their legal guardian(s) received a complete description of CAMHD's notice of privacy and disclosure procedures. They then provided written informed consent for the use of data for research purposes (Appendix A). This study met the stated standards of the Health Insurance Portability and Accountability Act (HIPAA) and Family Educational Rights and Privacy Act (FERPA).

### **Measurement**

#### **Monthly Treatment and Progress Summary (MTPS; CAMHD, 2005).**

Diversity and dosage of practices were calculated based on therapists' reports on the Intervention Strategies portion of the MTPS. The MTPS is a clinician-report form designed to assess service format, setting, treatment targets, PEs, and client outcomes. Therapists are asked to indicate all specific PEs they have used with each client during the preceding month. The MTPS records 63 predefined techniques and allows for the write-in of up to three additional PEs per report period. Therapists submit an MTPS on a monthly basis for every client via a HIPAA compliant server. Chorpita and colleagues

(2005) reported good preliminary inter-rater reliability ( $k = .76$ ) for 26 of these 55-items in their demonstration paper. Preliminary analyses of the 55 PEs suggested good one- and three-month test-retest stability ( $k = .65$  and  $.50$ , respectively; Daleiden et al., 2004). Both the current MTPS form and detailed codebook defining the PEs are available on the CAMHD website (<http://hawaii.gov/health/mental-health/camhd/library/pdf/paf/paf-002.pdf>; <http://hawaii.gov/health/mental-health/camhd/library/pdf/paf/paf-001.pdf>; Appendix B).

**Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994).**

The CAFAS is a 200-item clinician measure that assesses youths' level of functional impairment. Case managers in CAMHD assign behavioral descriptions ordered by level of impairment within eight domains of functioning, based on their experiences with clients. School Role Performance, Home Role Performance, Community Role Performance, Behavior Toward Others, Mood/Emotions, Mood/Self-Harmful Behavior, Substance Use, and Thinking subscale scores are calculated by scoring the highest level of impairment (i.e., severe = 30, moderate = 20, mild = 10, no/minimal = 0) endorsed within the respective domain of items. Total scores are obtained by summing across the eight subscales. Interpretation guidelines for the total score suggest: 0-10 = "None to minimal impairment", 20-40 = "Likely can be treated on an outpatient basis", 50-90 = "May need additional services beyond outpatient care", 100-130 = "Likely needs care which is more intensive than outpatient and/or which includes multiple sources of supportive care", and 140+ = "Likely needs intensive treatment, the form of which would be shaped by the presence of risk factors and the resources available within the family and the community." The CAFAS has been found to have acceptable internal consistency

across items ( $\alpha = 0.73$  to  $0.78$ ), inter-rater reliability across sites ( $0.92$ ), and stability across time (Hodges, 1995; Hodges & Wong, 1996). Studies of concurrent validity have found that CAFAS scores are related to severity of psychiatric diagnosis, intensity of care provided, restrictiveness of living settings, juvenile justice involvement, social relationship difficulties, school-related problems, and risk factors and can be validly used to track treatment change (Hodges & Gust, 1995; Mueller et al, 2010; Nakamura et al., 2007).

### **Data Analytic Strategy**

**Power analyses.** The present study utilized a general linear model (GLM) approach to examine the differences in diversity and dosage of PEs endorsed as a function of type of comorbidity. Prior to analyses in Predictive Analytics SoftWare version 18 (PASW; SPSS, Inc., 2010), power was calculated using the G\*Power package (Faul, Erdfelder, Buchner, & Lang, 2009) for a sample of three groups (i.e., pure DBD, DBD and a single internalizing disorder, DBD and a single attentional disorder; pure DBD, DBD and an additional disorder, DBD and two or more additional disorders) with three potential covariates (i.e., age, gender, length of treatment episode). Cohen (1992) considered a  $d$  of  $.10$  to constitute a small effect,  $.30$  a medium effect, and  $.50$  a large effect. As this was an exploratory study, we anticipated a medium effect size because it was a conservative, neutral option. G\*Power indicated that an appropriate sample size was 195 youth (or 65 clients in each of the three groups).

**Descriptive analyses.** Standard descriptive statistics (e.g., range, mean, standard deviation, kurtosis, skewness) were conducted for each of the 63 PEs on two levels. At the group level, we identified the proportion of cases that received each of the PEs at any

time throughout their completed IHH treatment episodes. Next, PE dosage was evaluated at the client level, by summing the number of MTPS months that a PE was endorsed and dividing that value by the total number of MTPSs.

**Diversity of PEs and comorbidity.** While conducting descriptive analyses, several difficulties emerged: (a) individual PE dosage scores presented non-normal distributions and (b) some PEs were endorsed infrequently across all groups. In order to address these challenges with skewed data, we created an overall composite variable (diversity total) and three variables based on the three-factor structure of the MTPS PEs [behavior management (factor 1), cognitive/self-coping (factor 2), family intervention (factor 3); Orimoto et al, under review]. These variables were calculated by summing the number of unique PEs within each factor or overall that had been utilized at least once over the course of the completed treatment episode. Values were then divided by the total number of PEs on those factors (15 for factor 1 or behavioral management, 19 for factor 2 or cognitive/self-coping and 13 for factor 3 or family interventions respectively) or overall (63 for diversity total) to create proportion scores. Thus, diversity total and diversity scores for factors 1, 2, and 3 ranged from 0 to 1. For example, if a youth client received three of the fifteen PEs on factor 1, he would receive a score of .20 for the diversity factor 1 variable.

Due to findings that practices varied as a function of client characteristics (Kazdin & Whitley, 2006; Walker et al, 2008; Weersing et al, 2002), several additional variables were included as covariates in analyses. Relevant covariates were identified via significant Pearson and point-biserial correlations between client characteristics (i.e., age, gender, length of treatment episode, CAFAS total score at system entry) and the diversity



variables. A GLM approach with categorical (diagnostic group; DBD pure, DBD and an attentional disorder, DBD and an internalizing disorder) and continuous predictors (age, gender, and episode length, when relevant) was utilized to determine between group differences on the four diversity scores as a function of comorbidity status. Following analyses, PE profiles were compared visually and examined for patterns.

**Dosage of PEs and comorbidity.** The foregoing procedures were repeated on four measures of dosage to determine whether PE dosage differed as a function of comorbidity status. Dosage scores for factors 1,2, and 3 were calculated by summing the total number of times that PEs within a factor were endorsed, and dividing the values by the total number of MTPSs (a proxy for total number of treatment months). For example, if a youth received 3 of the 15 PEs on factor 1 every month for his entire length of treatment (20 MTPSs) the youth would receive a dosage score of  $(3 \times 20) / 20$  or 3 for factor 1. A total dosage variable was also created, which reflected the sum of all MTPS PEs applied, divided by number of MTPSs. Thus, dosage scores could range from 0 to 15 for dosage factor 1, 0 to 19 for dosage factor 2, 0 to 13 for dosage factor 3, and 0 to 63 for dosage total. A series of analyses with GLMs with categorical (diagnostic group; DBD pure, DBD and an attentional disorder, DBD and an internalizing disorder) and continuous (age, gender, and length of treatment, when relevant) were conducted for the four dosage variables. Mean dosage scores for each of the 63 PEs were examined for patterns and trends.

**Additional analyses regarding multimorbid youth.** This study also sought to briefly evaluate whether the diversity and dosage of PEs differed as a function of number of diagnoses. A series of GLM analyses with categorical (number of diagnoses; DBD

pure, DBD and one additional diagnosis, DBD and two or more additional diagnoses) and continuous (age, gender, and length of treatment when relevant) predictors were performed for the four diversity and four dosage variables for the sample of youth with one, two, or three diagnoses (N=569). Descriptions of the procedures are abbreviated here, since they largely replicate the methods documented for earlier.

## CHAPTER 3. RESULTS.

### Diversity of PEs and Comorbidity

The present study utilized a GLM approach to examine differences in diversity of PEs endorsed as a function of diagnostic comorbidity (i.e., pure DBD, DBD and an internalizing disorder, DBD and an attentional disorder). Means, standard deviations, and distributions for the four diversity composite variables (diversity total, diversity factors 1, 2, and 3) were examined as a data integrity check. Standardized residual plot inspections tested for assumptions of linearity and homoscedasticity, and histogram and normality curves suggested relative normality of residuals.

In order to identify relevant covariates, Pearson and point-biserial correlations were conducted for the four diversity composite variables and client characteristics (i.e., gender, age at treatment start, length of treatment episode, total CAFAS score at treatment entry). As can be seen in Table 3, the three covariates themselves were related. Specifically, (a) male clients were more likely to be younger and to receive longer treatments and (b) younger clients overall received longer treatments. These covariates also correlated with the various diversity scores (all but one significantly). In summary, male and younger clients received more diverse treatments, and diversity and length of treatment were positively correlated. CAFAS score at the time of service initiation – a proxy for level of impairment – was not significantly correlated with any of the other covariates or with any of the diversity variables. Variables that had a significant relationship with the criterion were entered as covariates in the analyses.

Results from the GLM analyses revealed that the categorical predictor (comorbidity status) had no significant main effect on any of the four measures of

diversity (regarding main effects, total diversity,  $F(2,438)=.51, p=.60$ ; diversity factor 1,  $F(2,438)=.68, p=.51$ ; diversity factor 2,  $F(2,438)=.468, p=.63$ ; diversity factor 3,  $F(2,438)=.83, p=.44$ ). These findings held true both when covariates were ignored and when controlling for all higher-level predictor and covariate interactions (i.e., all 2-, 3-, and 4-way). Sample means and standard deviations of all diversity variables are reported in Table 4 and GLM results are given in the Appendices.

Given the absence of statistically significant effects on global measures of diversity of dosage, and the fact that such findings might obscure patterns at the individual PE level, Figure 1 provides a visual summary of the percent of youth within each diagnostic group that received each specific PE at least once during the course of treatment. Overall, findings indicated that the total diversity of PEs endorsed over the course of completed treatment episodes did not differ according to type of diagnostic comorbidity.

### **Dosage of PEs and Comorbidity**

Similar GLM analyses were conducted to examine differences in dosage of PEs between groups as function of comorbidity status. Following standardized checks of data assumptions, Pearson and point-biserial correlations were conducted between the four dosage composite variables (dosage total, dosage factor 1, dosage factor 2, dosage factor 3) and client characteristics (i.e., gender, age length of treatment episode, total CAFAS score at treatment entry; see Table 3). These analyses pointed to younger clients receiving a greater overall dose and a greater dose of behavior management practices. In addition, length of treatment was significantly related to greater dosage overall and across all three factor measures<sup>3</sup>. Neither gender nor total CAFAS score at the time of entry into

CAMHD were significantly related to any dosage variables and were excluded from any additional analyses.

Once again, GLM analyses revealed no main effects for the four dosage variables for type of comorbidity (regarding main effects, dosage total,  $F(2,439)=.32$ ,  $p=.73$ ; dosage factor 1,  $F(2,439)=.61$ ,  $p=.88$ ; dosage factor 2,  $F(2,440)=.02$ ,  $p=.99$ ; dosage factor 3,  $F(2,440)=.84$ ,  $p=.43$ ) even when examined without covariates or after controlling for higher level interactions between covariates and the criterion variable. Overall, results indicated that the dosage or quantity of PEs applied to youth did not differ between youth with pure DBD, youth with a DBD and an attentional disorder, and youth with a DBD and an internalizing disorder. GLM results are presented in the appendices.

### **Additional Analyses Regarding Multimorbid Youth**

**Diversity of PEs and number of diagnoses.** Table 5 depicts correlations and point-biserial correlations among the covariates and diversity and dosage scores in the larger sample used to examine multimorbidity (i.e.,  $N=569$ ). As found in the original sample, gender, age and length of treatment were related. Furthermore, male clients received more diverse treatment overall and within the behavior management factor (factor 1). Younger clients received more diverse treatments, significantly so for three of the four diversity measures. Length of treatment was also a strong predictor of diversity of practices across all four measures.

A series of analyses utilizing a GLM approach were conducted to examine each and every possible covariate-predictor interaction effects on each of the diversity scores. None of these interactions were statistically significant. As such, GLM analyses with

categorical (number of diagnoses; pure DBD, DBD and one additional disorder, DBD and two or more additional disorders) and continuous predictors (i.e. client characteristic variables significantly related to the criterion variable) were computed. Analyses yielded significant main effects on all measures of diversity: diversity total  $F(2,563) = 7.87$ ,  $p < .01$ , diversity factor 1,  $F(2,563) = 4.42$ ,  $p < .01$ , diversity factor 2,  $F(2,563) = 9.86$ ,  $p < .01$  and diversity factor 3,  $F(2,563) = 6.31$ ,  $p < .01$ . Post hoc pairwise comparisons with the Bonferroni correction statistic revealed that individuals with a DBD and two or more diagnoses, received significantly higher diversity total ( $M = .40$ ,  $SD = .15$ ), diversity factor 1 ( $M = .53$ ,  $SD = .22$ ), diversity factor 2 ( $M = .50$ ,  $SD = .21$ ), and diversity factor 3 ( $M = .58$ ,  $SD = .20$ ) scores than those with two diagnoses [diversity total ( $M = .34$ ,  $SD = .16$ ); diversity factor 1 ( $M = .47$ ,  $SD = .24$ ); diversity factor 2 ( $M = .41$ ,  $SD = .22$ ); diversity factor 3 ( $M = .52$ ,  $SD = .22$ )] or youth with a pure DBD [diversity total ( $M = .32$ ,  $SD = .15$ ); diversity factor 1 ( $M = .42$ ,  $SD = .24$ ); diversity factor 2 ( $M = .39$ ,  $SD = .21$ ); diversity factor 3 ( $M = .48$ ,  $SD = .20$ )]. Individuals with a DBD and one additional disorder did not significantly differ from the pure DBD group on these four variables. Means and standard deviations are presented in Table 6 and GLM analyses are listed in the appendices. Figure 2 provides a visual summary of the percent of youth within each group that received each specific PE at least once during the course of their treatment. cursory examination of these PE profiles roughly suggests the same patterns identified in the results. In summary, the diversity of PEs applied differed as a function of number of diagnoses, such that youth with a DBD and two or more diagnoses received more diverse practices throughout treatment than youth with pure DBD and youth with two diagnoses.

**Dosage of PEs and number of diagnoses.** The foregoing analyses were repeated to evaluate differences between groups on the four dosage variables as a function of number of diagnoses. As indicated in the correlation matrix in Table 5, younger clients received greater dosage overall and on behavioral management techniques (i.e., dosage factor 1). Longer lengths of treatment were also significantly related to higher dosage scores on all four variables. Both gender and total CAFAS score at treatment entry were not significantly correlated with any of the dosage variables, and were consequently not included as covariates.

