

**A META-ANALYSIS OF COGNITIVE INTERVENTION,
PARENT MANAGEMENT TRAINING, AND
PSYCHOPHARMACOLOGICAL INTERVENTION IN THE
TREATMENT OF CONDUCT DISORDER**

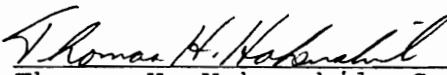
by

David W. Anderson

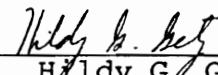
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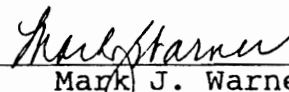
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ABSTRACT

Conduct disorder in children and adolescents has developed into a very costly problem with severe negative consequences to individuals, families, and communities. A void exists in the literature in that no summaries have been found which compare the effectiveness of the leading treatment modalities for conduct disorder.

The purpose of this study is to conduct a meta-analysis comparing three psychotherapeutic interventions for the treatment of conduct disorders in children and adolescents: 1) cognitive interventions, 2) parent management training, and 3) psychopharmacological intervention (i.e. the use of lithium carbonate and the use of stimulants [e.g., methylphenidate, dextroamphetamine, and pemoline]). The inclusion criteria for this meta-analysis accepted 26 studies for data collection and analysis.

The results indicate that the average effect sizes for cognitive intervention, parent management training, and

psychopharmacological intervention across control types were 0.948, 1.070, and 1.061 respectively. The total averaged effect size of each treatment modality was compared and applied to a test of significance. The test of significance failed to reveal a significant difference ($p > .05$). Although it is difficult to define exactly how conduct disorder improved in subjects, it can be said that the average subject receiving treatment is better off than 83.1% of the untreated controls ($z = 0.96$).

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I dedicate this project to my many adolescent friends who have taken the risk to share their lives with me, and to adolescents of every generation who deserve respect, attention, and care.

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Chapter 1

Introduction

Purpose

The purpose of this study is to conduct a meta-analysis comparing three psychotherapeutic interventions for the treatment of conduct disorders in children and adolescents: 1) cognitive interventions, 2) parent management training, and 3) psychopharmacological intervention (i.e. the use of lithium carbonate and the use of stimulants [e.g., methylphenidate, dextroamphetamine, and pemoline]). These three interventions were chosen for this meta-analysis because the majority of research investigating the efficacy of treatment outcomes of children and adolescents with conduct disorder focuses on these three treatment modalities (Morris, 1993).

Gene Glass (1976) refers to meta-analysis as the "analysis of analyses...the statistical analysis of a large collection of analyses from individual studies for the purpose of integrating the findings." This study will use the techniques of Smith and Glass (1977), as well as, the techniques advocated by Robert Rosenthal (1984), and Fredric Wolf (1986).

Problem Statement and Rationale for the Study

Conduct disorder in children and adolescents has developed into a very costly problem with severe negative consequences to individuals, families, and communities (Miller, 1994). Understanding conduct disorder and helping families with children who have conduct disorder has become extremely urgent, in light of the fact that aggressive children run a higher risk of experiencing peer rejection, being abused by their parents, dropping out of school, abusing alcohol and drugs, juvenile delinquency, adult crime, antisocial personality, marital disruption, interpersonal problems and diminished physical health (Webster-Stratton and Herbert, 1993). Although the incidence of conduct disorder is high, the lack of double-blind, placebo-controlled treatment studies is striking (Lavin and Rifkin, 1993). In addition, a void exists in the literature in that no systematic research summaries have been found which compare the effectiveness of the leading treatment modalities for conduct disorder. For the purpose of this study, the definition of conduct disorder is the diagnostic criteria outlined by the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III, DSM-III-R, and DSM-IV) (see Appendix A).

The results of this study will replace some of the void in the literature that currently exists. Given that conduct

disorder in children and adolescents is on the rise, statistical evidence in the area of treatment effectiveness could prove helpful to clinicians.

Treatment outcome studies have become extremely important to therapists due to the trends in the managed care industry. Clinicians are being challenged by the managed care reviewer to document a clear rationale for their proposed treatment plan. The results of this study will aid clinicians by offering statistical evidence to support their treatment planning.

Research Question

The research question in this study will attempt to summarize research outcomes of three major interventions for children and adolescents with conduct disorder. The following research question will be investigated:

Among the three treatment interventions (i.e. cognitive interventions, parent management training, and psychopharmacological interventions), which does the literature show to have the greatest effect size in treating conduct disorder in children and adolescents?

Chapter 2

Review of Literature

Conduct Disorder

Conduct disorder is an Axis I diagnoses, meaning that it is considered a clinical disorder, and most likely the principle reason for an individual seeking treatment (DSM-IV APA, 1994). The prevalence of conduct disorder among children and adolescents from ages 4 to 18 is estimated to be approximately 2% to 6%, this means that in the United States, between 1.3 and 3.8 million children are diagnosed with the disorder (Kazdin, 1995). Moreover, aggressive and antisocial behaviors in children and adolescents account for close to 50% of all clinic referrals (Robins, 1981).

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV, 1994) (hereafter referred to as the DSM-IV) characterizes conduct disorder as a persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated. Antisocial behaviors such as aggressive acts, theft, vandalism, lying, truancy, running away, and cruelty to people or animals are some of the criteria needed to make the diagnosis (see Appendix A for a complete diagnostic criteria

as outlined by the DSM-IV). It is important to emphasize the fact that conduct disorder includes a constellation of behaviors, and the presence of any single behavior alone is insufficient to assert the diagnosis (Kazdin, 1987).

The DSM-IV (1994) suggests that individuals with conduct disorder have many associated descriptive features which include: (1) a lack of empathy or concern for the feelings, wishes and well-being of others, (2) frequent misinterpretations of the intentions of others as being more hostile and threatening than is actually the case, resulting in what they deem as justified aggression, (3) callousness and lack of appropriate feelings of guilt or remorse, (4) pretentious remorse, (5) blame toward others for their own misdeeds, (6) low self-esteem, although the presentation is "toughness", (7) poor frustration tolerance, (8) irritability, (9) temper outbursts, (10) recklessness, and (11) early onset of sexual behavior, drinking, smoking, and use of illegal drugs.

