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Parental Compliance to Clinical Recommendations in an ADHD Clinic — Aug 2006
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PARENTAL COMPLIANCE TO CLINICAL RECOMMENDATIONS IN AN ADHD CLINIC

A Dissertation

Presented to

The School of Graduate Studies

Department of Psychology

Indiana State University

Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Psychology

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by

Alice Samantha Thibodeau

December 2006

School of Graduate Studies
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CERTIFICATE OF APPROVAL

DOCTORAL DISSERTATION

This is to certify that the Doctoral Dissertation of

Alice Samantha Thibodeau

entitled

Parental Compliance to Clinical Recommendations in an ADHD Clinic

has been approved by the Examining Committee for the dissertation requirement for the

Doctor of Psychology degree

in Clinical Psychology

December 2006

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ABSTRACT

Psychological assessments are a cornerstone of clinical practice in psychology, but if results and recommendations are not used to guide treatment interventions, their value is greatly diminished. Currently, there is very little research that examines adherence to treatment recommendations given to parents or caregivers following psychological evaluations of their children. The present study expands on previous research (MacNaughton & Rodrigue, 2001) examining perceived barriers to parental compliance with psychological assessment recommendations by considering the impact of severity of child behavior problems and parenting stress on compliance. Eighty caregiver/child dyads were recruited through an ADHD evaluation clinic and caregivers completed a telephone interview approximately 4 to 6 weeks after receiving recommendations for their children's care. It was predicted that parents/caregivers reporting greater levels of stress would report lower levels of compliance; parents/caregivers reporting greater levels of compliance would report greater improvement in children's behavior; parents/caregivers would report compliance to less than 70% of the recommendations (MacNaughton & Rodrigue, 2001) and the recommendation to which parents/caregivers most commonly adhered would be that of consulting with a non-psychological professional (i.e., physician). Results revealed that caregivers reporting greater levels of parenting stress were more likely to report following recommendations, that greater levels of compliance were associated with

greater levels of improvement, that caregivers reported adherence to 81.5% of recommendations, and that caregivers were equally likely to engage in active self-help recommendations (i.e., parent education on ADHD) and those for professional-nonpsychological services (i.e. consulting with a physician for medication) and least likely to follow through on recommendations for psychological services (child or family counseling). The most commonly reported barriers to following recommendations were 1) that caregivers had not had time to comply and 2) that teachers were uncooperative with implementing school-based recommendations.

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INTRODUCTION

It has been estimated that approximately 1.5 million psychological evaluations are conducted on children in the U.S. each year (Magrab & Wohlford, 1990). After such an assessment, the evaluator generally provides written and/or verbal feedback to the child's parents or caregivers, including a summary of his/her findings and specific recommendations for further interventions. The value of a psychological assessment depends largely on whether those recommendations are followed; however, the question of whether parents and caregivers comply with assessment recommendations has rarely been investigated (e.g., Ewalt, Cohen, & Harmatz, 1972; MacNaughton & Rodrigue, 2001; Singh, Janes, & Schechtman, 1982). To the author's knowledge, there is no current research that specifically considers compliance to assessment recommendations for children evaluated for Attention-Deficit/Hyperactivity Disorder (ADHD).

A conservative estimate of prevalence suggests that 3 to 5% of children meet diagnostic criteria for Attention-Deficit/Hyperactivity Disorder (ADHD; American Psychiatric Association, 2000). These children present with a variety of signs and symptoms, including failure to pay attention to details, difficulty sustaining attention, losing things, fidgeting, talking excessively, difficulty staying seated, and interrupting others. ADHD is more commonly diagnosed in boys than girls, with three times as many

males as females being referred for evaluation. Although the prognosis of children who have ADHD is quite varied, approximately 50 to 70% of children with ADHD display oppositional and defiant behaviors which, if left untreated, may progress into Conduct Disorder (Barkley, 1998). In addition, children with ADHD commonly have difficulty at school related to poor academic performance because of their difficulties finishing tasks, conflicts with peers, and disruptive behavior. Up to 80% of children with ADHD continue to display symptoms of ADHD into adolescence. Family conflicts among ADHD teenagers are common and often related to the teens' not taking responsibility for routine tasks (Edwards, 1995). Further, as many as 65% of children with ADHD never "grow out of it" and have symptoms throughout adulthood (Barkley, 1998).

A number of therapies have been developed for the treatment of ADHD, with the strongest empirical support existing for stimulant medications (i.e., methylphenidate and dextroamphetamine) and behavior therapy, both of which are recommended in the American Academy of Pediatrics' current ADHD treatment guidelines (Subcommittee on Attention-Deficit/Hyperactivity Disorder Committee on Quality Improvement [Subcommittee on ADHD], 2001). Between 50 and 95% of children treated with stimulant medication show improvements in behavioral, social and academic functioning, depending on the presence of comorbid developmental or psychiatric disorders (DuPaul, Barkley, & Connor, 1998). Parent training has been found to be the most efficacious behavior therapy intervention for ADHD (Subcommittee on ADHD, 2001). Parents are taught about ADHD and how their children's behavior is affected by it, as well as techniques to change their children's behaviors, such as giving effective commands and using positive reinforcement, time-out, response cost, and/or a token economy

(Subcommittee on ADHD, 2001). Because ADHD problem behaviors occur across settings and evidence suggests that point of performance interventions (i.e., interventions that occur as close as possible in time and place to the target behavior; Goldstein & Goldstein, 1998) are most effective, it is important that interventions also take place across settings. Therefore, an important component of behavior therapy is interventions carried out in the school setting (DuPaul & Stoner, 2003).