Once again, a series of GLM analyses were conducted to examine all possible covariate-predictor interaction effects on each of the measures of dosage. Since none of these interactions were statistically significant, additional GLM analyses with categorical (number of diagnoses; pure DBD, DBD and one additional disorder, DBD and two or more additional disorders) and relevant continuous predictors were calculated. Results generated significant main effects for three of the measures of dosage: dosage total,  $F(2,564) = 6.87, p < .01$ ; dosage factor 2,  $F(2,564) = 8.86, p < .05$ ; dosage factor 3,  $F(2,565) = 6.22, p < .01$ . Post hoc pairwise comparisons with Bonferroni's correction statistic indicated that individuals with three or more diagnoses, received significantly higher scores on these variables [dosage total ( $M=14.11, SD=7.51$ ), dosage factor 2 ( $M=5.49, SD=3.30$ ), dosage factor 3 ( $M=4.75, SD=2.40$ )] than youth with two diagnoses [dosage total ( $M=11.73, SD=6.91$ ), dosage factor 2 ( $M=4.26, SD=2.93$ ), dosage factor 3 ( $M=4.06, SD=2.24$ )] or youth with a pure DBD [dosage total ( $M=1.04, SD=6.59$ ), dosage factor 2 ( $M=4.14, SD=2.41$ ), dosage factor 3 ( $M=3.80, SD=1.95$ )]. Though there was no main effect for dosage factor 1, there was a non-significant trend,  $F(2,564)=2.88, p=.06$ , in

which mean scores tended to be higher for youth with a DBD and two or more diagnoses (M=4.34, SD=2.55) when compared to youth with a DBD and one additional diagnoses (M=3.80, SD=2.53) or youth with DBD pure (M=3.50, S=2.39). Means and standard deviations are given in Table 6. Taken as a whole, the dosage of reported PEs differed as a function of number of diagnoses such that youth with a DBD and two or more diagnoses received higher dosage of practices throughout treatment than youth with pure DBD and youth with a DBD and one additional disorder. Similar to earlier analyses with comorbidity type as the predictor, youth with pure DBD did not differ in the four measures of dosage from youth with two diagnoses.



## CHAPTER 4. DISCUSSION.

The current study examined relationships between type of diagnostic comorbidity, number of diagnoses and therapists' application of PEs from DBD youth receiving IHH in a statewide system of care. Interestingly, results indicated that therapists treated youth with a DBD and one additional disorder with roughly the same diversity and dosage of practices with which they treated youth with a single DBD. More specifically, youth with a pure DBD did not differ in the diversity and dosage of PEs received from youth with a DBD and attentional disorder or youth with a DBD and an internalizing disorder. There was also a non-significant trend such that youth with a DBD and an attentional disorder tended to have higher scores of diversity and dosage than youth with a DBD alone or DBD and an internalizing disorder. These findings are contrary to what one might logically expect, given that effective practices indicated by the evidence-base differ between diagnostic groups (Evidence Based Services Committee, 2009). Yet outcomes are not entirely surprising, since a previous study identified rough similarities in PE profiles between youth with a DBD only and youth with a primary DBD (Daleiden et al, 2004). Surprisingly, the number of diagnoses (1, 2, or 3 or more) was a significant predictor of PE diversity and dosage, as main effects were found for all eight criterion variables. Specifically, treatment for youth with a DBD and two or more additional diagnoses significantly differed in diversity and dosage from treatment for youth with a DBD only and youth with a DBD and one additional diagnosis, but that youth with pure DBD did not differ from youth with a DBD and one additional diagnoses.

These results provide some important clues about what goes on under the metaphorical “hood” of youth treatment in community mental health settings. Therapists

have long been concerned about evidence-based treatments because of their reported lack of fit with the complex, comorbid clients served in usual care (Chambless & Ollendick, 2001). Thus, a logical next question is: do therapists practices differ as a function of comorbidity (broadly defined)? Based on the findings of this study, comorbidity – narrowly defined as the presence of two disorders - does not seem to have a significant effect. However, multimorbidity, or the presence of more than two disorders, does appear to relate to practice. With regard to clinical implications, this suggests that perhaps the champions of the evidence-based services movement can and should encourage increased use of techniques supported by the research, since therapists do not adjust their practices based on whether a youth has a pure or comorbid diagnosis. At the same time, therapists have some support for their argument for caution, in view of the fact that they do seem to significantly increase the diversity and dosage of their techniques for youth with three or more diagnoses.

Much of the prior research on usual care has examined the relationship between comorbidity and outcomes. Interestingly, studies of broadly defined comorbidity (e.g., Mueller et al, 2010) and multimorbidity (e.g., Kazdin & Whitley, 2006) indicate that co- or multimorbid youth do not necessarily respond less well to treatment when measured at treatment end and tend to show faster symptom improvement than their peers with a single diagnosis. While it is easy to argue that these nonsignificant differences in outcome measures should provide greater confirmation for the importance of evidence-based programs (i.e., since comorbidity may not relate to outcomes), there may be more nuanced factors to consider. For example, it is possible that therapists vary their practices for multimorbid youth in such a way that they are able to obtain the similar outcomes for

pure and comorbid youth. At the same time, Kazdin and Whitley's (2006) findings occurred in the context of a manualized treatment program, indicating that multimorbid youth obtained the same posttreatment outcome even when (we assume) therapists did not vary their practices as a function of number of diagnoses or type of comorbidity. Ultimately, few studies of community settings have distinguished co- (narrowly defined) and multimorbidity in analyses. Our results emphasize the importance of including number of diagnoses as a consideration in future research.

It is natural to wonder about why there are no significant differences in diversity and dosage of practices due to type of comorbidity. Though research has yet to address this question, there are several reasonable hypotheses. First, CAMHD is similar to many public and private mental health service systems in that the majority of clients served have challenges with externalizing behaviors (Frick, 1998; Jackson et al, 2010; Kazdin, 1995). It is thus likely that youth are more frequently referred for oppositionality and rule-breaking, and that these symptoms are immediate treatment targets (regardless of other underlying diagnoses). Along those lines, it is equally plausible that therapists are better trained in and more familiar with providing treatment for DBD-related problems, since the preponderance of clients that they assist present with such disorders. For these reasons, they may be more prone to applying PEs in a DBD-focused way, in spite of diagnosis.

Additionally, therapists and youth treatment teams might be unintentionally subscribing to the Japanese proverb: *"the nail that sticks out gets hammered down."* More specifically, treatment plans for youth may tend to involve PEs targeting oppositionality and rule-breaking because those behaviors are more overtly impairing

than the more private symptoms characterized by internalizing disorders. A visual examination of the most frequently endorsed practices across all groups (see Figures 1 and 2) indicate relative similarities to the evidence base for DBD in youth ages 13 years and older. Communication skills, problem solving and cognitive PEs are three of the top five most commonly cited practices in research-validated treatments for DBDs. Thus, therapists could be choosing to address DBD-related symptoms prior to attentional, anxious or mood targets because the disruptive behaviors are perceived as having greater negative impact on others. Such sequential approaches are consistent with earlier efforts in the adult literature (e.g., Drake et al, 1998; Horsfall et al, 2009) though both child and adult treatment science are focusing on more modular, integrated methods (e.g., Chorpita, 2006). Further research is needed to better unravel these hypotheses.

### **Limitations**

The findings of this study should be interpreted within the context of several broad limitations. First, the main variables of interest were type of comorbidity and number of diagnoses. Both of these predictors rely heavily on the assumption that youth clients were properly diagnosed at treatment initiation. Prior studies of diagnoses in the CAMHD system and beyond have indicated that diagnostic consistency is often fair to poor for some of the most common diagnostic problems faced by youth clients (i.e., attentional, disruptive, mood, and anxiety; Daleiden et al, 2004; Rettew et al, 2009). Thus, it is probable that some youth in the study were misdiagnosed and skewed the results in unpredictable ways. This is particularly relevant in light of evidence suggesting that an accurate diagnosis is a precursor to treatment success (Jensen Doss & Weisz, 2008). Future research on comorbidity and usual care may wish to consider more

dimensional measures of diagnoses, such as symptom counts or scores on tests of emotional and behavioral functioning (e.g., Child Behavior Checklist; Achenbach, 1992). Even so in CAMHD and elsewhere, the assignment of a diagnosis is far from obsolete and often required by clinics and third-party payers for the procurement of services.

For purposes of this study, youth were examined on the basis of whether or not they had been diagnosed with a DBD. Due to issues with sample size and insufficient power, we did not split the larger group into more specific diagnostic units such as ODD, CD, and DBD NOS (e.g., Kazdin & Whitley, 2006). This was unfortunate, in light of the possibility that youth with CD may present with greater severity than youth with ODD or DBD NOS. These qualitative differences may have influenced the diversity and dosage of PEs in understated ways. On the other hand, youth with CD tend to be older than youth with ODD (e.g., Jackson et al, 2010), and it is hoped that our efforts to account for client age may have mediated some of the variation due to diagnoses.

One set of GLM (categorical predictor: number of diagnoses) tests with all higher level interactions resulted in no main effects for the factor or for interaction terms including the factor and relevant covariates. Thus, interaction terms were not included in subsequent analyses. Though this exclusionary criteria was driven by theory and served to balance liberalism (i.e., running the analyses without covariates due to nonsignificant interactions) and conservatism (i.e., running the analyses with all higher level interactions), it is possible that we may have unknowingly ruled out some subtleties, which would minimize the main effect. Additional efforts to tackle this inconsistency might include more detailed analyses of data diagnostics, splitting the data into two parts to conduct cross-validation statistics, or running analyses on additional subgroups of the

predictors and covariates (e.g., comparing younger age and a single diagnoses, older age and a single diagnoses, younger age and 2 diagnoses, older age and 2 diagnoses, younger age and 3 or more diagnoses, and older age and 3 or more diagnoses). At the same time, our reported results provide greater interpretability than GLM analyses with 2-, 3-, and 4-way interactions and efforts to find statistical significance would likely require an impractically large sample size. Even if significant differences were detected in a more complex statistical model, effect sizes would likely be small and would be unable to speak to clinical practice in a functional way.

Next, CAMHD data pulls occasionally encounter issues with missing data. This occurred in the current study, specifically with regard to information about client ethnicity. On one level, it would have been important to examine whether ethnicity should have been considered as a covariate in the ANCOVA models. However, findings from studies conducted in the San Diego system of care suggest that ethnic background is not a relevant predictor of practices in usual care (Brookman Frazee et al, 2010). For that reason, the consequences of excluding ethnicity data from the analyses are expected to be minimal.

Since the primary purpose of the study was to examine diversity and dosage of PEs in the context of comorbidity, our investigation concentrated on child-specific characteristics. Theoretically, logic for this decision was sound. However, it may have been more appropriate to evaluate technique use in the context of additional nuanced therapist characteristics (e.g., theoretical orientation, years of experience, pre-service training program, attitudes towards evidence-based services) and other measures of case complexity such as family characteristics (e.g., annual family income, parent stress

index). Future attempts to examine usual care in the Hawai'i system may want to consider additional domains of predictor variables, especially since evidence suggests that certain parent characteristics are significant predictors of treatment outcome (Kazdin & Whitley, 2006). At the same time, there are an endless number of predictors that one could possibly consider and our study was focused primarily on comorbidity. Thus, analyses reflected the most parsimonious effort to account for the effects of covariates.

It is methodologically challenging to research treatment as usual, owing to the fact that data is nested in multiple levels (e.g., therapist, agency, level of care) and typically obtained in numerous ways. The inclusion of information from several clients per practitioner provided statistical advantages with regard to sample size, but begged the question about the extent to which certain therapists' characteristics were expressed in their style and practice. Since other researchers have found that client characteristics predicted practice use (Walker et al, 2008; Brookman Frazee et al, 2010), it is possible that therapists and therapy teams may have systematically varied practice use within their caseloads. That said, much more research is needed in this particular area and every effort should be made to properly consider the nestedness of the data statistically.

While the use of therapists' self-report of treatment techniques is a simple and cost-effective method to assess treatment as usual, several studies indicate discrepancies between direct observations of therapist behaviors and their self-reports (Carroll & Rounsaville, 2007; Hurlburt et al, 2009). Future research on the validity of such self-reports (including the MTPS) is needed to both understand and control for these discrepancies.

Observational methods also provide specific advantages over self-reports. Though our study was able to evaluate the quantity of practices endorsed over time (a proxy for dosage), the exact intensity or quality with which the PEs were applied during sessions is completely unknown. This is particularly pertinent, as upcoming research on usual care treatment seeks to go beyond the superficial descriptive of practices to evaluate more specific reasons for treatment success. However, the fact that certain descriptive findings (e.g., similar average number of PEs endorsed) from our study have reasonable congruence with results found with the TPOCS (Garland et al, 2010) presents greater support for the MTPS as reasonable metric in clinical practice.

Furthermore, this was a limited sample of mostly adolescent males with moderate to severe, comorbid psychopathology in a single statewide system of care. Though studies of DBD are often disproportionately male, the CAMHD population is relatively older, and more severe than samples in other studies of treatment as usual (e.g., Garland et al, 2010). This study was also conducted with a sample of youth receiving IHH services in a system of care that had undergone considerable recent reform. The practices that therapists used in other levels of care (e.g. out-of-home services) and in other systems of care is an open question.

## **Conclusions**

The high cost of treatment for youth with DBDs has called for an increased focus on accountability in mental health practice and a detailed understanding of usual care. Such efforts address the science-practice gap and attempt to unscramble reasons why clinicians argue that findings from controlled trials may not generalize to treatment as usual. Indeed, patients in actual practice are diverse, complex, and disproportionately co-



or multimorbid. Perhaps this objection is partially accurate and may point to interesting challenges for the implementation of evidence-based practices into treatment as usual..

Due to the subtleties of these findings, future research should attempt to examine the nuanced elements of treatment and treatment success. Namely, if therapists are treating comorbid youth in roughly the same way, what are the PEs that are most effective in mediating both disorders? Is the sequence of PE application relevant to treatment outcome? How does this differ for youth with more than two diagnoses?

Naturally, these questions and our results both draw attention to areas of agreement between evidence-based practice and treatment as usual and emphasize discrepancies. While the research literature aims to catch up to treatment studies of youth with co- and multimorbidity, practice-based evidence can serve as the baseline and the road map for possible new scientific efforts to develop effective treatments. Systems may choose to examine these inconsistencies more closely, and collaboratively determine practical methods of implementing changes (e.g, Higa McMillan, Kimhan, Daleiden & Mueller, 2011). Ultimately however, in a growing climate of managed care, effective and efficient measures of practice (e.g., the MTPS) will continually be necessary to improve services for youth and families through enhanced monitoring, feedback, and individual reflection.

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## FOOTNOTES

<sup>1</sup> Throughout the research literature, the term “comorbidity” is often used to refer to the presence of more than one disorder (i.e., comorbidity broadly defined). However, the term “multimorbidity” may be a more accurate description in cases where three or more disorders are present. Thus for purposes of this study, the term “comorbidity” will be used to refer to the presence of exactly two disorders (i.e., comorbidity narrowly defined) and “multimorbidity” will describe the presence of three or more disorders.

<sup>2</sup> Four hundred and forty four youth were included in the analyses regarding diversity, dosage, and comorbidity. Additional analyses examining diversity, dosage, and number of diagnoses included 569 youth.

<sup>3</sup> While length of treatment significantly predicted dosage, these bivariate correlations were smaller than those seen between length of treatment episode and diversity scores. This is expected since diversity (but not necessarily dosage) naturally increases as treatment carries on over months.

## **APPENDICES**

### **Appendix A**

CAMHD Notice of Privacy Practices

Child and Adolescent Mental Health Division

#### **Notice of Privacy Practices**

**Effective April 14, 2003**

**Child and Adolescent Mental Health Division  
("CAMHD")**

**THIS NOTICE EXPLAINS HOW MEDICAL INFORMATION ABOUT YOUR CHILD MAY BE USED AND DISCLOSED. IT ALSO EXPLAINS HOW YOU CAN ACCESS THIS INFORMATION. PLEASE READ IT CAREFULLY.**

#### **Understanding Your Child's Protected Health Information:**

CAMHD staff and doctors take notes each time your child visits them. They write down what they think is your child's condition and how they plan to care for them. Your child's health record has information that can identify him or her. This kind of information is known as "Protected Health Information." Your child's name and Social Security number are types of PHI.