Conduct disorder is 3 to 4 times more prevalent in boys than girls (Zoccolollo, 1993). Kazdin (1995), provides an excellent rationale for understanding the function of age and gender in the diagnosis of conduct disorder. He suggests that differences between sexes is subject to many different interpretations, including bias in the way in which conduct disorder is defined. One example is the developmental

differences of boys and girls in their behavior (e.g. engaging in rough and tumble play, bullying others, not complying to requests, and fighting). In light of these behavioral differences and others, perhaps researchers and clinicians need to interpret the specific behavior and its frequency differently across gender lines, thus creating shifts in clinical significance. For example, when a parent defines the presenting problem of their 12 year old daughter as emotionally disengaged, lying to avoid consequences, argumentative and lacking remorse, the clinician must view those symptoms as clinically significant in relation to diagnosing conduct disorder. Although the parents of this young female are not reporting "aggressive" behavior as outlined in the DSM-IV (1994) for conduct disorder, this diagnosis must be considered. In other words, cultural and gender norms have a function in how conduct disordered behavior is presented. This is not to say that females never engage in aggressive behavior typified by their male counterparts, only that clinicians must be careful not to rule out conduct disorder in females simply because the "male" aggression is not present.

Rates of conduct disorder are usually higher for adolescents (7% for 12 to 16 years of age) than for children (4% for 4 to 11 years of age) (Kazdin, 1995). The DSM-IV (1994) documents the diagnostic criteria for conduct disorder

under the *Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence* section, suggesting that conduct disorder is most frequently presented during these developmental periods. However, patterns of aggressive, antisocial, and disruptive behavior can be evident over the life span (Kazdin, 1995). Diagnosing conduct disorder becomes difficult for clinicians because antisocial behavior may present itself differently as a function of age. For example, stealing from others, robbing a store, running away overnight, and forcing someone into sexual activity are easily seen in youths 7 to 12 years old, but not in infants (Kazdin, 1995). Therefore, when using diagnostic tools such as the DSM-IV, researchers and clinicians must crystallize within their own conceptual framework of conduct disorder, what types of behaviors are age probable.

Presently, there is much debate over the clinical distinctions between conduct disorder and attention deficit disorder (Biederman, Newcorn, and Sprich, 1991). Comorbidity among the disruptive disorders is a common occurrence (Abikoff and Klein, 1992). Estimates of co-occurrence for attention deficit hyperactivity disorder and conduct disorder has been reported as high as 90% (Abikoff, Ganeles, Klass, and Klien, 1987). Although the DSM-IV (1994) recognizes both attention-deficit disorder and conduct disorder as having distinct clinical features, this researcher suggests that

treatment outcome studies that include comorbid subjects often fail to measure dependent variables that are all inclusive (i.e. aggression and impulsivity combined). The implications of comorbidity for treating children and adolescents is not specifically known, even though an abundance of literature is currently available (Biederman et al., 1991). This meta-analysis will review studies that used comorbid subjects (i.e., conduct disorder and attention deficit disorder), due to the high incidence of co-occurrence reported by Abikoff et al.(1987). Although individuals with conduct disorder often experience other clinical problems (i.e. depression, substance abuse and dependency, and oppositional defiant disorder) (Lock and Strauss, 1994), conduct disorder is the central feature of this study.

The issue of comorbidity triggers fundamental questions as to whether or not psychological disorders are discrete entities (Hinshaw, 1987). Regarding the relationship of conduct disorder and attention deficit disorder, there are two basic positions on the subject: (1) conduct disorder and attention deficit disorder are completely overlapping, and (2) conduct disorder and attention deficit disorder are slightly overlapping or discrete (Biederman et al., 1991). In addition, studies of community and clinic samples reveal that a substantial percentage of young people diagnosed with

conduct disorder or attention deficit disorder can also meet the criteria for the other disorder (Kazdin, 1995).

The DSM-IV characterizes attention-deficit hyperactivity disorder with two categories: (1) Inattention- often fails to give close attention to details, difficulty sustaining attention with tasks, does not seem to listen when spoken to directly, and difficulty organizing activities; and (2) Hyperactivity/Impulsivity- often fidgets with hands or feet, difficulty remaining in seat when expected, difficulty playing quietly, feelings of restlessness, difficulty awaiting turn during activities, and intrudes on others (see Appendix B for complete diagnostic criteria as outlined by the DSM-IV).

Although debates continue concerning the two basic positions stated previously, the majority of the evidence seems to indicate that conduct disorder and attention deficit disorder are at least partially independent diagnostic categories. Moreover, it seems that issues such as cognitive dysfunction for attention deficit hyperactivity disorder versus aggression and antisocial behavior for conduct disorder, is a principle difference between the two disorders (Biederman et al., 1991).

Meta-Analysis

Eighteen years ago, Mary L. Smith and Gene V. Glass presented their paper "Meta-analysis of Psychotherapy Outcome Studies" (1977) to the research and clinical communities. The Smith and Glass study significantly influenced how researchers integrated cumulative knowledge (Duncan, 1994). This landmark study provided convincing evidence that individuals who engaged in psychotherapy, were better off than 75% of the untreated individuals (Smith and Glass, 1977). For the most part, it uses numbers and statistical methods in a practical manner, namely, for organizing and extracting information from large bodies of data that are difficult to comprehend otherwise (Glass, McGaw, and Smith, 1981).

Baer and Nietzel (1991) conducted a meta-analysis which reviewed 36 outcome studies that used cognitive and/or behavioral treatments to reduce impulsivity in children and adolescents. Treatments included techniques such as: self-statement modification, reinforcement contingencies, modeling, and problem-solving training. Subjects were characterized as impulsive but varied in clinical diagnosis, including attention-deficit hyperactivity disorder, conduct disorder, behavior disorder, and learning disability. The meta-analysis showed that interventions for impulsivity

rendered improvements of approximately one-third to three-quarters of a standard deviation relative to untreated control groups.

Durlak, Fuhrman and Lampman (1991) conducted a meta-analysis designed to identify variables that moderate the outcomes of cognitive-behavior therapy for dysfunctional children. The analysis confirmed their hypothesis that a child's cognitive developmental level would moderate treatment effectiveness. The cognitive-behavioral treatment effect size (0.92) for children functioning at the formal operational level (ages 11-13 years old) was nearly twice that for children at less advanced cognitive stages (for ages 5-7, 0.57; for ages 7-11, 0.55). The cognitive-developmental level was the only significant factor to emerge from their study. Control groups showed little change over time, whereas treated children showed significant improvement with cognitive interventions. These results were particularly impressive because the average length of treatment for the children was fewer than 10 sessions.

Duncan (1994) conducted a meta-analysis which compared three psychotherapies (i.e., cognitive therapy, behavioral therapy, and cognitive-behavioral therapy) to Fluoxetine (Prozac) in treating unipolar major depression. The statistical results of her study indicated that prozac is more effective than cognitive therapy, behavior therapy, and

cognitive-behavior therapy in treating unipolar major depression. The psychotherapy effect size under controlled conditions was .201, and the effect size with subjects as own control was 1.7. The effect size for Prozac under controlled conditions was 3.07, and 4.35 under subjects as own control conditions. Among the three psychotherapies reviewed in her meta-analysis, cognitive therapy yielded the greatest effect size. Finally, Duncan's meta-analysis reveals that the average client receiving therapy was better off than 84% of the untreated controls.