If you know what is in the health record you can better protect your child's Protected Health Information ("PHI"). You can also ask how PHI will be used. You can decide if PHI should be disclosed. You can make sure that the health record is accurate.

#### **Our Duties:**

CAMHD must:

- Protect the privacy of PHI.
- Tell you about our legal duties.
- Tell you about our privacy practices. You have the right to know how CAMHD uses PHI.
- Abide by this notice.

CAMHD can change its practices at any time. We will mail you a copy of any new notice within 60 days.

CAMHD will ask for your consent before disclosing PHI. CAMHD can disclose PHI without your permission. But any release of PHI will follow the law, as explained in this notice.

#### **Your Child's Health Information Rights:**

CAMHD owns your child's health record. However, the information in the record belongs to

your child. On behalf of your child you have the right to:

- View or get paper copies of PHI.
- Decide how we send PHI to you. For example, CAMHD usually sends information by mail. You may ask to get PHI by other means, such as fax. You may also ask us to send PHI to another address.
- Ask to limit the use and disclosure of PHI. CAMHD is not required by law to agree to every request.
- Ask for corrections to your child's health record.
- Get an accounting of PHI disclosures.
- Change your mind about allowing use or disclosures of PHI. This does not apply to disclosures that have already happened.

**Information that does not identify your child is used for:**

- Medical and mental health research.
- Planning and improving services.
- Improving health care.

**Examples of Disclosures for Treatment, Payment, and Health Operations:**

CAMHD sometimes has to share PHI with other agencies to provide services. CAMHD will only share the minimum necessary PHI with them. We will also require them to protect the PHI they receive.

CAMHD will use and share PHI for the following purposes:

**Treatment.** For example: A CAMHD professional notes your child's and the treatment team's expectations in the health record. A doctor logs the actions taken and his or her observations. The care coordinator can review your child's record later to see if those goals were met.

**Payment.** For example: A provider sends a bill to CAMHD. The bill or accompanying materials may contain PHI.

**Regular Health Operations.** For example: CAMHD staff uses PHI to evaluate treatment outcomes. This helps CAMHD to improve our services.

**Other Uses or Disclosures (Permission not Needed):**

**Business Associates.** For example: CAMHD provides some of its services by contract. We may hire an auditor to review financial records. Those records may contain PHI about your child.

**Health Oversight.** CAMHD may share PHI with certain government oversight agencies. The U.S. Department of Health and Human Services is an example of such an agency.

**Law Enforcement.** CAMHD may share PHI for law enforcement purposes.

**Coroners, Medical Examiners and Funeral Directors.** CAMHD may share PHI with

people who need it to do this type of work.

***Organ Donation and Disease Registers.*** CAMHD may share PHI with authorized organ donation and transplantation organizations.

***Research.*** CAMHD may share information with researchers under certain conditions. An Institutional Review Board (IRB) must approve the research project. The IRB will also enforce rules that require researchers to keep PHI private.

***Public Health.*** CAMHD may have to disclose PHI to prevent or control disease, injury, or disability. CAMHD may share PHI with public health authorities for those reasons.

***Correctional institution.*** If your child is at a correctional facility, CAMHD can provide PHI to the facility. We will share PHI with the facility when needed to protect the health and safety of your child and others.

***Victims of Abuse (including Child Abuse), Neglect or Domestic Violence.*** CAMHD is required to report all suspected cases of abuse or neglect. CAMHD must contact the Police or Child Protective Services to make a report. These reports may contain PHI.

***Specialized Government Functions.*** CAMHD may disclose PHI for national security or intelligence purposes. We may disclose PHI to protective services for the President. It may disclose PHI to others as required by law.

***Judicial and Administrative Hearings.*** CAMHD may share PHI in judicial or administrative hearings. CAMHD will only share PHI after being served with an order of a court or administrative tribunal. CAMHD may also share PHI to respond to lawful processes. Subpoenas are a common type of lawful process.

***Other Government Agencies.*** CAMHD may share PHI with other government agencies if necessary to verify that your child is entitled to other benefits or services.

### **Family Educational Rights and Privacy Act (FERPA)**

Your child's records may also be considered "education records." CAMHD will only disclose information in your child's education records as allowed by FERPA regulations. The Department of Education provides you with your child's FERPA notice.

### **For More Information or to Report a Problem:**

You may contact us if you have other questions or want more information. Please call the CAMHD Privacy Coordinator at (808) 733-8370. You may also write to:

CAMHD Privacy Coordinator  
3627 Kilauea Avenue, Suite 101  
Honolulu, HI 96816

You can also file a complaint with the U.S. Department of Health and Human Services. You may contact them at:

Office of Civil Rights



Medical Privacy, Complaint Division  
U.S. Department of Health and Human Services  
200 Independence Avenue, S.W., HHH Bldg., Room 509H  
Washington, DC 20201  
Phone: (866) 627-7748  
TTY: (886) 788-4989  
E-mail: [www.hhs.gov/ocr](http://www.hhs.gov/ocr)

No one will face retaliation for filing a complaint.

My signature below indicates that I have been provided with a copy of the notice of privacy practices.

Name: \_\_\_\_\_ Child's Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_ Date: \_\_\_\_\_

Relationship to child: \_\_\_\_\_

Effective Date: April 14, 2003.  
Distribution: Original to CAMHD.  
Copy to Parent/Guardian.  
6/03

## Appendix B

### Monthly Treatment and Progress Summary, Instructions, and Codebook

## SERVICE PROVIDER MONTHLY TREATMENT & PROGRESS SUMMARY Child and Adolescent Mental Health Division (CAMHD)

**Instructions:** Please complete and electronically submit this form to CAMHD by the 5<sup>th</sup> working day of each month (summarizing the time period of 1<sup>st</sup> to the last day of the previous month). The information will be used in service review, monitoring, planning and coordination in accordance with CAMHD policies and standards. Mahalo!

### Monthly Treatment and Progress Summary, Instructions, and Codebook

Client Name:	CR #:	DOB:
Month/Year of Services:	Eligibility Status:	Level of Care (one per form):
Axis I Primary Diagnosis:	Axis I Secondary Diagnosis:	Axis I Tertiary Diagnosis:
Axis II Primary Diagnosis:	Axis II Secondary Diagnosis:	

**Service Format (circle all that apply):**

Individual      Group      Parent      Family      Teacher      Other: \_\_\_\_\_

**Service Setting (circle all that apply):**

Home      School      Community      Out of Home      Clinic/Office      Other: \_\_\_\_\_

Service Dates:																		
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**Targets Addressed This Month (number up to 10):**

	Activity Involvement		Community Involvement		Hyperactivity		Positive Peer Interaction		Shyness
	Academic Achievement		Contentment, Enjoyment, Happiness		Learning Disorder, Underachievement		Phobia/Fears		Sleep Disturbance
	Adaptive Behavior/Living Skills		Depressed Mood		Low Self-Esteem		Positive Thinking/Attitude		Social Skills
	Adjustment to Change		Eating, Feeding Problems		Mania		Pregnancy Education/Adjustment		Speech and Language Problems
	Aggression		Empathy		Medical Regimen Adherence		Psychosis		Substance Use
	Anger		Enuresis, Encopresis		Occupational Functioning/Stress		Runaway		Suicidality
	Anxiety		Fire Setting		Oppositional/Non-Compliant Behavior		School Involvement		Traumatic Stress
	Assertiveness		Gender Identity Problems		Peer Involvement		School Refusal/Truancy		Treatment Engagement
	Attention Problems		Grief		Peer/Sibling Conflict		Self-Control		Willful Misconduct, Delinquency
	Avoidance		Health Management		Personal Hygiene		Self-Injurious Behavior		Other:
	Cognitive-Intellectual Functioning		Housing/Living Situation		Positive Family Functioning		Sexual Misconduct		Other:

CR # \_\_\_\_\_ (please repeat the number here)

**Progress Ratings This Month (check appropriate rating for any target numbers endorsed as targets):**

#	Deterioration < 0%	No Significant Changes 0%-10%	Minimal Improvement 11%-30%	Some Improvement 31%-50%	Moderate Improvement 51%-70%	Significant Improvement 71%-90%	Complete Improvement 91%-100%	Date (If Complete)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

**Intervention Strategies Used This Month (check all that apply):**

Activity Scheduling	Emotional Processing	Line of Sight Supervision	Personal Safety Skills	Stimulus or Antecedent Control
Assertiveness Training	Exposure	Maintenance or Relapse Prevention	Physical Exercise	Supportive Listening
Attending	Eye Movement, Tapping	Marital Therapy	Play Therapy	Tangible Rewards
Behavioral Contracting	Family Engagement	Medication/ Pharmacotherapy	Problem Solving	Therapist Praise/Rewards
Biofeedback, Neurofeedback	Family Therapy	Mentoring	Psychoeducation, Child	Thought Field Therapy
Care Coordination	Free Association	Milieu Therapy	Psychoeducation, Parent	Time Out
Catharsis	Functional Analysis	Mindfulness	Relationship or Rapport Building	Twelve-Step Program
Cognitive	Goal Setting	Modeling	Relaxation	Other:
Commands	Guided Imagery	Motivational Interviewing	Response Cost	Other:
Communication Skills	Hypnosis	Natural and Logical Consequences	Response Prevention	Other:
Crisis Management	Ignoring/Differential Reinforcement of Other Behavior	Parent Coping	Self-Monitoring	
Cultural Training	Individual Therapy for Caregiver	Parent/Teacher Monitoring	Self-Reward/ Self-Praise	
Discrete Trial Training	Insight Building	Parent/Teacher Praise	Skill Building	
Educational Support	Interpretation	Peer Pairing	Social Skills Training	

CR # \_\_\_\_\_ (please repeat the number here)

Psychiatric Medications (List All)	Total Daily Dose	Dose Schedule	Check if Change	Description of Change
_____	_____	_____	...	_____
_____	_____	_____	...	_____
_____	_____	_____	...	_____
_____	_____	_____	...	_____
_____	_____	_____	...	_____

Projected Discharge Date: \_\_\_\_\_ ... Check if Discharged During Current Month

**IF YOUTH WAS DISCHARGED THIS MONTH, PLEASE COMPLETE ITEMS A & B:**

**A. Discharge Living Situation (check one):**

- Home                       Foster Home                       Group Care                       Residential Treatment  
 Institution/Hospital                       Jail/Correctional Facility                       Homeless/Shelter                       Other: \_\_\_\_\_

**B. Reason(s) for Discharge (check all that apply):**

- Success/Goals Met                       Insufficient Progress                       Family Relocation  
 Runaway/Elopement                       Refuse/Withdraw                       Eligibility Change                       Other: \_\_\_\_\_

**Outcome Measures:** Optional. If you have any of the following data, please report the most recent scores:

CAFAS (8 Scales): (1-School: ) (2-Home: ) (3-Community: ) (4-Behavior Toward Others: )			Date:
(5-Moods/Emotions: ) (6-Self-Harm: ) (7-Substance: ) (8-Thinking: ) (Total: )			
CASII/CALOCUS (Total):	CASII/CALOCUS (Level of Care):		Date:
CBCL (Total Problems T):	CBCL (Internalizing T):	CBCL (Externalizing T):	Date:
YSR (Total Problems T):	YSR (Internalizing T):	YSR (Externalizing T):	Date:
TRF (Total Problems T):	TRF (Internalizing T):	TRF (Externalizing T):	Date:
Arrested During Month? (Y/N):	School attendance (% of days):		

**Comments/Suggestions (attach additional sheets if necessary):**

Provider Agency & Island: _____	Clinician Name and ID#: _____
Provider Supervisor Signature: _____	Clinician Signature: _____
Submitted to CAMHD (date): _____	Care Coordinator: _____

## CAMHD Provider Monthly Summary Instructions and Codebook

- Home – Working with youth or family members in the youth’s home
- School – Working with youth or professionals in the youth’s educational setting, other than in the context of an IEP/MP meeting
- Community – Working with youth or others in the youth’s community/neighborhood
- Out of Home – Working with the youth or family in a residential facility
- Clinic/Office – Working with the youth or family in a clinical office
- Other – Another setting not specified above; please write description

For Service Dates, please provide the dates for each service provided during that month. If additional space is required, please continue writing dates in the area below the boxes provided. If the service was provided out of home (i.e., continuously), please provide start and end dates for that month’s services and put the word “to” in between in one of the boxes.

### Targets

Targets are the strengths and needs being addressed as part of the mental health services for that youth.

When completing the Targets Addressed This Month, please put numbers (1, 2, 3...) rather than checkmarks (X, D) to the left of each target addressed. This is so that progress ratings in the next section can be attached to each target. For example, if “Academic Achievement” was targeted, place a “1” in the box to the left of that target on the form. Numbers do not need to reflect any particular order. If more than 10 targets were addressed during the month, please provide only those you feel are the 10 most important. If a target was addressed for which there is no option, please number the “other” box, and write in the target.

The list of treatment targets is intended to provide a summary of strengths and needs that are commonly targeted for change during mental health service provision. These problem areas are NOT diagnostic descriptions and the primary targets for treatment may change over time for a particular youth. For example, when treating a youth with an eating disorder, treatment may target eating/feeding behavior at one point, but target medical regimen adherence or positive family functioning on other occasions. These treatment targets are for progress summary purposes and should NOT replace the detailed specification of goals and objectives as part of the treatment planning process.

### Definitions of Targets

1. **Academic Achievement** – Issues related to general level or quality of achievement in an educational or academic context. This commonly includes performance in coursework, and excludes cognitive-intellectual ability/capacity issues (#11) and specific challenges in learning or achievement (#24)
2. **Activity Involvement** – Issues related to general engagement and participation in activities. Only code here those activities that are not better described by the particular activity classes of school involvement (#40), peer involvement (#30), or community involvement (#12).
3. **Adaptive Behavior/Living Skills** – Skills related to independent living, social functioning, financial management, and self-sufficiency that are not better captured under other codes

## CAMHD Provider Monthly Summary Instructions and Codebook

such as personal hygiene (#33), self-management/self-control (#43), social skills (#47), housing/living situation (#22), or occupational functioning/stress (#28).