Unlike Smith and Glass' (1977) original meta-analysis that compared the effectiveness of ten types of therapy outcomes (Duncan, 1994), this meta-analysis compared the effectiveness of three interventions (cognitive interventions, parent management training, and psychopharmacological intervention).

Psychotherapeutic Interventions

As mentioned earlier, cognitive interventions, parent management training, and psychopharmacological interventions were chosen for this study due to their frequent occurrences in the outcome literature (Morris, 1993). Moreover, one of the leading experts in the area of conduct disorder, Alan Kazdin (1995), lists cognitive interventions and parent management training as two of the most "highly promising"

approaches. Cognitive interventions and parent management training have shown to be more effective than client-centered, and relationship-based treatment (Kazdin, 1995). However, there are other factors that provide a rationale for focusing on these treatment interventions. First, the emergence of "managed care" into mental health services has significantly changed how clinicians provide treatment to individuals. Therapists have been forced to diminish substantially the length of treatment for individuals, and have had to use treatment modalities designed to address external symptoms only (i.e. the expression of anger, academic performance, etc.). Cognitive interventions and parent management training are viewed as specific problem focused interventions. Managed care reviewers are less likely to allow the therapist the time required to utilize insight oriented treatment modalities such as psychodynamic therapy. Second, as mentioned earlier, the behaviors of children and adolescents with conduct disorder are very dangerous and sometimes lethal. Although there is a lack of evidence that any of these interventions ameliorate the poor long-term prognosis of conduct disorder (Kazdin, 1995), the three therapies under investigation do focus on the current "crisis behavior" that can potentially threaten an individual's life.

Cognitive Interventions

The cognitive movement in psychotherapy has been increasingly significant over recent decades (Kuehlwein and Rosen, 1993). Interventions that are designed to change the way one thinks about self, others, or life situations are called cognitive interventions (Cormier and Hackney, 1993). Albert Ellis is the founder of Rational-Emotive therapy (RET). The key concept of rational-emotive theory is that dysfunctional emotions and behaviors are a result of inaccurate and dysfunctional beliefs or thoughts (Corey, 1991).

Cognitive-behavior therapy focuses on how an individual's "self-talk" affects behavior. The awareness of irrational or negative self-statements is not sufficient to produce lasting change, unless the individual also learns to create incompatible self-instruction and behaviors (Meichenbaum, 1977). In light of impulsive behaviors (an associated feature of conduct disorder [DSM-IV APA, 1994]) being viewed as a result of an individual failing to "think" about potential consequences, impulsivity can be conceptualized as a cognitive deficit (Baer and Nietzel, 1991). Cognitive problem-solving skills training (PSST) is a framework that utilizes the principles of cognitive theory. Kazdin (1995) suggests that the primary focus is on the thought processes of an individual in a given situation

rather than a specific act. Children are taught to use a step-by-step approach to solve interpersonal problems.

Currently, there are several programs designed to teach children and adolescents ways to solve interpersonal problems. Norris (1993) implemented and evaluated the effects of the treatment program "Self-Management", which is a 12-week program based on the principles of Rational Emotive Theory. Participants in the program were treated during the school day, twice a week for one hour. Assessment, relationship building, and personal issues relevant to adolescents were the focus during the first two weeks of the program. The following weeks of the program addressed the self-defeating thoughts that lead to the emotional disturbances (namely; anger and depression). Students also learned concepts such as low frustration tolerance, "awfulizing", self-rating, automatic thoughts, demandingness, and irrational beliefs. The program used an eight-part video series called, "You Can Do It! Motivational Program". This Rational Emotive Theory based program helped students develop good feelings about themselves, have a strong belief in their ability to succeed, develop a desire to achieve goals, and learn to relate to others in a patient and encouraging manner. Norris (1993) reports that his intervention with the conduct disordered adolescents reduced their level of anger, depression, and irrational thinking. Thus, Norris concludes

that the view postulated by Albert Ellis (Corey, 1991) that changing how an individual "thinks" will create different feelings and actions, is applicable for adolescents with conduct disorder.

Camp, Blom, Hebert, and van Doorninck (1977) developed the "Think Aloud" program for extremely aggressive 6 to 8 year-old boys. Their training procedure, modeled after the work of Meichenbaum and Goodman (1971), placed a heavy emphasis on modeling cognitive techniques. Moreover, the following four questions were addressed; (1) What is my problem?, (2) What is my plan?, (3) Am I using my plan?, and (4) How did I do?. The program instructors modeled the use of these questions, followed by encouraging the children to imitate what they observed. The main emphasis of the program is to teach children sound cognitive processes by having them "think aloud".

The utilization of cognitive interventions has gained momentum over the past decade. Cognitive based programs such as the "Think Aloud" and "You Can Do It! Motivational Program" are two of many treatment programs offered today. The cognitive therapies are being increasingly enhanced as scholars and practitioners dedicate their work toward evolving them to greater effectiveness (Kuehlwein and Rosen, 1993).

Parent Management Training

Parent management training has been followed as one of the major strategies in helping parents to alter the reinforcement contingencies that support the antisocial behavior in their children. The parent management training (sometimes called "parent skills training"), was developed out of the social learning theory, in an effort to intervene in the coercive cycle between parent and child. The coercive cycle of interaction between children and parents plays a significant role in the development and maintenance of conduct disorder (Armstrong, McEvoy, Melville, Russell, and Wilks, 1994). Research indicates that parents of conduct-disordered children often have a deficit in effective parenting skills (Webster-Stratton and Herbert, 1993). In their paper "What Really Happens in Parent Training" (1993), Webster-Stratton and Herbert reviewed over one hundred hours of group discussion therapy sessions in an attempt to discover the therapeutic process involved in a parent-training program. Their study revealed that the therapist had six primary roles that included; *building a supportive relationship, empowering parents, teaching, interpreting, leading and challenging, and prophesizing* [sic]. A series of studies which were led by Carol Webster-Stratton in 1981, 1984, 1988, and 1989, revealed that therapist-led parent group discussion training was not only effective in reducing

child conduct problems and improving parenting attitudes, but they were also cost effective in the delivery of the service (Webster-Stratton, 1993). Behavioral family therapy with children of conduct disorders is a framework that developed almost exclusively out of the parent-training model (Griest and Wells, 1983), and is certainly worth review.

The behavioral family therapy model operates from the assumption that child behaviors are shaped and maintained by forces within the natural environment (Gordon and Davidson, 1981). Behavioral family therapy takes into account parents' functioning (i.e., attitudes, psychopathology, marital relationships, etc.), relational dynamics within the entire family system, and relational dynamics in the community, which are often ignored in the "pure" parent training model (Griest and Wells, 1983). More recent parent management training intervention models do include a broader based conceptual framework advocated by Griest and Wells (1983), which is evident in the work described earlier by Webster-Stratton and Herbert (1993).