4. **Adjustment to Change** – Issues related to a youth’s global response to a life transition or specific challenge (e.g., change of school, living situation, treatment transition or discharge, etc.).
5. **Aggression** – Verbal and/or physical aggression, or threat thereof, that results in intimidation, physical harm, or property destruction.
6. **Anger** – Emotional experience or expression of agitation or destructiveness directed at a particular object or individual. Common physical feelings include accelerated heartbeat, muscle tension, quicker breathing, and feeling hot.
7. **Anxiety** – A general uneasiness that can be characterized by irrational fears, panic, tension, physical symptoms, excessive anxiety, worry, or fear.
8. **Assertiveness** – The skills or effectiveness of clearly communicating one’s wishes. For example, the effectiveness with which a child refuses unreasonable requests from others, expresses his/her rights in a non-aggressive manner, and/or negotiates to get what s/he wants in their relationships with others.
9. **Attention Problems** – Described by short attention span, difficulty sustaining attention on a consistent basis, and susceptible to distraction by extraneous stimuli.
10. **Avoidance** – Behaviors aimed at escaping or preventing exposure to a particular situation or stimulus.
11. **Cognitive-Intellectual Functioning** – Issues related to cognitive-intellectual ability/capacity and use of those abilities for positive adaptation to the environment. This includes efforts to increase IQ, memory capacity, or abstract problem-solving ability.
12. **Community Involvement** – Issues related to the amount of involvement in specific community activities within the child’s day.
13. **Contentment/Enjoyment/Happiness** – Refers to issues involving the experience and expression of satisfaction, joy, pleasure, and optimism for the future.
14. **Depressed Mood** – Behaviors that can be described as persistent sadness, anxiety, or "empty" mood, feelings of hopelessness, guilt, worthlessness, helplessness, decreased energy, fatigue, etc.
15. **Eating/Feeding Problems**– Knowledge or behaviors involved with the ingestion or consumption of food. May include nutritional awareness, food choice, feeding mechanics (e.g., swallowing, gagging, etc.), and social factors relating with eating situations.
16. **Empathy** – Identifications with and understanding of another person’s situation, feelings, and motives.
17. **Enuresis/Encopresis** – Enuresis refers to the repeated pattern of voluntarily or involuntarily passing urine at inappropriate places during the day or at night in bed or clothes. Encopresis refers to a repeated pattern of voluntarily or involuntarily passing feces in inappropriate places.
18. **Fire Setting** – Intentionally igniting fires.
19. **Gender Identity Problems** – Issues related with a youth’s self-concept or self-understanding involving gender roles and social behaviors in relation to their biological sex. This does not address self-concept issues involving sexual orientation, which would be coded as “other.”
20. **Grief** – Feelings associated with a loss of contact with a significant person in the youth’s environment (e.g., parent, guardian, friend, etc.).

## CAMHD Provider Monthly Summary Instructions and Codebook

21. **Health Management** – Issues related to the improvement or management of one’s health, inclusive of both physical illness and fitness. In addition to dealing with the general development of health-oriented behavior and management of health conditions, this target can also focus on exercise or lack of exercise.
22. **Housing/Living Situation** – Refers to finding or stabilizing an appropriate living situation for a youth.
23. **Hyperactivity** – Can be described by fidgeting, squirming in seat, inability to remain seated, talking excessively, difficulty engaging in leisure activities quietly, etc.
24. **Learning Disorder, Underachievement** – Refers to specific challenges with learning or educational performance that are not better accounted for by cognitive-intellectual functioning (#11) or general academic achievement (#1).
25. **Low Self-Esteem** – An inability to identify or accept his/her positive traits or talents, and accept compliments. Verbalization of self-disparaging remarks and viewing him or herself in a negative manner.
26. **Mania** – An inflated self-perception that can be manifested by loud, overly friendly social style that oversteps social boundaries, and high energy and restlessness with a reduced need for sleep.
27. **Medical Regimen Adherence** – Knowledge, attitudes, and behaviors related to regular implementation procedures prescribed by a health care professional. Commonly include lifestyle behaviors (e.g., exercise, nutrition), taking medication, or self-administration of routine assessments (e.g., taking blood samples in a diabetic regimen).
28. **Occupational Functioning/Stress** – Issues related to career interests, seeking employment, obtaining work permits, job performance, or managing job stress or strain that are not better characterized under other targets (e.g., anxiety).
29. **Oppositional/Non-Compliant Behavior** – Behaviors that can be described as refusal to follow adult requests or demands or established rules and procedures (e.g., classroom rules, school rules, etc.).
30. **Peer Involvement** – A greater involvement in activities with peers. Activities could range from academic tasks to recreational activities while involvement could range from working next to a peer to initiating an activity with a peer.
31. **Peer/Sibling Conflict** – Peer and/or sibling relationships that are characterized by fighting, bullying, defiance, revenge, taunting, incessant teasing and other inappropriate behaviors.
32. **Phobia/Fears** – Irrational dread, fear, and avoidance of an object, situation, or activity.
33. **Personal Hygiene** – Challenges related to self-care and grooming.
34. **Positive Family Functioning** – Issues related with healthy communication, problem-solving, shared pleasurable activities, physical and emotional support, etc. in the context of an interaction among multiple persons in a family relation, broadly defined.
35. **Positive Peer Interaction** – Social interaction and communication with peers that are pro-social and appropriate. This differs from peer involvement (#30) in that it focuses on interactional behavior, styles, and intentions, whereas peer involvement targets actual engagement in activities with peers regardless of interactional processes.
36. **Positive Thinking/Attitude** – This target involves clear, healthy, or optimistic thinking, and involves the absence of distortions or cognitive bias that might lead to maladaptive behavior.
37. **Pregnancy Education/Adjustment** – Issues related to helping a pregnant youth prepare and adjust to parenthood.



## CAMHD Provider Monthly Summary Instructions and Codebook

38. **Psychosis** – Issues related to atypical thought content (delusions of grandeur, persecution, reference, influence, control, somatic sensations), and/or auditory or visual hallucinations.
39. **Runaway** – Running away from home or current residential placement for a day or more.
40. **School Involvement** – Detailed description of amount of involvement in specific school activities within the child’s scheduled school day.
41. **School Refusal/Truancy** – Reluctance or refusal to attend school without adult permission for the absence. May be associated with school phobia or fear manifested by frequent somatic complaints associated with attending school or in anticipation of school attendance, or willful avoidance of school in the interest of pursuing other activities.
42. **Self-Injurious Behavior** – Acts of harm, violence, or aggression directed at oneself.
43. **Self-Management/Self-Control** – Issues related to management, regulation, and monitoring of one’s own behavior.
44. **Sexual Misconduct** – Issues related with sexual conduct that is defined as inappropriate by the youth’s social environment or that includes intrusion upon or violation of the rights of others.
45. **Shyness** – Social isolation and/or excessive involvement in isolated activities. Extremely limited or no close friendships outside the immediate family members. Excessive shrinking or avoidance of contact with unfamiliar people.
46. **Sleep Disturbance** – Difficulty getting to or maintaining sleep.
47. **Social Skills** – Skills for managing interpersonal interactions successfully. Can include body language, verbal tone, assertiveness, and listening skills, among other areas.
48. **Speech and Language Problems** – Expressive and/or receptive language abilities substantially below expected levels as measured by standardized tests.
49. **Substance Abuse/Substance Use** – Issues related to the use or misuse of a common, prescribed, or illicit substances for altering mental or emotional experience or functioning.
50. **Suicidality** – Issues related to recurrent thoughts, gestures, or attempts to end one’s life.
51. **Traumatic Stress** – Issues related to the experience or witnessing of life events involving actual or threatened death or serious injury to which the youth responded with intense fear, helplessness, or horror.
52. **Treatment Engagement** – The degree to which a family or youth is interested and optimistic about an intervention or plan, such that they act willfully to participate and work toward the success of the plan.
53. **Willful Misconduct/Delinquency** – Persistent failure to comply with rules or expectations in the home, school, or community. Excessive fighting, intimidation of others, cruelty or violence toward people or animals, and/or destruction of property.

### Progress Ratings

Please provide a single progress rating for each target selected above (up to 10). Numbers 1 through 10 in the left column refer to the targets selected in the Targets Addressed This Month section above. For example, had you selected “Academic Achievement” above, there would be a “1” in the box to the left of that target on that section. Then, the first row of the Progress Ratings, labeled “1,” is where you would note the progress ratings associated with academic achievement.

Please place a mark (X, D) in the column corresponding to your subjective rating of progress associated with this target. When possible, your overall subjective ratings should be informed by

## CAMHD Provider Monthly Summary Instructions and Codebook

a review of objective measures such as any available and relevant questionnaires or behavioral observation data. For example, if a youth receives a T-score of 70 during an intake assessment and the treatment goal is to reduce this score to 60, then if a youth receives a T-score of 65 during a monthly assessment, then 50% progress may be reported [i.e.,  $70 - 65 / 70 - 60 = 5 / 10 = 50\%$ ]. Or if a youth gets into 10 fights per week initially and the treatment goal is to reduce fighting to 0 fights per week, then during a month in which the youth was fighting only 3 times per week, that would reflect 70% progress [i.e.,  $10 - 3 / 10 - 0 = 7 / 10 = 70\%$ ].

**anchors refer to changes from baseline or beginning of services for that target.** Thus, a youth who had reached 90% of an initial goal would receive a rating of “significant improvement.” If that progress were to decline to 70% in the following month, the youth would then get a rating of “moderate improvement” for that target for that month (not “deterioration”). “Deterioration” refers to when a target gets worse from the time it was initially addressed. If there is a break in addressing a specific target (e.g., a target is addressed, then not addressed for a month, then addressed again in a later month), use the initial baseline from the first time as the point of comparison. Only when there is a break in the complete episode of care (i.e., discharge followed by later admission), should that reset the baseline for a given target.

If a goal is reached (improvement is complete), the provider may choose to note the date in the rightmost column. This implies that the target is no longer being addressed. Targets that are not complete should be rated again on the following month’s summary form.

### Intervention Strategies

Please place a mark (X, D) to the left of any intervention strategies used during the past month. There is no limit to how many may be checked. If strategies were employed that are not in the following list of definitions, please mark the “other” box and write in the strategy used.

### Definitions of Intervention Strategies

1. **Activity Scheduling** – The assignment or request that a child participate in specific activities outside of therapy time, with the goal of promoting or maintaining involvement in satisfying and enriching experiences.
2. **Assertiveness Training** – Exercises or techniques designed to promote the child’s ability to be assertive with others, usually involving rehearsal of assertive interactions.
3. **Attending** – Exercises involving the youth and caregiver playing together in a specific manner to facilitate their improved verbal communication and nonverbal interaction. Can involve the caregiver’s imitation and participation in the youth’s activity, as well as parent-directed play (previously called “Directed Play”).
4. **Behavioral Contracting** – Development of a formal agreement specifying rules, consequences, and a commitment by the youth and relevant others to honor the content of the agreement.
5. **Biofeedback/ Neurofeedback** – Strategies to provide information about physiological activity that is typically below the threshold of perception, often involving the use of specialized equipment.

## CAMHD Provider Monthly Summary Instructions and Codebook

6. **Care Coordination** – Coordinating among the youth’s service providers to ensure effective communication, receipt of appropriate services, adequate housing, etc.
7. **Catharsis** – Strategies designed to bring about the release of intense emotions, with the intent to develop mastery of affect and conflict.
8. **Cognitive** – Any techniques designed to alter interpretation of events through examination of the child’s reported thoughts, typically through the generation and rehearsal of alternative counter-statements. This can sometimes be accompanied by exercises designed to comparatively test the validity of the original thoughts and the alternative thoughts through the gathering or review of relevant information.
9. **Commands** – Training for caregivers in how to give directions and commands in such a manner as to increase the likelihood of child compliance.
10. **Communication Skills** – Training for youth or caregivers in how to communicate more effectively with others to increase consistency and minimize stress. Can include a variety of specific communication strategies (e.g., active listening, “I” statements).
11. **Crisis Management** – Immediate problem solving approaches to handle urgent or dangerous events. This might involve defusing an escalating pattern of behavior and emotions either in person or by telephone, and is typically accompanied by debriefing and follow-up planning.
12. **Cultural Training** – Education or interaction with culturally important values, rituals, or sites with no specific practices identified.
13. **Discrete Trial Training** – A method of teaching involving breaking a task into many small steps and rehearsing these steps repeatedly with prompts and a high rate of reinforcement.
14. **Educational Support** – Exercises designed to assist the child with specific academic problems, such as homework or study skills. This includes tutoring.
15. **Emotional Processing** – A program based on an information processing model of emotion that requires activation of emotional memories in conjunction with new and incompatible information about those memories.
16. **Exposure** – Techniques or exercises that involve direct or imagined experience with a target stimulus, whether performed gradually or suddenly, and with or without the therapist’s elaboration or intensification of the meaning of the stimulus.
17. **Eye Movement/ Tapping** – A method in which the youth is guided through a procedure to access and resolve troubling experiences and emotions, while being exposed to a therapeutic visual or tactile stimulus designed to facilitate bilateral brain activity.
18. **Family Engagement** – The use of skills and strategies to facilitate family or child’s positive interest in participation in an intervention.
19. **Family Therapy** – A set of approaches designed to shift patterns of relationships and interactions within a family, typically involving interaction and exercises with the youth, the caregivers, and sometimes siblings.
20. **Free Association** – Technique for probing the unconscious in which a person recites a running commentary of thoughts and feelings as they occur.
21. **Functional Analysis** – Arrangement of antecedents and consequences based on a functional understanding of a youth’s behavior. This goes beyond straightforward application of other behavioral techniques.
22. **Goal Setting** – Setting specific goals and developing commitment from youth or family to attempt to achieve those goals (e.g., academic, career, etc.).

## CAMHD Provider Monthly Summary Instructions and Codebook

23. **Guided Imagery** – Visualization or guided imaginal techniques for the purpose of mental rehearsal of successful performance. Guided imagery for the purpose of physical relaxation (e.g., picturing calm scenery) is not coded here, but rather coded under relaxation (#50).
24. **Hypnosis** – The induction of a trance-like mental state achieved through suggestion.
25. **Ignoring/Differential Reinforcement of Other Behavior** – The training of parents or others involved in the social ecology of the child to selectively ignore mild target behaviors and selectively attend to alternative behaviors.
26. **Individual Therapy for Caregiver** – Any therapy designed directly to target individual (non-dyadic) psychopathology in one or more of the youth’s caregivers. If the therapy for caregivers involves marital therapy (#31) or communication skills (#10) those are not coded here, unless there are additional services for individual caregiver psychopathology, in which case all that apply should be coded.
27. **Insight Building** – Activity designed to help a youth achieve greater self-understanding.
28. **Interpretation** – Reflective discussion or listening exercises with the child designed to yield therapeutic interpretations. This does not involve targeting specific thoughts and their alternatives, which would be coded as cognitive/coping.
29. **Line of Sight Supervision** – Direct observation of a youth for the purpose of assuring safe and appropriate behavior.
30. **Maintenance/Relapse Prevention** – Exercises and training designed to consolidate skills already developed and to anticipate future challenges, with the overall goal to minimize the chance that gains will be lost in the future
31. **Marital Therapy** – Techniques used to improve the quality of the relationship between caregivers.
32. **Medication/ Pharmacotherapy** – Any use of psychotropic medication to manage emotional, behavioral, or psychiatric symptoms.
33. **Mentoring** – Pairing with a more senior and experienced individual who serves as a positive role model for the identified youth.
34. **Milieu Therapy** – A therapeutic approach in residential settings that involves making the environment itself part of the therapeutic program. Often involves a system of privileges and restrictions such as a token or point system.
35. **Mindfulness** – Exercises designed to facilitate present-focused, non-evaluative observation of experiences as they occur, with a strong emphasis of being “in the moment.” This can involve the youth’s conscious observation of feelings, thoughts, or situations.
36. **Modeling** – Demonstration of a desired behavior by a therapist, confederates, peers, or other actors to promote the imitation and subsequent performance of that behavior by the identified youth.
37. **Motivational Interviewing** – Exercises designed to increase readiness to participate in additional therapeutic activity or programs. These can involve cost-benefit analysis, persuasion, or a variety of other approaches.
38. **Natural and Logical Consequences** – Training for parents or teachers in (a) allowing youth to experience the negative consequences of poor decisions or unwanted behaviors, or (b) delivering consequences in a manner that is appropriate for the behavior performed by the youth.

## CAMHD Provider Monthly Summary Instructions and Codebook

39. **Parent Coping** – Exercises or strategies designed to enhance caregivers’ ability to deal with stressful situations, inclusive of formal interventions targeting one or more caregiver.
40. **Parent/Teacher Monitoring** – The repeated measurement of some target index by the parent, teacher, or other adult involved in the child’s social ecology.
41. **Parent/Teacher Praise** – The training of parents, teachers, or other adults involved in the social ecology of the child in the administration of social rewards to promote desired behaviors. This can involve praise, encouragement, affection, or physical proximity.
42. **Peer Pairing** – Pairing with another youth of same or similar age to allow for reciprocal learning or skills practice.
43. **Personal Safety Skills** – Training for the youth in how to maintain personal safety of one’s physical self. This can include education about attending to one’s sense of danger, body ownership issues (e.g., “good touch-bad touch”), risks involved with keeping secrets, how to ask for help when feeling unsafe, and identification of other high-risk situations for abuse.
44. **Physical Exercise** – The engagement of the youth in energetic physical movements to promote strength or endurance or both. Examples can include running, swimming, weight-lifting, karate, soccer, etc. Note that when the focus of the physical exercise is also to produce talents or competence and not just physical activity and conditioning, the code for “Skill Building” (#55) can also be applied.
45. **Play Therapy** – The use of play as a primary strategy in therapeutic activities. This may include the use of play as a strategy for clinical interpretation. Different from Attending (#3), which involves a specific focus on modifying parent-child communication. This is also different from play designed specifically to build relationship quality (#49).
46. **Problem Solving** – Techniques, discussions, or activities designed to bring about solutions to targeted problems, usually with the intention of imparting a skill for how to approach and solve future problems in a similar manner.
47. **Psychoeducational-Child** – The formal review of information with the child about the development of a problem and its relation to a proposed intervention.
48. **Psychoeducational-Parent** – The formal review of information with the caregiver(s) about the development of the child’s problem and its relation to a proposed intervention. This often involves an emphasis on the caregiver’s role in either or both.
49. **Relationship/Rapport Building** – Strategies in which the immediate aim is to increase the quality of the relationship between the youth and the therapist. Can include play, talking, games, or other activities.
50. **Relaxation** – Techniques or exercises designed to induce physiological calming, including muscle relaxation, breathing exercises, meditation, and similar activities. Guided imagery exclusively for the purpose of physical relaxation is also coded here.
51. **Response Cost** – Training parents or teachers how to use a point or token system in which negative behaviors result in the loss of points or tokens for the youth.
52. **Response Prevention** – Explicit prevention of a maladaptive behavior that typically occurs habitually or in response to emotional or physical discomfort.
53. **Self-Monitoring** – The repeated measurement of some target index by the child.
54. **Self-Reward/Self-Praise** – Techniques designed to encourage the youth to self-administer positive consequences contingent on performance of target behaviors.

## CAMHD Provider Monthly Summary Instructions and Codebook

55. **Skill Building** – The practice or assignment to practice or participate in activities with the intention of building and promoting talents and competencies.
56. **Social Skills Training** – Providing information and feedback to improve interpersonal verbal and non-verbal functioning, which may include direct rehearsal of the skills. If this is paired with peer pairing (#42), that should be coded as well.
57. **Stimulus/Antecedent Control** – Strategies to identify specific triggers for problem behaviors and to alter or eliminate those triggers in order to reduce or eliminate the behavior.
58. **Supportive Listening** – Reflective discussion with the child designed to demonstrate warmth, empathy, and positive regard, without suggesting solutions or alternative interpretations.
59. **Tangible Rewards** – The training of parents or others involved in the social ecology of the child in the administration of tangible rewards to promote desired behaviors. This can involve tokens, charts, or record keeping, in addition to first-order reinforcers.
60. **Therapist Praise/Rewards** – The administration of tangible (i.e., rewards) or social (e.g., praise) reinforcers by the therapist.
61. **Thought Field Therapy** – Techniques involving the tapping of various parts of the body in particular sequences or "algorithms" in order to correct unbalanced energies, known as thought fields.
62. **Time Out** – The training of or the direct use of a technique involving removing the youth from all reinforcement for a specified period of time following the performance of an identified, unwanted behavior.
63. **Twelve-Step Program** – Any programs that involve the twelve-step model for gaining control over problem behavior, most typically in the context of alcohol and substance use, but can be used to target other behaviors as well.

For medication interventions please list each psychiatric medication the youth is taking (e.g., Adderall ER), describe the prescribed total daily dose for each medication (e.g., 30 mg.), identify the prescribed dose schedule (e.g., 2x/week, 3x/day, 15-10-5/day, etc.), place a check mark in the appropriate box if there was a change in the medication or regimen during the reporting month, and provide a description of the change on the line to the right (e.g., new medication, daily dosage change from 10 to 30 mg, change in dose schedule from 5-5/day to 10-10-10/day, etc.).

For Projected End Date, please indicate the expected date for termination of the services for which this form was completed.

For Discharged During Month please indicate if the youth was discharged from your program during the reporting month. If the youth was discharged, please indicate the Living Situation that the youth was entering upon discharge and the Reason for Discharge. For Projected End Date, please indicate the expected date for termination of the services for which this form was completed.

## CAMHD Provider Monthly Summary Instructions and Codebook

### Living Situation upon Discharge

Please place a mark (X, D) to the left of statement that best describes the type of living environment in which the youth was expected to reside at the time of discharge. Please select only one option. If the youth's living situation at discharge is not well described by the following list of definitions, please mark the "other" box and write in the youth's living situation.

1. **Home** - Youth to live in a house, apartment, trailer, hotel, dorm, barrack, and/or single room occupancy. This excludes situations better characterized as foster homes.
2. **Foster Home**-Youth to reside in a foster home or therapeutic foster home. A foster home is a home that is licensed to provide foster care to children, adolescents, and/or adults.
3. **Group Care**-Youth to reside in a group care facility. This level of care may include a group home, therapeutic group home, or board and care. This excludes community-based residential and hospital-based residential care
4. **Residential Treatment**- Youth to reside in a community-based residential treatment, rehabilitation center, or other residential treatment that is not better characterized as a group home or institution/hospital facility. An organization, not licensed as a psychiatric hospital, whose primary purpose is the provision of individually planned programs of mental health treatment services in conjunction with residential care for children and youth. The services are provided in facilities that are certified by state or federal agencies or through a national accrediting agency.
5. **Institutional/Hospital**-Youth resides in an institutional care or hospital-based residential care facility with care provided on a 24 hour, 7 day a week basis. This level of care may include a skilled nursing/intermediate care facility, nursing homes, institutes of mental disease, inpatient psychiatric hospital, psychiatric health facility, Veterans Affairs hospital, or state hospital.
6. **Jail/Correctional Facility**-Youth resides in a Jail and/or Correctional facility with care provided on a 24 hour, 7 day a week basis. This level of care may include a jail, correctional facility, detention centers, prison, youth authority facility, juvenile hall, boot camp, or boys ranch.
7. **Homeless/Shelter**- A youth is considered homeless if s/he lacks a fixed, regular, and adequate nighttime residence or his/her primary nighttime residency is a supervised publicly or privately operated shelter designed to provide temporary living accommodations, an institution that provides a temporary residence for individuals intended to be institutionalized, or a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings (e.g., on the street). Youth who were discharged due to extended runaway or elopement episode should be recorded in this category.

### Reason(s) for Discharge

Please place a mark (X, D) to the left of each statement that describes the reasons for discharging youth from the program during the reporting month. There is no limit to how many may be checked. If the discharge reason is not well characterized by the following list of definitions, please mark the "other" box and write in the reason.

## CAMHD Provider Monthly Summary Instructions and Codebook

1. **Success/Goals Met**-Youth was clinically discharged due to sufficient treatment progress (e.g., symptoms reduced, functioning improved), treatment goals were met, youth was evaluated and services were determined unnecessary, services were completed, or youth was moving to a less restrictive and intensive level of care.
2. **Insufficient Progress**-Youth was discharged from service without showing sufficient treatment progress to be judged as clinically successful (i.e., little symptom reduction, improvement in functioning, or goal attainment was achieved).
3. **Family Relocation**-Youth was discharge because the youth and family moved out of state or out of the service area.
4. **Runaway/Elopement**-Youth was discharged in association with an extended period of unavailability for treatment because the youth had runaway from home or eloped from the program.
5. **Refuse/Withdraw**-Youth was discharged due to parental refusal, non-participation in treatment, lack of consent, or other indication that client withdrew from services against professional advice.
6. **Eligibility Change**-Youth was discharged in association with a change in eligibility for services, such as a termination of a court order or commitment, aging out of child and adolescent services, loss of Medicaid insurance, etc.

Please provide any other Comments or Suggestions for the youth's care coordinator you think would be important.

If scores are available on any of the Outcome Measures recommended in the Interagency Practice Guidelines, please provide them along with dates in the optional section provided. Include whether or not youth was arrested during the past month, and an estimate of the percentage of school days that were attended. If school is attended in a residential setting, this counts toward the percentage of days attended.

For the CAFAS, the numbered spaces refer to the following scales: 1-School, 2-Home, 3-Community, 4-Behavior Towards Others, 5-Moods/Emotions, 6-Self-Harm, 7-Substance, 8-Thinking. "Total" refers to the sum of these 8 scales.

Please write the name of the agency including location (e.g., Maui, Big Island) and name of the clinicians (along with CAMHMIS ID#) and provider, along with appropriate signatures of the clinician completing the form and the qualified supervisor. Note the date that the form was submitted electronically to CAMHD and provide name of Care Coordinator.



Appendix C

*General Linear Model Analyses Examining Diversity and Dosage Scores as a Function of Comorbidity Status, With Age, Episode Length, and Gender as Covariates (N=444)*

Source	df	SS	MS	F	$\omega^2$
<i>Diversity total</i>					
Comorbidity	2	.02	.01	.51	.00
Age	1**	.19**	.19**	9.58**	.02**
Episode Length	1**	1.81**	1.81**	93.23**	.18**
Gender	1	.06	.06	3.05	.01
Error	438	8.48	.02		
Total	444	60.03			
<i>Diversity factor 1</i>					
Comorbidity	2	.06	.03	.68	.00
Age	1**	.91**	.91**	20.41**	.05**
Episode Length	1**	3.21**	3.21**	72.14**	.14**
Gender	1	.16	.16	3.57	.01
Error	438	19.50	.05		
Total	444	115.05			
<i>Diversity factor 2</i>					
Comorbidity	2	.01	.00	.09	.00
Episode Length	1**	4.18**	4.18**	111.69**	.20**
Gender	1	.02	.02	.53	.00
Error	439	16.45	.04		
Total	444	92.36			
<i>Diversity factor 3</i>					
Comorbidity	2	.06	.03	.83	.00
Age	1	.06	.06	1.43	.00
Episode Length	1**	2.49**	2.49**	64.14**	.13**
Gender	1	.06	.06	1.45	.00
Error	438	17.03	.04		
Total	444	134.55			
<i>Dosage total</i>					
Comorbidity	2	26.26	13.13	.32	.00
Age	1**	386.18**	386.18**	9.47**	.02**
Episode Length	1*	166.21*	166.21*	4.08*	.01*
Error	439	17893.73	40.76		
Total	444	77110.90			
<i>Dosage factor 1</i>					

Comorbidity	2	7.04	3.52	.61	.00
Age	1**	124.94**	124.94**	21.53**	.05**
Episode Length	1	13.52	13.52	2.33	.01
Error	439	2547.44	5.80		
Total	444	8784.87			
<i>Dosage factor 2</i>					
Comorbidity	2	.23	.11	.02	.00
Episode Length	1**	80.31**	80.31**	10.80**	.02**
Error	440	3272.79	7.44		
Total	444	11243.36			
<i>Dosage factor 3</i>					
Comorbidity	2	7.58	3.79	.84	.00
Episode Length	1*	27.10*	27.10*	6.00*	.01*
Error	440	1988.17	4.52		
Total	444	8994.44			

*Note.* \*\* $p < .01$ , \* $p < .05$ ; Gender is coded 0=Female, 1=Male. Factor 1 (behavior management) includes communication skills, family engagement, skill building, therapist praise or rewards, parent or teacher praise, parent or teacher monitoring, social skills training, activity scheduling, modeling, tangible rewards, line of sight supervision, ignoring or differential reinforcement of other, time out, peer pairing, and response cost. Factor 2 (cognitive/self-coping) includes problem solving, cognitive, supportive listening or client centered, emotional processing, insight building social skills training, commands, self monitoring, motivational interviewing, mentoring, mindfulness, self reward or self praise, relaxation, assertiveness training, stimulus control or antecedent management, maintenance or relapse prevention, peer pairing, response prevention, and exposure. Factor 3 (family interventions) includes problem solving, communication skills, natural and logical consequences, psychoeducational-parent, insight building, parent or teacher praise, psychoeducational-child, commands, motivational interviewing, maintenance or relapse prevention, functional analysis, and marital therapy. Total includes practice elements from all factors and maintenance or relationship or rapport building, parent coping, educational support, crisis management, goal setting, attending, play therapy, care coordination, interpretation, individual therapy for caregiver, personal safety skills, medication or pharmacotherapy, guided imagery, milieu therapy, catharsis, twelve step program, biofeedback or neurofeedback, free association, thought field therapy, behavior management, cultural training, hypnosis, discrete trial training, eye movement or tapping, physical exercise.