Webster-Stratton and Hammond (1990) evaluated the predictors of treatment outcome in parent management training. Their study focused on the relative contribution of the psychological, interparental, and extrafamilial or environmental variables related to short-term and long-term treatment of families with conduct disordered children. The

first important finding of this study is that both maternal and paternal depression are predictors of how parents describe problem behavior with their children following treatment (e.g., depressed parents tend to give a negative assessment of child adjustment following treatment). Moreover, single-parent status and marital conflict predict greater child deviance in the home. The study also evaluated predictors in a one year follow-up. The most significant finding was that negative life stress during the year following treatment was as significant as depression in regard to the parental assessment of negative child behavior. In addition, socioeconomic status was a significant predictor for negative behavioral interactions with fathers. For children, marital status was the most significant predictor of negative behaviors in children toward their mothers (e.g., children in single-parent homes are more oppositional toward their mothers), while the amount of negative life stress made a greater contribution to children's negative behavior toward their fathers.

Studies such as the Webster-Stratton and Hammond study make significant contributions to the treatment of conduct disorders. First, they offer an empirical reason for providing ongoing expanded therapy for families that focus on ecological needs (i.e., crisis management, depression, problem-solving, financial planning, and marital therapy)

(Webster-Stratton and Hammond, 1990). Secondly, they provide researchers insight when controlling for extraneous variables such as parental depression or negative life stress.

Psychopharmacological Intervention

The sympathomimetic drugs (stimulants) used in the psychopharmacological treatment of conduct disorder are methylphenidate (Ritalin), dextroamphetamine (Dexedrine), and pemoline (Cylert) (Kaplan and Sadock, 1993). Although the use of stimulants for children and adolescents with attention-deficit disorder is on the increase, few studies address those adolescents who meet criteria for both conduct disorder and attention-deficit disorder (Kaplan, Busar, Kupietz, Segal, and Wassermann, 1990).

The molecular structure of methylphenidate is similar to that of amphetamine, which causes dopamine to be released from presynaptic neurons, and also inhibits the reuptake of released dopamine back into the presynaptic neurons. The result of this process is stimulation of many brain regions, particularly the ascending reticular activating system (Kaplan and Sadock, 1993). Psychiatrist David Hartman (personal communication, November 16, 1995), favors the theory that the ascending reticular activating system (when stimulated by sympathomimetic drugs) is able to control the

impulsive regions of the brain, thus, enhancing an individual's ability to control impulsive behavior.

As with all drugs, weighing the adverse effects against the desired outcome is essential. Some of the most common adverse effects associated with stimulants include; anxiety, irritability, insomnia, and decreased appetite. A less common adverse effect is the development of movement disorders, such as tics or Tourette's disorder like symptoms (Kaplan and Sadock, 1993). Another concern with the use of stimulants in treating children and adolescents is the potential for drug abuse. The relatively new awareness in the adolescent culture that "snorting" methylphenidate can cause an immediate "high" is of great concern. Stimulants are much like lithium in that there is no absolute explanation as to how they serve to reduce aggression and attention deficits.

In 1949 a psychiatrist from Australia, John Cade, discovered that lithium, a common salt, caused sedation in guinea pigs. He then administered lithium to patients with manic symptoms and noticed a dramatic calming effect (Burns, 1980). Lithium continues to be widely used by psychiatrists for treating Bipolar Disorder, Schizoaffective Disorder, Major Depression (as an adjuvant treatment to tricyclics and tetracyclics), and Schizophrenia (co-administered with anti-psychotics) (Kaplan and Sadock, 1993). Research is currently

Summary

The review of literature reveals there is no single widely accepted treatment for conduct disorder in children and adolescents. There are many factors that make treating conduct disorder and researching effective treatment outcomes difficult. Issues such as the implications of comorbidity, family and other environmental factors, and the lack of clear diagnostic criteria account for much of the difficulty. This study will contribute to the field of research by offering the first meta-analysis of its kind that is designed to summarize research outcomes of three major interventions for conduct disorder.

Chapter 3

Methodology

Studies

A computer search (using ERIC, PsycLIT, Sociofile, MEDLINE, FastDoc, and Dissertation Abstracts) of titles and abstracts using the key words; children, adolescents, conduct, disorder, treatment, and outcome was conducted. Each data base was used until same study overlap occurred. Dissertation abstracts were used in an attempt to include unpublished literature. To leave out the subset of unpublished literature is to falsely assume that the direction and magnitude of effect is the same in published and unpublished data (Glass et al., 1981). Reference lists of all obtained articles were studied for additional relevant articles (Baer and Nietzel, 1991).

The search procedures yielded a total of 129 studies, which were either accepted or rejected via the inclusion criteria. Studies conducted from 1980 to 1995 were used in this meta-analysis because the structure of the DSM changed with the publication of the DSM-III in 1980. The DSM-III introduced an explicit diagnostic criteria, which was an important methodological innovation for diagnosing psychological disorders (DSM-IV APA, 1994). Studies prior to

1980 that used the DSM-I or DSM-II to conceptualize conduct disorder, would have threatened the validity of the literature review. These procedures, in accordance with the following selection criteria, provided the data for this meta-analysis.

The following criteria determined inclusion into this study:

1. Studies using subjects that are 18 years old or younger.
2. Studies using random assignment of subjects to treatment and control groups.
3. Studies without control groups (i.e., where random assignment may not take place) will be included only if they have a pre- and post-test design.
4. Studies will be included only if they use cognitive interventions (as defined by Ellis' rational-emotive therapy and cognitive-behavior therapy or Beck's cognitive therapy), parent management training, and pharmacological interventions (i.e., the use of lithium carbonate and the use of stimulants [e.g., methylphenidate, dextroamphetamine, and pemoline]) for independent variables.

5. Studies that use the DSM-III, DSM-III-R, or DSM-IV criteria for conduct disorder or describe the behavior of interest as antisocial, severe aggression or severe aggression and impulsivity combined. Subjects with additional confounding diagnosis such as schizophrenia or mental retardation (IQ of 70 or below) will be excluded.
6. Studies written in English published or unpublished, reporting statistics for the calculation of effect sizes.
7. Studies that report the necessary data to calculate a Cohen's d score.
8. Studies performed from 1980 to 1995.
9. Studies where a secondary diagnosis of Attention-Deficit/Hyperactivity Disorder is present will be included.
10. Studies with solicited subjects will be included.