Appendix D

*General Linear Model Analyses Examining Diversity and Dosage Scores as a Function of Number of Diagnoses, With Age, Episode Length, and Gender as Covariates (N=568)*

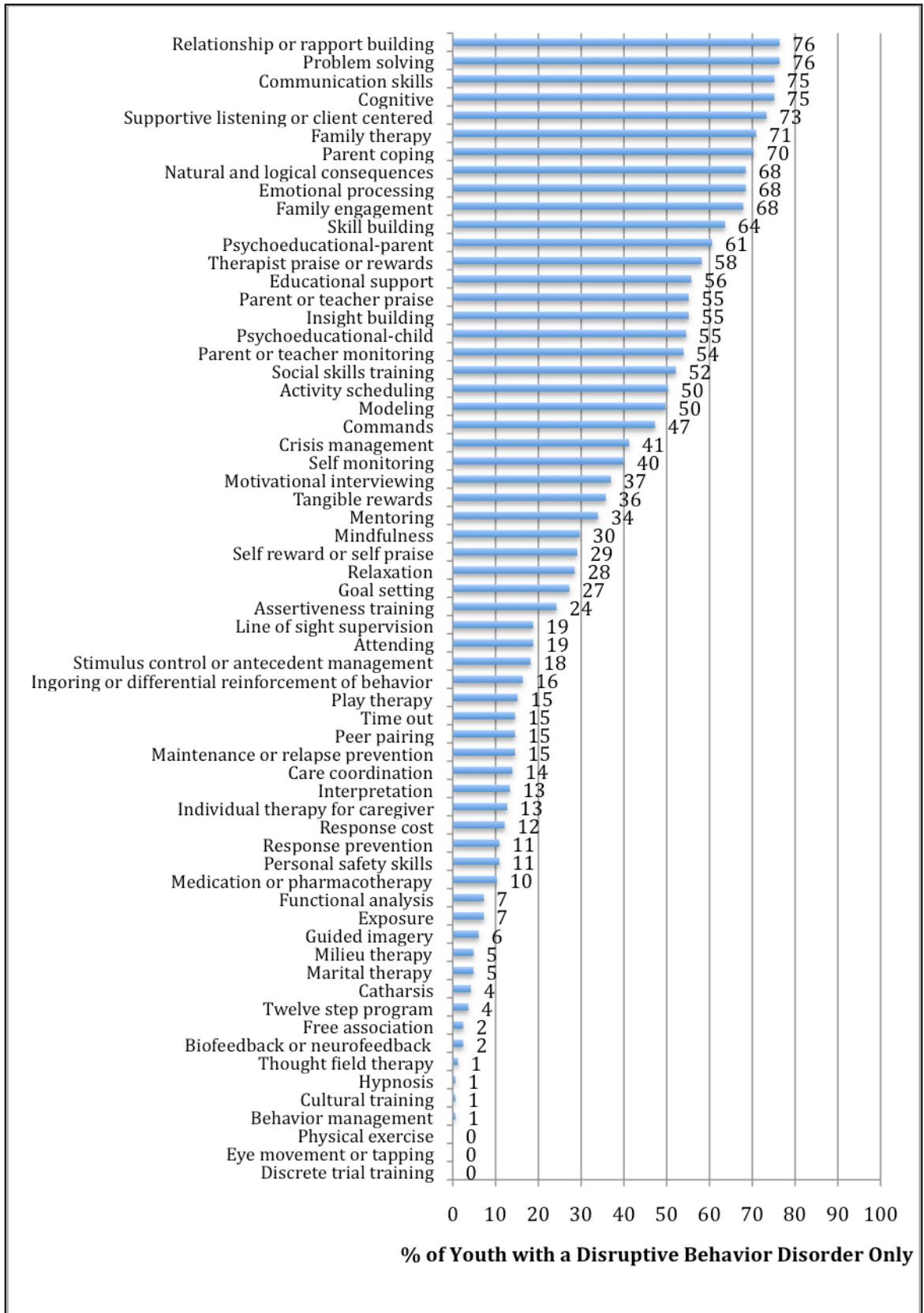
Source	df	SS	MS	F	$\omega^2$
<i>Diversity total</i>					
# Diagnoses	2**	.30**	.15**	7.87**	.03**
Age	1**	.16**	.16**	8.30**	.02**
Episode Length	1**	2.40**	2.40**	124.21**	.18**
Gender	1	.01	.01	.47	.00
Error	563	10.86	.02		
Total	569	82.52			
<i>Diversity factor 1</i>					
# Diagnoses	2*	.38*	.19*	4.42*	.02*
Age	1**	1.02**	1.02**	23.27**	.04**
Episode Length	1**	4.39**	4.39**	101.02**	.15**
Gender	1	.08	.08	1.88	.00
Error	563	24.45	.04		
Total	569	155.66			
<i>Diversity factor 2</i>					
# Diagnoses	2**	.73**	.38**	9.86**	.03**
Episode Length	1**	5.25**	5.25**	141.11**	.20**
Error	565	21.04	.04		
Total	569	129.06			
<i>Diversity factor 3</i>					
# Diagnoses	2**	.48**	.24**	6.31**	.02**
Age	1	.03	.03	.67	.00
Episode Length	1**	3.28**	3.28**	85.55**	.13**
Error	564	21.65	.04		
Total	569	182.26			
<i>Dosage total</i>					
# Diagnoses	2**	604.53**	302.27**	6.87**	.02**
Age	1**	363.35**	363.35**	8.25**	.01**
Episode Length	1**	298.44**	298.44**	6.78**	.01**
Error	564	24828.18	44.02		
Total	569	109018.77			
<i>Dosage factor 1</i>					
# Diagnoses	2 <sup>a</sup>	34.01 <sup>a</sup>	17.00 <sup>a</sup>	2.88 <sup>a</sup>	.01 <sup>a</sup>
Age	1**	144.20**	144.20**	24.44**	.04**

Episode Length	1*	33.28*	33.48*	5.67*	.01*
Error	564	3328.38	5.90		
Total	569	11953.72			
<i>Dosage factor 2</i>					
# Diagnoses	2**	144.32**	72.16**	8.86**	.03**
Episode Length	1**	104.95**	104.95**	12.89**	.02**
Error	565	4601.88	8.15		
Total	569	16361.36			
<i>Dosage factor 3</i>					
Comorbidity	2**	59.40**	29.70**	6.22**	.02**
Episode Length	1**	35.93**	35.93**	7.52**	.01**
Error	565	2699.97	4.78		
Total	569	12527.27			

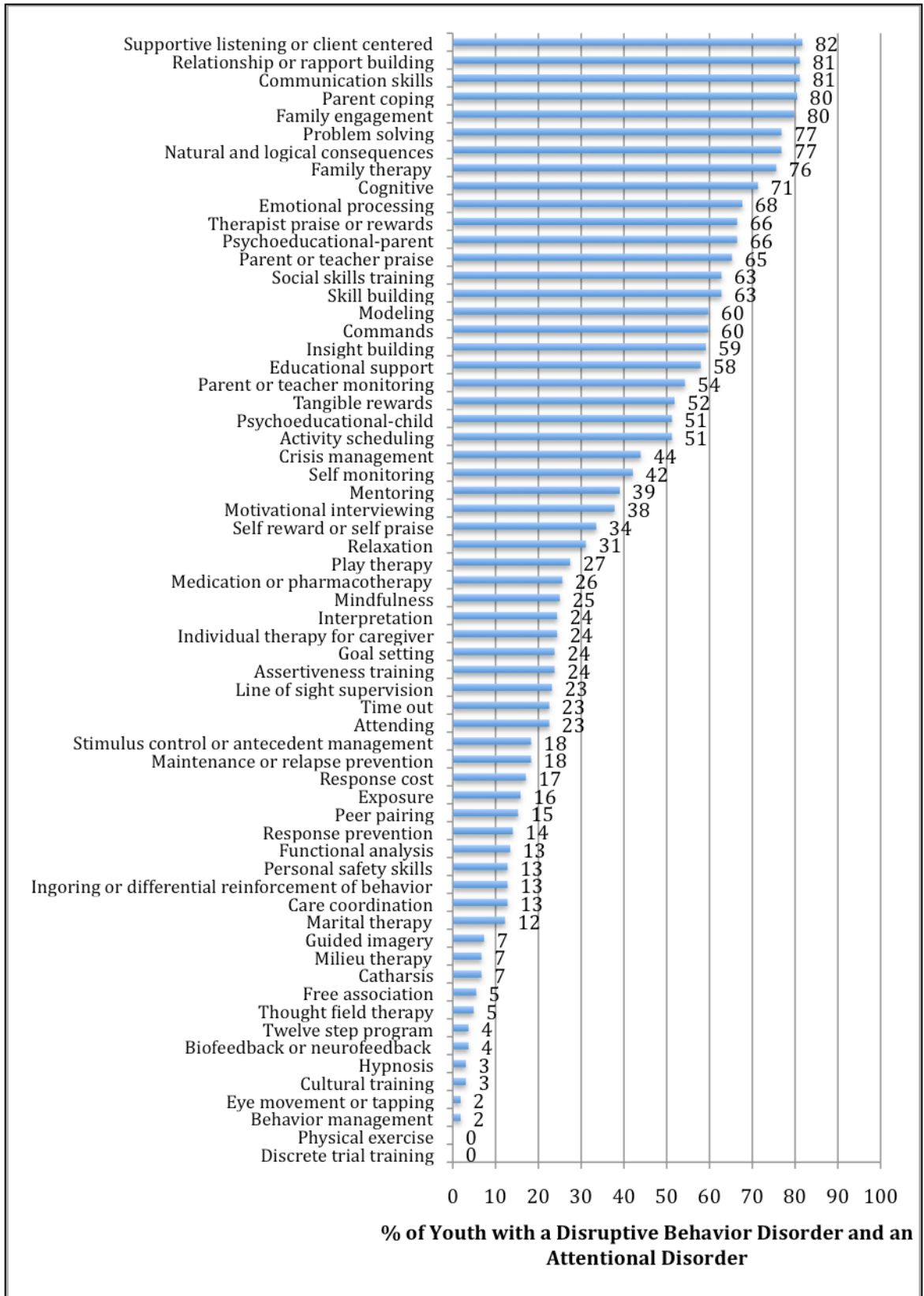
*Note.* \*\* $p < .01$ , \* $p < .05$ , <sup>a</sup>  $p = .06$ . Factor 1 (behavior management) includes communication skills, family engagement, skill building, therapist praise or rewards, parent or teacher praise, parent or teacher monitoring, social skills training, activity scheduling, modeling, tangible rewards, line of sight supervision, ignoring or differential reinforcement of other, time out, peer pairing, and response cost. Factor 2 (cognitive/self-coping) includes problem solving, cognitive, supportive listening or client centered, emotional processing, insight building social skills training, commands, self monitoring, motivational interviewing, mentoring, mindfulness, self reward or self praise, relaxation, assertiveness training, stimulus control or antecedent management, maintenance or relapse prevention, peer pairing, response prevention, and exposure. Factor 3 (family interventions) includes problem solving, communication skills, natural and logical consequences, psychoeducational-parent, insight building, parent or teacher praise, psychoeducational-child, commands, motivational interviewing, maintenance or relapse prevention, functional analysis, and marital therapy. Total includes practice elements from all factors and maintenance or relationship or rapport building, parent coping, educational support, crisis management, goal setting, attending, play therapy, care coordination, interpretation, individual therapy for caregiver, personal safety skills, medication or pharmacotherapy, guided imagery, milieu therapy, catharsis, twelve step program, biofeedback or neurofeedback, free association, thought field therapy, behavior management, cultural training, hypnosis, discrete trial training, eye movement or tapping, physical exercise.

### Appendix E

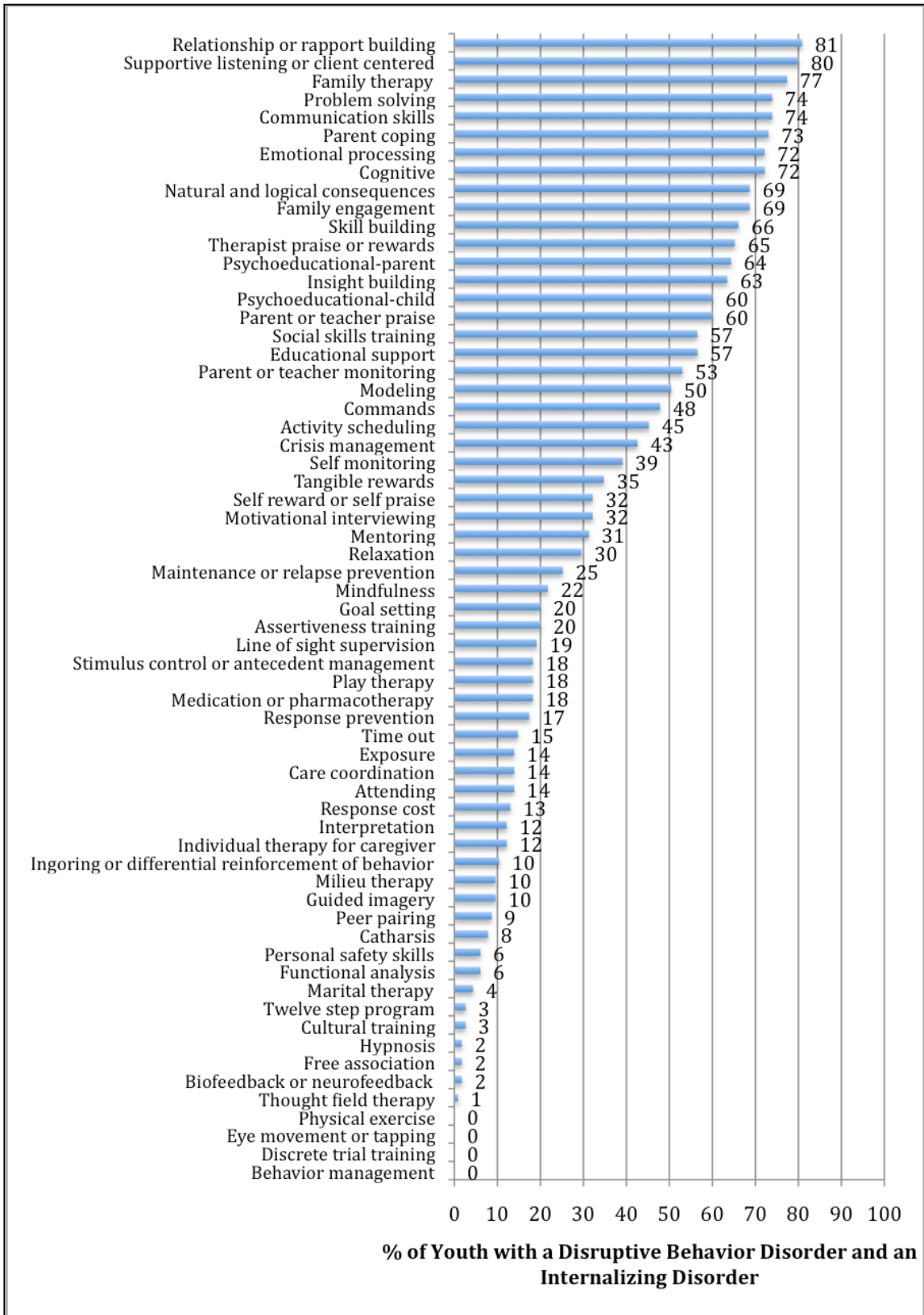
Percent of Youth with a Disruptive Behavior Disorder Only Who Received PEs One or More Times During Treatment.