Criteria number five excluded the majority of the studies retrieved from literature search. Many studies did not report the use of the DSM III, III-R, or IV for conceptualizing the problem manifested in the child or adolescent. Those studies that failed to utilize the DSM III, III-R, or IV, simply referred to the area of focus as "problem behavior". Due to the high incidence of

co-occurrence stated in the previous chapter, the inclusion criteria accepted individuals who were dually diagnosed with attention deficit-hyperactivity disorder and conduct disorder. The sample size of studies increased approximately 60% by including studies with comorbid subjects. Due to the diagnostic uncertainty of the two disorders, those studies that reported using pure conduct disorder subjects may have included attention deficit-hyperactive subjects as well.

Table 1. Number of Studies by Treatment Modality and Type of Control

Type of Therapy	Control Group or Subjects as Own Control	Number of Studies
Cognitive Intervention	Control Group	1
Parent Management Training	Control Group	1
Psychopharmacological Intervention	Control Group	4
		Sub-Total 6
Cognitive Intervention	Subjects as Own Control	7
Parent Management Training	Subjects as Own Control	9
Psychopharmacological Intervention	Subjects as Own Control	4
		Sub-Total 20
		Total 26

Methodology for Calculating Effect Sizes

1. Studies that satisfy the inclusion criteria were reviewed for the purpose of extracting the necessary data to calculate effect sizes. The data needed to calculate a Cohen's d was saved on 3 x 5 index cards for later use.
2. Studies without control groups were used if a pre- post-test design was utilized in the study. The pre-test score were used as a baseline measurement of the treatment group (Rosenthal, 1984).
3. As supported by Smith and Glass (1981), due to the equal or near equal number of subjects (n) in the control and treatment groups, this meta-analysis used the control group standard deviation to calculate effect sizes.
4. An effect size of +1.00 indicates that an individual who has received treatment would rise one standard deviation above the mean of the control group or to the 84th percentile of the control group (Smith & Glass, 1977).
5. Effect sizes that are represented as a t , p , r , or z -score were transformed into d -scores (Wolfe, 1986).

The following formulas were used to analyze effect sizes for the purpose of summarizing treatment outcomes:

1. Calculation of effect size for each dependent variable:

Cohen's d
$$d = \frac{\bar{X}_1 - \bar{X}_2}{SD} \quad (\text{Rosenthal, 1986})$$

2. When converting t to Cohen's d:

$$d = \frac{2t}{\sqrt{df}} \quad (\text{Wolfe, 1986})$$

3. When converting a p-value to Cohen's d:
p is transformed via z, and the following estimate of d is used:

$$d = z\sqrt{1/n} + 1/n \quad (\text{Duncan, 1994})$$

4. When converting r to Cohen's d:

$$d = \frac{2r}{\sqrt{1-r^2}} \quad (\text{Rosenthal, 1986})$$

5. When converting F to Cohen's d:

$$d = \frac{2\sqrt{F}}{\sqrt{df_{\text{error}}}}$$

(Wolfe, 1986)

6. Test of significance:

$$T = \frac{(m_1 - m_2)}{S} \frac{1}{\sqrt{1 + \frac{1}{n_1} + \frac{1}{n_2}}}$$

(Rosenthal, 1986)

A meta-analysis of the studies accepted (via the inclusion criteria) was conducted to compare the treatment effects of cognitive therapy, parent management training, and pharmacological treatment for conduct disordered children and adolescents. The spreadsheet program Microsoft Excel was used to organize and analyze the data for this meta-analysis.

Chapter 4

Results

A total of 129 studies were extracted from the data retrieval procedure described in Chapter 3. The inclusion criteria for this meta-analysis accepted 26 studies for data collection and analysis. Cook, Cooper, Cordray, Hartmann, Hedges, Light, Louis, and Mosteller (1992) suggests that the actual number of studies used in a meta-analysis has little significance compared to the process in which they are included. Obviously, studies that are included in a meta-analysis must have a treatment effect in the positive direction. The process of retrieving and including studies for meta-analyses must be thorough, which generally results in the usage of a small portion of the studies originally extracted. Ideally, the studies represented in this meta-analysis includes all the research performed on the subject. However, due to limitations such as unclear diagnostic boundaries and other internal threats to validity, this systematic research summary represents a limited number of studies from the total body of research available. In this meta-analysis, approximately 21% of the studies initially retrieved were utilized.

Meta-analyses can be examined in several ways. In this meta-analysis, the dependent variables are the instruments

used to quantify conduct disorder features in children and adolescents. An effect size (Cohen's d) was calculated for each dependent variable within a study that related to the clinical features of conduct disorder. For the purposes of this study, the effect sizes from each treatment modality were combined and averaged. Each measure of conduct disorder has an effect size indicating the treatment effect for that group.

The studies in this meta-analysis were represented by an averaged Cohen's d . Tables 2-4 show the average effect sizes of each treatment modality across types of control. Interpretation of effect sizes and statistical significance should be done with caution. The average effect sizes for cognitive intervention, parent management training, and psychological intervention across control types were 0.948, 1.070, and 1.061 respectively. Although it is difficult to define exactly how conduct disorder improved in subjects, it can be said that the average subject (in the studies used in this meta-analysis) receiving treatment is better off than 84.6% of the untreated controls ($z = 1.02$). This was calculated by taking the averaged d value across treatment groups ($d_{\text{average}} = 1.02$) and applying it to the normal distribution table. This procedure yielded the percentage of the experimental group which exceeded the upper half of cases for the control group (Wolfe, 1986).

The primary purpose of this meta-analysis was to compare the effectiveness of the three treatment modalities under review. The total averaged effect size of each treatment modality was compared and applied to a test of significance. The test of significance failed to reveal a significant difference ($p > .05$). Table 5 shows the average effect size by treatment modality and type of control. Cognitive intervention showed an average effect size of .988 with subjects as own control, and .507 with a control group design. Parent management training showed an average effect size of 1.09 with subjects as own control, and .763 with a control group design. Pharmacological intervention yielded an average effect size of 1.640 with subjects as own control, and .598 with a control group design. The average effect size across all three treatments was 1.00. The implications of these results are examined in Chapter 5.

Table 6 illustrates the descriptive statistics for the dependent variables by treatment modality. The results of this study showed a wide range of effect sizes for each treatment modality. The range for cognitive intervention was .507 to 2.094, parent management training was 0.501 to 2.710, and psychopharmacological intervention -0.714 to 2.647. One of the thirty-four dependent variables represented across the studies had a negative effect size. The negative direction of the effect size was under control group conditions.

Table 2. Effect Sizes (Cohen's d) for Cognitive Intervention

COGNITIVE INTERVENTION			
STUDY	TYPE OF CONTROL	NUMBER OF DEPENDENT VARIABLES	EFFECT SIZE
1	Subjects as Own Control	1	1.301*
2	Subjects as Own Control	2	.880* .917*
3	Subjects as Own Control	1	.561
4	Subjects as Own Control	3	1.253* .362 .584
5	Subjects as Own Control	1	1.058*
6	Subjects as Own Control	1	.644
7	Subjects as Own Control	2	2.094* 1.217*
8	Control Group	1	.507
Total Average Effect Size (Cohen's d)			.948

Note: *P < .05 significance, t distribution

Table 4. Effect Sizes (Cohen's d) for Psychopharmacological Intervention

PSYCHOPHARMACOLOGICAL INTERVENTION			
STUDY	TYPE OF CONTROL	NUMBER OF DEPENDENT VARIABLES	EFFECT SIZE
1	Subjects as Own Control	1	2.173*
2	Subjects as Own Control	1	.6009*
3	Subjects as Own Control	1	2.647*
4	Subjects as Own Control	1	1.1403
5	Control Group	1	1.105*
6	Control Group	1	0.2941
7	Control Group	1	-0.714
8	Control Group	2	1.305 1.00
Total Average Effect Size (Cohen's d)			1.061

Note: *P < .05 significance, t distribution

Table 5. Average Effect Size by Type of Control

INTERVENTION	TYPE OF CONTROL	AVERAGE EFFECT SIZE
Cognitive Intervention	Subjects as Own Control	.988
Parent Management Training	Subjects as Own Control	1.09
Pharmacological Intervention	Subjects as Own Control	1.640
Cognitive Intervention	Control Group	.507
Parent Management Training	Control Group	.763
Pharmacological Intervention	Control Group	.598

Table 6. Descriptive Statistics for Dependent Variables by Treatment Modality

COGNITIVE INTERVENTION					
N	MEAN d	MEDIAN	STDEV	MIN	MAX
12	0.948	0.898	0.480	.362	2.094
PARENT MANAGEMENT TRAINING					
N	MEAN d	MEDIAN	STDEV	MIN	MAX
13	1.070	0.882	0.612	0.501	2.710
PSYCHOPHARMACOLOGICAL INTERVENTION					
N	MEAN d	MEDIAN	STDEV	MIN	MAX
9	1.061	1.105	0.986	-0.714	2.647

Chapter 5

Discussion and Implications for Future Research

Discussion

Meta-analysis was used in this study to report the treatment effectiveness of cognitive intervention, parent management training, and psychopharmacological intervention for conduct disorder in children and adolescents. In addition to summarizing the research outcomes, a comparison of the treatments was made to determine which of the three treatments is the most effective.

Parent management training showed the greatest treatment effect of the three treatment modalities. The average effect size for parent management training was 1.070. This means that subjects receiving parent management training improved over one standard deviation above the mean of the control group. Practically speaking, an effect size that exceeds one standard deviation above the control group mean indicates at least some clinical improvement. Psychopharmacological intervention had the second greatest effect size. The average effect size for psychopharmacological intervention was 1.061. Like parent management training, psychopharmacological intervention exceeded more than one standard deviation above the mean of the untreated control

group. Cognitive intervention showed the least effect at 0.948. The test of significance on the comparisons of each treatment effect failed to show a significant difference. The clinical implications of this finding will be discussed later in this chapter.

Conceptualizing the meaning of a particular effect size is somewhat difficult because there is often no standard by which to evaluate. Wolfe (1986) reports that a 0.50 standard deviation improvement in achievement scores is considered to be an accepted measure of practical significance. Likewise, the National Institute of Education's Joint Dissemination Review Panel indicated that often one-third ($0.33 Sd_x$), and sometimes as small as one-fourth ($0.25 Sd_x$), standard deviation improvement is considered to be educationally significant. Cohen (1977) offers a very arbitrary guideline by suggesting that $d = .2$ (small effect), $d = .5$ (medium effect), and $d = .8$ (large effect). When applied to these standards, the treatment effects for cognitive intervention, parent management training, and psychopharmacological intervention are all practically significant.

In this study, the differences in the treatment effects between control group and subjects as own control are difficult to explain. The fact that both cognitive intervention and parent management training each had one study with a control group design, makes any conclusion about

control design differences suspect (see Table 5). Therefore, the differences between subjects as own control and control group design can only be speculated. Studies using a control group design yielded a smaller treatment effect size than the studies with subjects as own control design. In most cases, the control group progressed as well, creating a smaller difference score between the treatment group and the control group. There are several possible threats to internal validity that are capable of causing such a phenomenon. *Maturation* of the subjects over the course of the treatment is one possible explanation. Individuals may have changed their behavior by virtue of gaining experience living in an inpatient setting. *Testing* the subjects many times over the course of the treatment may have caused the individuals to make conjectures about the types of behavior the staff desired. Finally, *diffusion of treatments* is always possible when both the treatment group and the control group interact together. In many of the studies the subjects were exposed to the other's treatment, by virtue of belonging to the the same inpatient or out-patient treatment community. In several of the studies, control group subjects were given placebo and not directly exposed to the treatment under investigation. However, the subjects still belonged to the treatment community. The diffusion dynamic could have altered (improved) the behavior of the control group subjects. In addition, therapy can often times create a

"flash in the pan" response from individuals. Clients will suddenly improve because they are receiving care from the clinician, staff, or general community. These possible threats to the internal validity of the studies are natural functions of the therapeutic environment, which are very difficult to control. Moreover, as mentioned previously, subjects in this meta-analysis were better off than 84.6% of the untreated controls. This finding can only be meaningful if the subjects did not self-identify the need for therapy. In those cases where subjects did initiate therapy, their desire to "get better" may have effected the treatment outcome.

The effect sizes yielded by this study are consistent with the reports of Kazdin (1995). Kazdin suggests that cognitive interventions and parent management training do produce significant change in individuals with conduct disorder. However, the results of this study are somewhat inconsistent with the findings of Shamsie (1981), in that traditional treatments yield poor results for individuals with conduct disorder. Perhaps both positions are true. Shamsie contends that traditional approaches such as individual psychotherapy or group psychotherapy fail to recognize the conduct disordered individual as unmotivated to "get well", implying that the role of the therapist is to "fix" the individual's sickness. Instead, they are more motivated to obtain a job, money, or freedom from their

parents. According to Shamsie, antisocial behavior must be seen not as a sickness, but as a lack of socialization. Many of the studies used in this meta-analysis (i.e., cognitive interventions and parent management training) went beyond the typical "talk therapy" approach, which may explain the substantial treatment effects.

Kazdin's (1992) studies, which were included in this study, adhered to Shamsie's (1981) position. His research used cognitive interventions and parent management training which incorporated the social learning model. Other studies used in this meta-analysis also broadened their treatment focus. Webster-Stratton's (1984) study of parent management training yielded the largest treatment effect ($d = 2.71$) of all the studies used in this meta-analysis. Her interventions used both individualized treatment and video training for parents, which taught operant techniques.