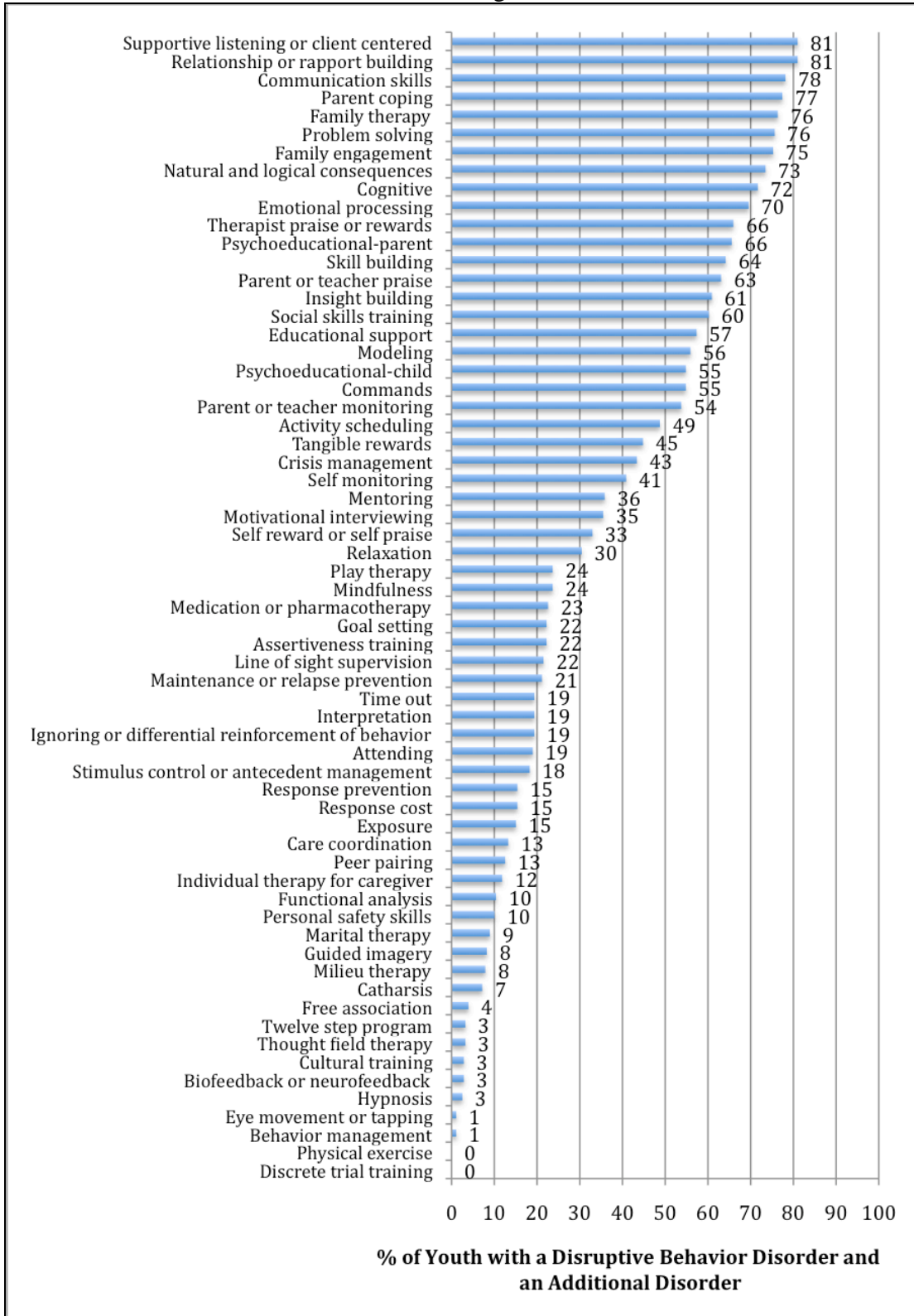
Appendix F  
 Percent of Youth with a Disruptive Behavior Disorder and an Attentional Disorder Who Received PEs One or More Times During Treatment.



Appendix G  
 Percent of Youth With a Disruptive Behavior Disorder and an Internalizing Disorder  
 Who Received PEs One or More Times During Treatment.

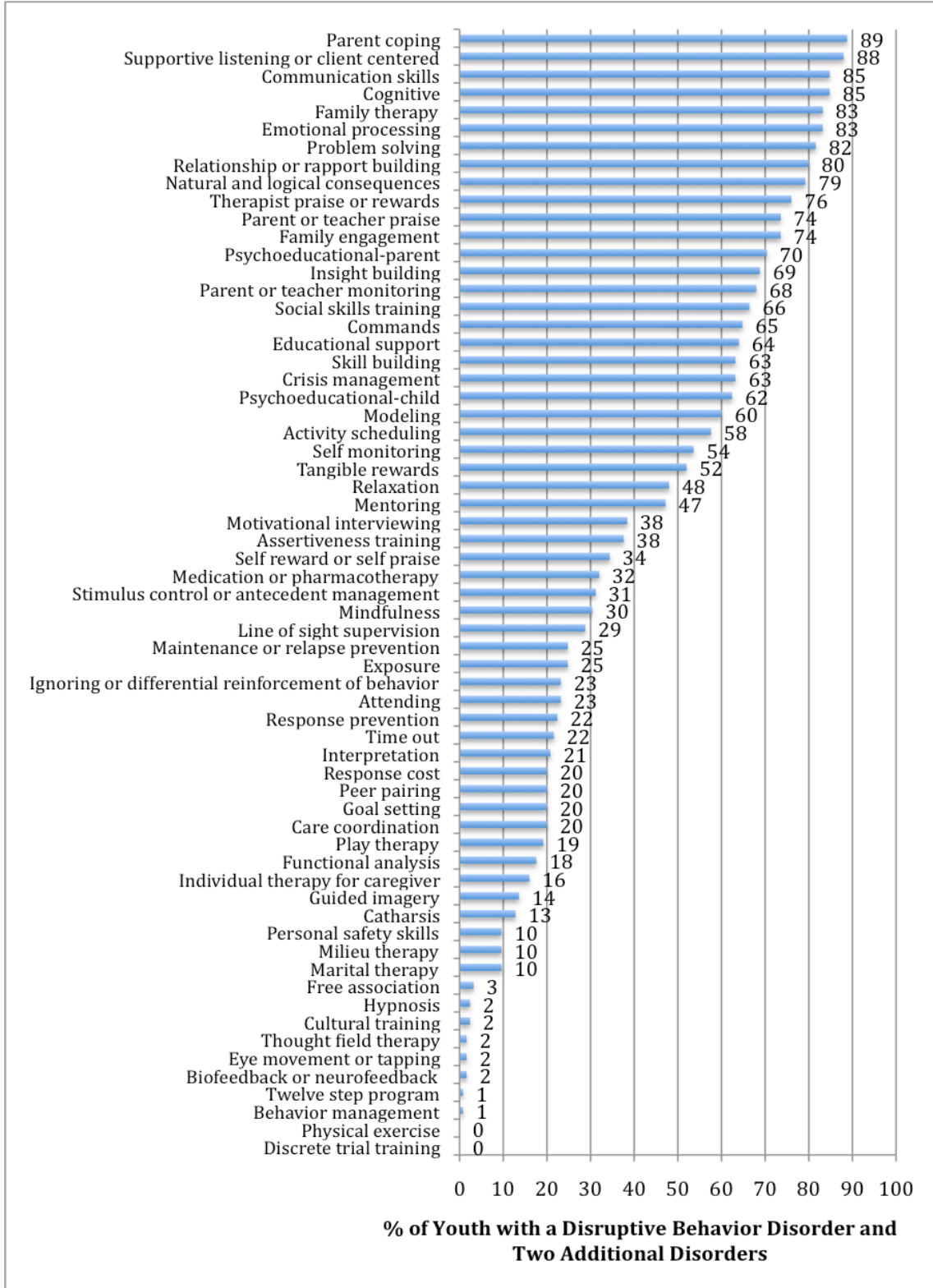


Appendix H  
 Percent of Youth with a Disruptive Behavior Disorder and One Additional Diagnoses  
 Who Received PEs One or More Times During Treatment.





**Appendix I**  
**Percent of Youth with a Disruptive Behavior Disorder and Two Additional Diagnoses**  
**Who Received PEs One or More Times During Treatment.**



**TABLES**

Table 1. *Youth Participant Demographics as a Function of Comorbidity Type (N=444).*

Characteristic	DBD Only n=165		DBD and an Attentional Disorder n=164		DBD and an Internalizing Disorder n=115	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
<i>Age</i>	M=13.51 (SD=3.56)		M=12.06 (SD=3.53)		M=13.94 (SD=2.93)	
<i>Gender</i>						
Female	54	33%	37	23%	52	45%
Male	111	67%	127	77%	63	55%
<i>Ethnicity</i>						
Multiracial	17	10%	18	11%	15	13%
Caucasian	8	5%	9	5%	4	3%
Native Hawaiian/Other Pacific Islander	8	5%	8	5%	5	4%
Asian	6	4%	5	3%	5	4%
African American	4	2.4%	1	.6%	0	0%
Other	1	.6%	2	1%	0	0%
American Indian/Alaska Native	1	.6%	0	0%	0	0%
Hispanic/Latino American	0	0%	1	.6%	1	1%
Not available	121	73%	120	73%	85	74%
<i>Length of treatment episode</i>	M=205.84 (SD=192.02)		M=249.03 (SD=238.73)		M=229.82 (SD=180.57)	
<i>CAFAS total at treatment start</i>	M=82.14 (SD=36.62)		M=82.00 (SD=30.69)		M=87.14 (SD=31.47)	

Table 2. *Youth Participant Demographics as a Function of Number of Diagnoses (N=569)*

Characteristic	DBD Only n=165		DBD and One Other Disorder n=279		DBD and Two Other Disorders n=125	
	<u>n</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>n</u>	<u>%</u>
<i>Age</i>	M=13.51 (SD=3.56)		M=12.84 (SD=3.42)		M=12.74 (SD=3.22)	
<i>Gender</i>						
Female	54	33%	89	32%	40	32%
Male	111	67%	190	68%	85	68%
<i>Ethnicity</i>						
Multiracial	17	10%	33	12%	18	14%
Caucasian	8	5%	13	5%	8	6%
Native Hawaiian/Other Pacific Islander	8	5%	13	5%	9	7%
Asian	6	4%	9	3%	6	5%
African American	4	2%	0	0%	1	1%
Other	1	1%	2	1%	1	1%
American Indian/Alaska Native	1	1%	0	0%	0	0%
Hispanic/Latino American	0	0%	2	1%	2	2%
Not available	121	73%	205	74%	80	64%
<i>Length of treatment episode</i>	M=205.84 (SD=192.02)		M=241.11 (SD=216.51)		M=253.86 (SD=178.93)	
<i>CAFAS total at treatment start</i>	M=82.14 (SD=36.62)		M=83.13 (SD=30.42)		M=94.17 (SD=24.29)	

Table 3. *Intercorrelations of Client Characteristics, Diversity and Dosage Scores (N=444).*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender <sup>a</sup>	1											
2. Age	-.11**	1										
3. Length of treatment	.16**	-.17**	1									
4. CAFASTotal8	.02	.16	-0.17	1								
5. Diversity total	.16**	-.22**	.45**	0.12	1							
6. Diversity factor 1	.17**	-.28**	.42**	0.08	.90**	1						
7. Diversity factor 2	.11*	-.05	.46**	0.05	.91**	.78**	1					
8. Diversity factor 3	.12*	-.13**	.38**	0.08	.85**	.71**	.80**	1				
9. Dosage total	.07	-.17**	.12**	-0.02	.78**	.71**	.73**	.69**	1			
10. Dosage factor 1	.09	-.25**	.11*	-0.15	.70**	.79**	.61**	.55**	.90**	1		
11. Dosage factor 2	.01	-.02	.16**	0.05	.70**	.58**	.79**	.64**	.91**	.74**	1	
12. Dosage factor 3	.04	-.07	.12*	-0.05	.63**	.53**	.63**	.78**	.86**	.70**	.81**	1

Note. <sup>a</sup>  $r_{pb}$ . \* $p < .05$ . \*\* $p < .01$ . Gender: Female=0, Male=1. Factor 1 (behavior management) includes communication skills, family engagement, skill building, therapist praise or rewards, parent or teacher praise, parent or teacher monitoring, social skills training, activity scheduling, modeling, tangible rewards, line of sight supervision, ignoring or differential reinforcement of other, time out, peer pairing, and response cost. Factor 2 (cognitive/self-coping) includes problem solving, cognitive, supportive listening or client centered, emotional processing, insight building social skills training, commands, self monitoring, motivational interviewing, mentoring, mindfulness, self reward or self praise, relaxation, assertiveness training, stimulus control or antecedent management, maintenance or relapse prevention, peer pairing, response prevention, and exposure. Factor 3 (family interventions) includes problem solving, communication skills, natural and logical consequences, psychoeducational-parent, insight building, parent or teacher praise, psychoeducational-child, commands, motivational interviewing, maintenance or relapse prevention, functional analysis, and marital therapy. Total includes practice elements from all factors and maintenance or relationship or rapport building, parent coping, educational support, crisis management, goal setting, attending, play therapy, care coordination, interpretation, individual therapy for caregiver, personal safety skills, medication or pharmacotherapy, guided imagery, milieu therapy, catharsis, twelve step program, biofeedback or neurofeedback, free association, thought field therapy, behavior management, cultural training, hypnosis, discrete trial training, eye movement or tapping, physical exercise.

Table 4. Means and Standard Deviations for All Practice Element Diversity and Dosage Scores as a Function of Type of Comorbidity (N=444)

Source	DBD Only n=165		DBD and an Externalizing Disorder n=164		DBD and an Internalizing Disorder n=115	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
<i>Diversity total</i>	0.32	0.15	0.36	0.17	0.33	0.16
<i>Diversity factor 1</i>	0.42	0.24	0.49	0.24	0.43	0.24
<i>Diversity factor 2</i>	0.39	0.21	0.42	0.23	0.40	0.22
<i>Diversity factor 3</i>	0.48	0.20	0.53	0.22	0.51	0.22
<i>Dosage total</i>	11.04	5.69	12.14	7.09	11.140	6.65
<i>Dosage factor 1</i>	3.50	2.39	4.04	2.56	3.46	2.47
<i>Dosage factor 2</i>	4.14	2.42	4.28	2.95	4.23	2.92
<i>Dosage factor 3</i>	3.80	1.95	4.15	2.23	3.91	2.26

*Note.* \* $p < .05$ . \*\* $p < .01$ . Factor 1 (behavior management) includes communication skills, family engagement, skill building, therapist praise or rewards, parent or teacher praise, parent or teacher monitoring, social skills training, activity scheduling, modeling, tangible rewards, line of sight supervision, ignoring or differential reinforcement of other, time out, peer pairing, and response cost. Factor 2 (cognitive/self-coping) includes problem solving, cognitive, supportive listening or client centered, emotional processing, insight building social skills training, commands, self monitoring, motivational interviewing, mentoring, mindfulness, self reward or self praise, relaxation, assertiveness training, stimulus control or antecedent management, maintenance or relapse prevention, peer pairing, response prevention, and exposure. Factor 3 (family interventions) includes problem solving, communication skills, natural and logical consequences, psychoeducational-parent, insight building, parent or teacher praise, psychoeducational-child, commands, motivational interviewing, maintenance or relapse prevention, functional analysis, and marital therapy. Total includes practice elements from all factors and maintenance or relationship or rapport building, parent coping, educational support, crisis management, goal setting, attending, play therapy, care coordination, interpretation, individual therapy for caregiver, personal safety skills, medication or pharmacotherapy, guided imagery, milieu therapy, catharsis, twelve step program, biofeedback or neurofeedback, free association, thought field therapy, behavior management, cultural training, hypnosis, discrete trial training, eye movement or tapping, physical exercise.

Table 5. Intercorrelations for Client Characteristics, Diversity, and Dosage Scores (N=569).

	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender <sup>a</sup>	1											
2. Age	-.13**	1										
3. Length of treatment	.15**	-.16**	1									
4. CAFASTotal8	0.01	0.11	-0.21	1								
5. Diversity total	.10*	-.19**	.45**	0.09	1							
6. Diversity factor 1	.13**	-.26**	.43**	0.07	.90**	1						
7. Diversity factor 2	0.06	-0.04	.45**	0.03	.92**	.78**	1					
8. Diversity factor 3	0.08	-.10*	.38**	0.05	.84**	.71**	.80**	1				
9. Dosage total	0.03	-.15**	.14**	-0.03	.78**	.70**	.74**	.69**	1			
10. Dosage factor 1	0.08	-.23**	.14**	-0.13	.70**	.79**	.62**	.55**	.90**	1		
11. Dosage factor 2	-0.01	-0.02	.16**	0.02	.71**	.58**	.79**	.64**	.92**	.76**	1	
12. Dosage factor 3	0.02	-0.06	.12**	-0.07	.64**	.53**	.63**	.78**	.87**	.71**	.82**	1

Note. <sup>a</sup>  $r_{pb}$ . \* $p < .05$ . \*\* $p < .01$ . Gender: Female=0, Male=1. Factor 1 (behavior management) includes communication skills, family engagement, skill building, therapist praise or rewards, parent or teacher praise, parent or teacher monitoring, social skills training, activity scheduling, modeling, tangible rewards, line of sight supervision, ignoring or differential reinforcement of other, time out, peer pairing, and response cost. Factor 2 (cognitive/self-coping) includes problem solving, cognitive, supportive listening or client centered, emotional processing, insight building social skills training, commands, self monitoring, motivational interviewing, mentoring, mindfulness, self reward or self praise, relaxation, assertiveness training, stimulus control or antecedent management, maintenance or relapse prevention, peer pairing, response prevention, and exposure. Factor 3 (family interventions) includes problem solving, communication skills, natural and logical consequences, psychoeducational-parent, insight building, parent or teacher praise, psychoeducational-child, commands, motivational interviewing, maintenance or relapse prevention, functional analysis, and marital therapy. Total includes practice elements from all factors and maintenance or relationship or rapport building, parent coping, educational support, crisis management, goal setting, attending, play therapy, care coordination, interpretation, individual therapy for caregiver, personal safety skills, medication or pharmacotherapy, guided imagery, milieu therapy, catharsis, twelve step program, biofeedback or neurofeedback, free association, thought field therapy, behavior management, cultural training, hypnosis, discrete trial training, eye movement or tapping, physical exercise.