The cognitive intervention studies in this meta-analysis also utilized techniques that incorporated "real life" situations. Kolko et al. (1990) used cognitive-social skills training which yielded a treatment effect of 1.058. Their intervention not only taught cognitive techniques to reduce feelings of anger, but also utilized a token economy system to reinforce desired behavior.

The psychopharmacological interventions yielded a total average effect size of 1.061. As with many studies that measure the treatment effects of medication, subjects are

often dropped due to side effects, leaving only those people that responded positively. The lowest effect size yielded from the pharmacological studies was -0.714. This negative direction effect had a control group design (see Table 5), and used the Conners Teacher Rating Scale. Another interesting component to this particular study is that it identified all the subjects as being dually diagnosed with both attention deficit hyperactivity and conduct disorder. Because the focus of this meta-analysis was primarily on conduct disorder, it is unknown if the specific features of attention deficit hyperactivity in these subjects was reduced.

Limitations of this Study and Implications for Future Research

Limitations

A primary criteria for inclusion in this meta-analysis is the Axis I diagnosis of conduct disorder. Due to the unresolved issue of having a clear diagnostic distinction between Conduct Disorder and Attention Deficit Disorder, this study allowed the comorbidity of the two disorders to be included. Therefore, dependent variables that simply measure conduct problem behaviors did not distinguish between those behaviors that are considered conduct disordered features exclusively. All of the studies used in this meta-analysis excluded subjects with additional confounding disorders such

as schizophrenia or mental retardation. However, it can only be assumed that a full psychological assessment was performed using such instruments as the Minnesota Multiphasic Personality Inventory (MMPI), Beck Depression Inventory (BDI), or Millon Adolescent Personality Inventory (MCMI) to rule out other disorders such as major depression, generalized anxiety (including overanxious disorder of childhood), and substance abuse.

The psychopharmacological studies have two limitations worthy of consideration. First, some of the studies used subjects that had already received some type of "talk therapy". Many studies did not mention if the subjects or families of the subjects had previously received psychological intervention. Therefore it is unknown if a residual effect is present. Moreover, pharmacological intervention alone, without any "counseling" between the parents and/or subjects is seldom the case. In outpatient settings, psychiatrists will often answer questions or give suggestions in a cursory manner. The nature of an inpatient setting frequently lends itself to dialogue with psychiatric nurses, social workers, or the like. Therefore, there is a potential effect occurring between the patient and clinical staff. In summary, it is difficult to control for these types of extraneous variables by virtue of the client/therapist relationship. Furthermore, it is unknown if

the studies used in this meta-analysis recognized these particular issues as having an impact on their outcomes.

Implications for Future Research

The results of this study have several implications for future research. First, only one study was found which combined treatments for conduct disordered children and adolescents. Kazdin (1992) combined cognitive intervention and parent management training for the treatment of conduct disorder. However, there was a substantial amount of research found that combined treatments for pure attention-deficit hyperactivity disorder. Perhaps the difficulties mentioned earlier concerning diagnostic overlap of attention-deficit and conduct disorder are a factor in the lack of multi-modal research for pure conduct disorder.

Secondly, the lack of statistical significance when comparing the treatment effects of cognitive intervention, parent management, and psychopharmacological intervention generates many considerations for the clinician. The averaged effect size of the three interventions under investigation proved to be quite remarkable. Since all the treatments are effective, therapists must discern which of the three treatments to use in a given situation. More research must be done concerning predictors of treatment outcome for the three interventions under investigation. However, there are some obvious considerations for therapists

when choosing between these three treatments. Parent management training can only be effective when the parent or parents are motivated to engage in the process. When clinicians do not have the luxury of participatory parents, cognitive intervention may be the better choice. Cognitive interventions are designed to focus on the individual, rather than the "significant others" of the individual's system. In theory, how the individual perceives their particular situation is the focus, rather than utilizing others in the change process.

Perhaps the use of psychopharmacological intervention with other treatment modalities has the greatest promise. Medication can be used in both inpatient and outpatient settings, which affords the clinician the opportunity to sustain the same level of care across environmental lines. The use of medication may also prove to be an effective supplement to other forms of psychotherapy. Research in the area of psychopharmacology and psychotherapy combined is certainly lacking in the treatment of conduct disorder.

The purpose of this meta-analysis was to report the treatment effectiveness of cognitive intervention, parent management training, and psychopharmacological intervention for conduct disorder in children and adolescents. In addition to summarizing the research outcomes, a comparison of the treatments was made to determine which of the three treatments is the most effective. In that process, this

study exposed some of the difficulties that currently exist in the diagnosis and treatment of conduct disorder. This study was limited to children and adolescents with no regard to the possible applications for adults. Meta-analysis may be an appropriate tool to investigate the effectiveness of these interventions for the adult population.

Finally, the relationship between the child or adolescent and the counselor is quite possibly the greatest predictor of treatment effectiveness. The computer search for this meta-analysis failed to produce any study that addressed this issue for conduct disorder. Cormier and Hackney (1993) suggest that the establishment of trust is inherently more complex with the adolescent who is actively seeking to differentiate self from parents. The lack of skillful relationship building techniques with children and adolescents severely diminishes the effectiveness of any therapeutic intervention.

The efforts of the individuals represented in this meta-analysis have made significant contributions. Clinicians and parents who attempt to intervene with the conduct disordered child or adolescent can learn several things from this meta-analysis. First, conduct disorders left untreated can result in severe negative consequences for the individual, family, and community. Secondly, treatment interventions that go beyond the traditional "talk therapy" approach by integrating real life situations are perhaps the most effective.

Finally, multi-modal interventions that utilize pharmacology, individual therapy (i.e. cognitive intervention), and parent skills training are potentially very promising. Clinicians must emphasize to parents and significant others the importance of their involvement in the therapeutic process.

The culture of children and adolescents has become extremely complex in our rapidly changing society. As Jean Piaget (Kuehlwein and Rosen, 1993) suggests, "Any knowledge raises new problems as it solves proceeding ones". This meta-analysis revealed that cognitive intervention, parent management training, and psychopharmacological intervention are all effective in treating conduct disorder in children and adolescents. However, new questions arise in the face of this knowledge. In light of the fact that in the United States, between 1.3 and 3.8 million children exhibit conduct disorder, questions such as diagnostic overlap, etiology, and relationship building need to be addressed in subsequent research in order to maximize the effectiveness of treating the disorder.

Appendixes

Appendix A

Diagnostic criteria for 312.8 Conduct Disorder

- A. A repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated, as manifested by the presence of three (or more) of the following criteria in the past 12 months, with at least one criterion present in the past 6 months:

Aggression to people and animals

- (1) often bullies, threatens, or intimidates others
- (2) often initiates physical fights
- (3) has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, gun)
- (4) has been physically cruel to people
- (5) has been physically cruel to animals
- (6) has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery)
- (7) has forced someone into sexual activity

Destruction of property

- (8) has deliberately engaged in fire setting with the intention of causing serious damage
- (9) has deliberately destroyed others' property (other than by fire setting)

Deceitfulness or theft

- (10) has broken into someone else's house, building, or car
- (11) often lies to obtain goods or favors or to avoid obligations (i.e., "cons" others)
- (12) has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery)

Serious violations of rules

- (13) often stays out at night despite parental prohibitions, beginning before age 13 years
 - (14) has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period)
 - (15) is often truant from school, beginning before age 13 years
- B. The disturbance in behavior causes clinically significant impairment in social, academic, or occupational functioning.
- C. If the individual is age 18 years or older, criteria are not met for Antisocial Personality Disorder.

Specify type based on age at onset:

Childhood-Onset Type: onset of at least one criterion characteristic of Conduct Disorder prior to age 10 years

Adolescent-Onset Type: absence of any criteria characteristic of Conduct Disorder prior to age 10 years

Specify severity:

Mild: few if any conduct problems in excess of those required to make the diagnosis **and** conduct problems cause only minor harm to others

Moderate: number of conduct problems and effect of others intermediate between "mild" and "severe"

Severe: many conduct problems in excess of those required to make the diagnosis **or** conduct problems cause considerable harm to others

Appendix B

Diagnostic criteria for Attention-Deficit/Hyperactivity Disorder

- A. Either (1) or (2):
(1) six (or more) of the following symptoms of **inattention** have persisted for at least 6 months to a degree that is maladapted and inconsistent with developmental level:

Inattention

- (a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- (b) often has difficulty sustaining attention in tasks or play activities
- (c) often does not seem to listen when spoken to directly
- (d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instruction)
- (e) often has difficulty organizing tasks and activities
- (f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- (g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
- (h) is often easily distracted by extraneous stimuli
- (i) is often forgetful in daily activities

- (2) six (or more) of the following symptoms of **hyperactivity-impulsivity** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- (a) often fidgets with hands or feet or squirms in seat
- (b) often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- (d) often has difficulty playing or engaging in leisure activities quietly
- (e) is often "on the go" or often acts as if "driven by a motor"
- (f) often talks excessively

Impulsivity

- (g) often blurts out answers before questions have been completed
 - (h) often has difficulty awaiting turn
 - (i) often interrupts or intrudes on others (e.g., butts into conversations or games)
- B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.
- C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).
- D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

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EDUCATION

Virginia Polytechnic Institute and State University Doctor of Philosophy in Counselor Education	April, 1996
James Madison University Master of Education in Counseling Psychology	May, 1984
James Madison University Bachelor of Social Work	May, 1982
Ferrum College Associate of Arts in Psychology	May, 1980

COUNSELING AND RELATED WORK EXPERIENCE

Doctoral Teaching Intern

Virginia Polytechnic Institute and State University

- * Instructed a graduate course entitled: Principles and Practices of Counseling (Fall, 1994)
- * Instructed a graduate course entitled: Counseling Theories (Spring, 1995)

Licensed Professional Counselor (Commonwealth of Virginia) National Board Certified Counselor

Providence Clinics (Princeton Clinic Director) (November, 1995-Present)

- * Insure clinic and staff development by community marketing and recruitment of support staff and clinicians.
- * Counsel adults, adolescents, couples, and families primarily utilizing cognitive-behavioral, solution focused, and behavioral interventions.
- * Facilitate group psychotherapy for adolescents designed to empower individuals.

through the expression and resolution of issues such as depression, truancy, substance abuse, rebellious behavior, hyperactivity, or the effects of abuse.

*Facilitate group psychotherapy for female adults designed to empower individuals through the expression and resolution of issues such as depression, substance abuse, anxiety, co-dependency, and abusive relationships.

*Provide consults for attending physicians in various inpatient settings.

Lewis-Gale Clinic

Department of Psychological Medicine

(July, 1993-August, 1995)

*Counsel adults, adolescents, couples, and families primarily utilizing cognitive-behavioral, solution focused, and behavioral interventions.

*Facilitate group psychotherapy for adolescents designed to empower individuals through the expression and resolution of issues such as depression, truancy, substance abuse, rebellious behavior, hyperactivity, or the effects of abuse.

*Facilitate group psychotherapy for female adults designed to empower individuals through the expression and resolution of issues such as depression, substance abuse, anxiety, co-dependency, and abusive relationships.

*Provide Employee Assistance Program (EAP) services to corporations.

*Design and conduct in-service training sessions for clinic staff.

*Provide consults for attending physicians in various inpatient settings.

*Utilize clinical privileges obtained at Roanoke Memorial Hospital, Lewis-Gale Hospital, and Lewis-Gale Psychiatric Hospital.

Anderson Professional Counseling

(November, 1992-July, 1993)

Saint Albans of Roanoke

(December, 1987-November, 1992)

*Provided individual and group psychotherapy as described above.

*Managed office staff for billing and client reception.

*Consulted with school systems, industries, and local churches.

Total Life Counseling, Inc.

(July, 1985-December, 1987)

*Fulfilled Virginia Board of Professional Counselor residency requirements for licensure consisting of four thousand clinical hours and four hundred hours of face to face supervision.

*Primary clinical focus was providing individual, marital, family, and group psychotherapy to adolescents and adults.

Assistant Dean of Students

Roanoke College

(July, 1984-July, 1985)

*Counseled students with emotional, social, spiritual, educational, and career concerns.

*Assisted in the operation of the Career Development Center, utilizing personality and career inventories, and career placement computer programs.

*Developed and implemented training programs for residence life staff addressing a variety of topics such as human relations skills, crisis management, time management and wellness.

*Developed and managed a departmental budget.

PROFESSIONAL PRESENTATIONS

Managing Long Distance Relationships

Time Management

Suicide: "Its Warning Signs"

Alcohol Awareness: Developing a Positive Lifestyle

Self-Relaxation and Study Skills

"Managing Life On and Off the Playing Field": A three week series for collegiate athletes

Identifying and Responding to Stress in Children

Understanding Adolescent Sexuality

"Bridging the Gap with Teenagers": A workshop for enhancing relationships and self-esteem

Positive Parenting

Managing the Holiday Blues

Working with the Resistant Client

Understanding Depression (Radio talk show)

PROFESSIONAL AFFILIATIONS

American Counseling Association (ACA)

American Association for Specialist in Group Work (ASGW)

American Mental Health Counselors Association (AMHCA)

International Marriage and Family Therapy Association (IMFTA)

New Jersey Counseling Association (NJCA)

Virginia Counselor Association (VCA)

Virginia Clinical Counselors Association (VCCA)