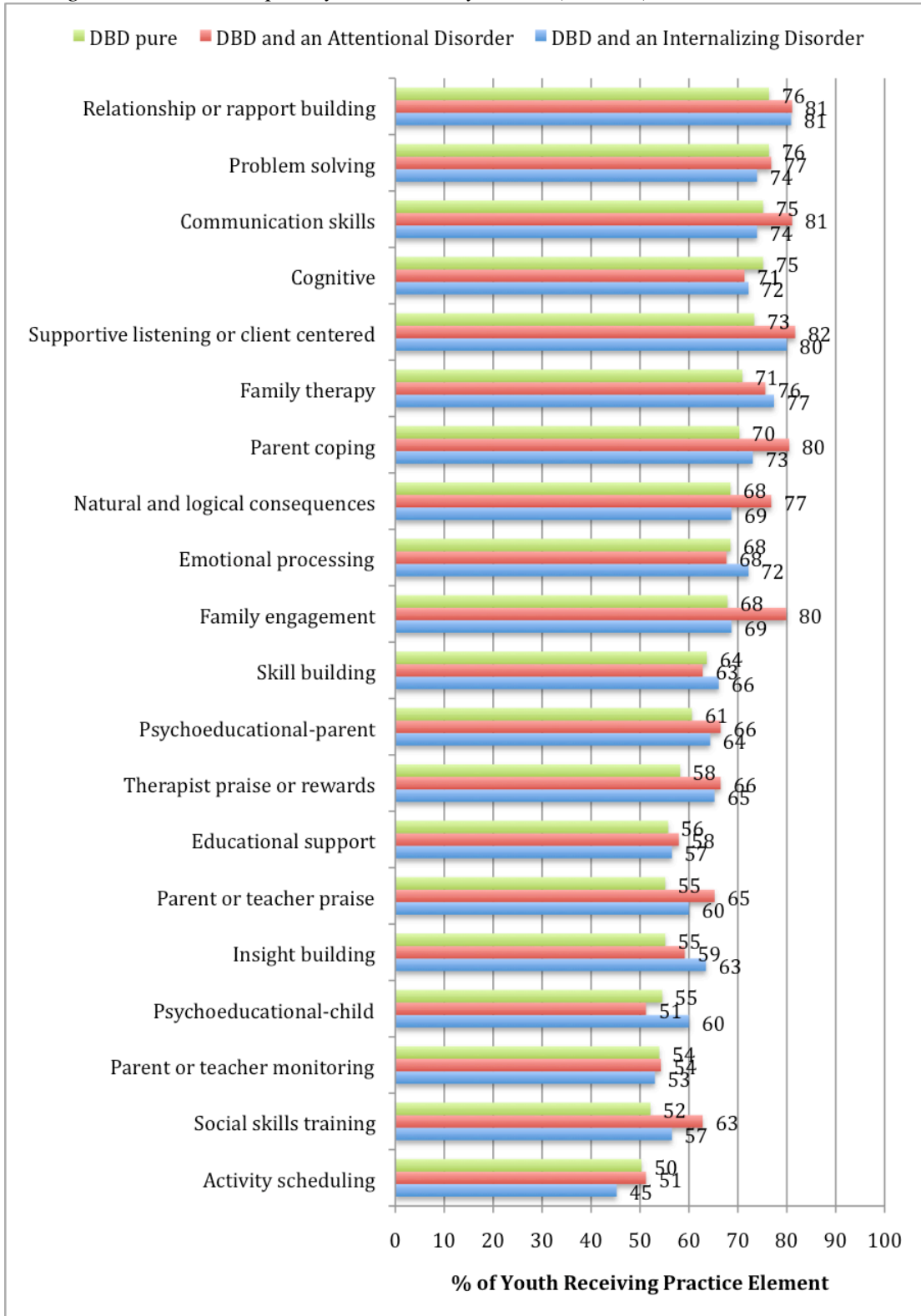
Table 6. Means and Standard Deviations for All Practice Element Diversity and Dosage Scores as a Function of Number of Diagnoses (N=569)

Source	DBD Only n=165		DBD and One Other Disorder n=279		DBD and Two Other Disorders n=125	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
<i>Diversity total</i>	.32**	.15	.34**	.16	.40**	.15
<i>Diversity factor 1</i>	.42*	.24	.47*	.24	.53*	.22
<i>Diversity factor 2</i>	.39**	.21	.41**	.22	.50**	.21
<i>Diversity factor 3</i>	.48**	.20	.52**	.22	.58**	.20
<i>Dosage total</i>	11.04**	5.69	11.73**	6.91	14.11**	7.51
<i>Dosage factor 1</i>	3.50 <sup>a</sup>	2.39	3.80 <sup>a</sup>	2.53	4.34 <sup>a</sup>	2.55
<i>Dosage factor 2</i>	4.14**	2.41	4.26**	2.93	5.49**	3.30
<i>Dosage factor 3</i>	3.80**	1.95	4.06**	2.24	4.75**	2.40

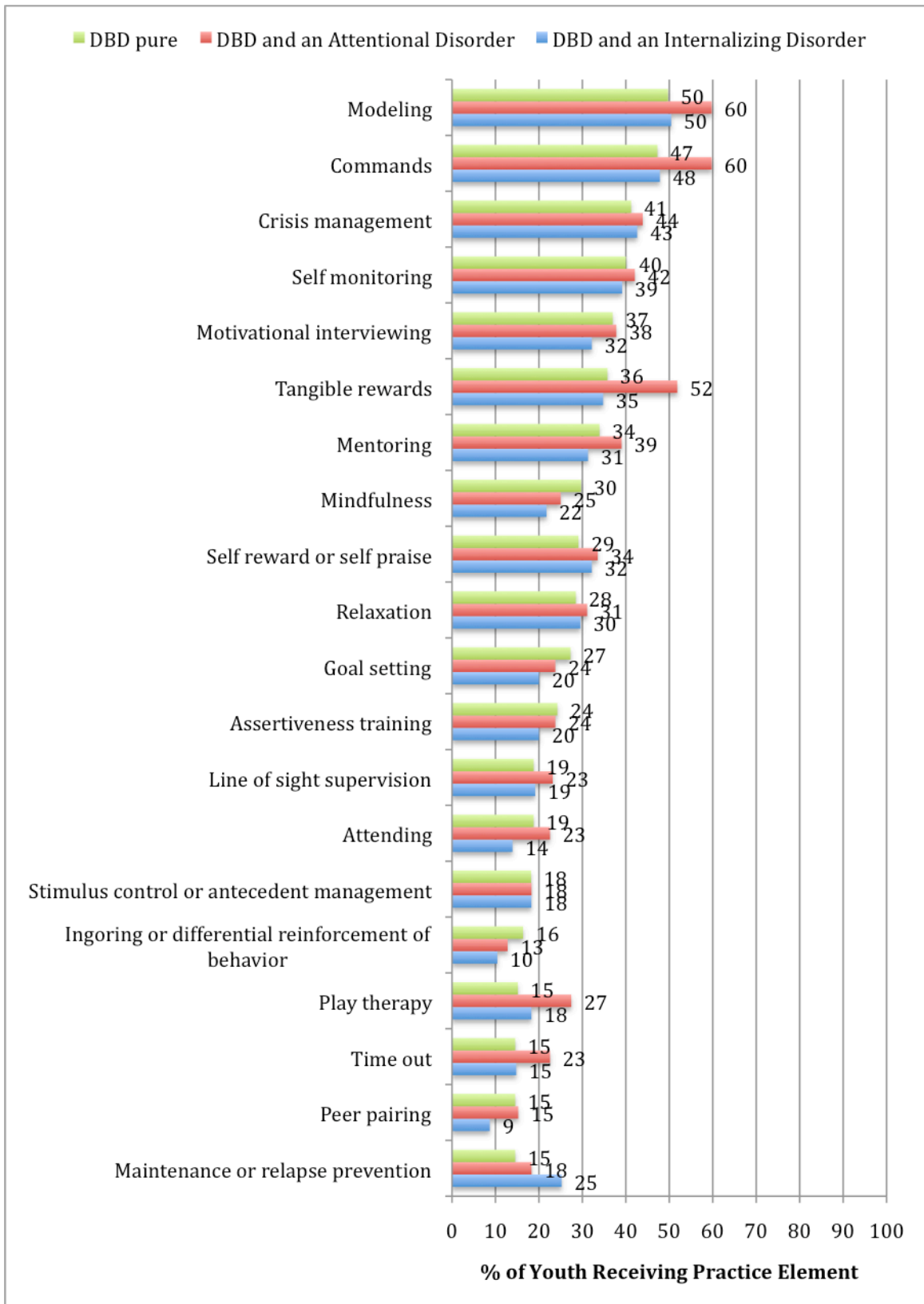
Note. Note. \*\* $p < .01$ . \* $p < .05$ . <sup>a</sup> $p = .06$ . Gender: Female=0, Male=1. Factor 1 (behavior management) includes communication skills, family engagement, skill building, therapist praise or rewards, parent or teacher praise, parent or teacher monitoring, social skills training, activity scheduling, modeling, tangible rewards, line of sight supervision, ignoring or differential reinforcement of other, time out, peer pairing, and response cost. Factor 2 (cognitive/self-coping) includes problem solving, cognitive, supportive listening or client centered, emotional processing, insight building social skills training, commands, self monitoring, motivational interviewing, mentoring, mindfulness, self reward or self praise, relaxation, assertiveness training, stimulus control or antecedent management, maintenance or relapse prevention, peer pairing, response prevention, and exposure. Factor 3 (family interventions) includes problem solving, communication skills, natural and logical consequences, psychoeducational-parent, insight building, parent or teacher praise, psychoeducational-child, commands, motivational interviewing, maintenance or relapse prevention, functional analysis, and marital therapy. Total includes practice elements from all factors and maintenance or relationship or rapport building, parent coping, educational support, crisis management, goal setting, attending, play therapy, care coordination, interpretation, individual therapy for caregiver, personal safety skills, medication or pharmacotherapy, guided imagery, milieu therapy, catharsis, twelve step program, biofeedback or neurofeedback, free association, thought field therapy, behavior management, cultural training, hypnosis, discrete trial training, eye movement or tapping, physical exercise.

## FIGURES

Figure 1. *Proportion of Youth Who Received Practice Elements One or More Times During Treatment, Grouped by Comorbidity Status (N=444)*







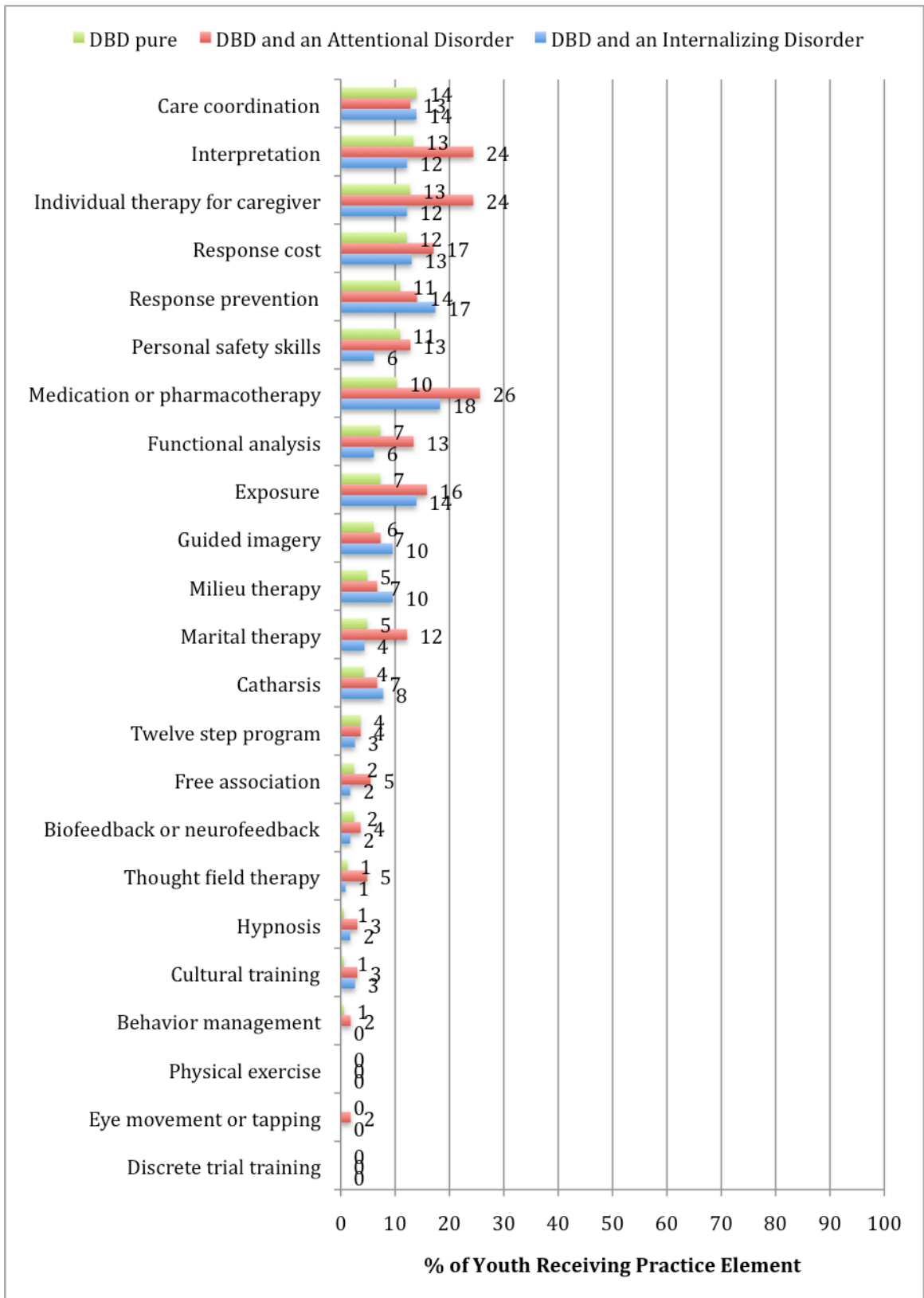


Figure 2. Proportion of Youth Who Received Practice Elements One or More Times in Treatment, Grouped by Number of Diagnoses (N=569)