Interventions in the school setting are developed based on the individual needs of the child and ideally include both proactive and reactive strategies (DuPaul & Stoner, 2003). *Proactive* strategies involve making changes in the environment prior to interactions with the child that are designed to prevent inattentive and disruptive behaviors from occurring and replace them with appropriate behaviors, whereas *reactive* strategies involve increasing positive reinforcement of appropriate behaviors and/or punishment of inappropriate behaviors. School-based interventions can be administered by the teacher, parents, peers, or a computer, or self-directed by the child (DuPaul & Stoner, 2003). Teacher administered interventions focused on the child with ADHD may include providing more frequent and specific feedback, giving instructions that involve only a few steps, presenting complex assignments broken up into smaller units, or reminding a student of possible classroom privileges that he/she can earn through appropriate behavior during a task prior to the start of the task, as well as the same types of contingency management techniques utilized by a child's parents outside of school, i.e. time-out, response cost, and/or a token economy (DuPaul & Stoner, 2003). Teachers may also alter their general classroom instruction style to include frequently reminding students of classroom rules and communicating expectations for the use of class time,

maintaining eye contact with students, reminding students about critical expected behaviors before an activity begins, monitoring student behavior by moving through the classroom and commenting on students' behavior, using nonverbal signals to redirect a student while verbally teaching others, and maintaining a brisk instructional pace. Parent administered school-based interventions involve the parents working with the teacher to develop specific in-school behavioral goals, about which the parents will receive daily behavior report cards so that they can provide reinforcement and/or consequences in response to teacher ratings. The child also may be provided with cues in the classroom, such as a timer on his/her desk, to self-monitor and self-reinforce his/her activity on a regular basis while teacher monitoring and reinforcement is reduced (DuPaul & Stoner, 2003).

Although the combination of behavior therapy and stimulant medication has not consistently proven to be more effective than stimulant medication alone, children in combination treatment tend to show the greatest levels of improvement (Adesman, 2003). Parents and teachers who participated in the recent Multimodal Treatment Study of children with ADHD also reported greater satisfaction with combination treatment than stimulant medication or behavior therapy alone (Conners, et al., 2001). Medications used in the treatment of ADHD besides stimulants include tricyclic antidepressants and bupropion. In addition, a non-stimulant medication, atomoxetine HCl (brand name Strattera), has also been approved by the FDA as a treatment for ADHD.

Given the many possible negative outcomes associated with ADHD and the empirical support for the efficacy of the ADHD-focused treatments discussed above, it is clear that compliance with assessment recommendations following a diagnosis of ADHD

is very important. Although many of the supported interventions are administered by teachers (e.g., classroom modifications) or physicians (i.e., medication), parents or caregivers most often are responsible for deciding upon a course of treatment and seeking out and/or advocating for child services in the school and community. Gaining a better understanding of parental/caregiver levels of compliance as well as obstacles to compliance is one step toward a better integration of assessment and treatment practice for children with ADHD. The barriers-to-treatment model was developed by Kazdin, Holland, and Crowley (1997) based on their studies of treatment compliance in a sample of children who had been referred for oppositional, antisocial, and aggressive behavior. MacNaughton and Rodrigue (2001) examined the utility of the perceived barriers described by Kazdin, Holland, and Crowley as predictors of recommendation adherence by parents in a sample of children evaluated at a general mental health clinic. This study will investigate the utility of those same barriers in understanding adherence in a sample of parents/caregivers of children evaluated at a university-based ADHD assessment clinic, as well as consider the relationships of socioeconomic status, parental stress, and severity of the child's disorder to recommendation adherence.

Health-Protective Behavior

When an individual engages in a behavior intended to improve his/her health or to prevent development of an illness, he/she is engaging in health-protective behavior. Recommendations presented in a child or adolescent psychological evaluation are generally intended to address problem behaviors and to ultimately improve mental health. In the case of a child client, recommendations are normally targeted at parents, caregivers, or health-care professionals, as children rarely are capable of carrying out

recommendations themselves. It is the parents or caregivers, however, who perform the cost-benefit analyses and ultimately make decisions resulting in action or inaction regarding assessment recommendations. In general, they are the primary agents of change.

Several theories have been proposed to describe how individuals make decisions about performing health-protective behaviors, but most are based on common assumptions (Weinstein, 1993). It is assumed that anticipation of negative health consequences and the subsequent desire to avoid or reduce the likelihood of those consequences motivates individuals to engage in health-protective behaviors. This motivation is thought to be influenced by individuals' beliefs about the likelihood of negative consequences taking place. For an individual to behave in a self-protective manner, he/she must believe that his/her actions are going to decrease the likelihood of negative consequences and also believe that those negative consequences are likely to occur if he/she does not engage in these actions. For example, in order for a parent to carry out a recommendation to consult with a child clinician to learn new child management skills, he/she must believe that learning these skills will result in improvements in his/her child's behavior, and that failure to do so will result in his/her child's behavior remaining the same or worsening. Further, before acting, expected benefits of action must be weighed against likely costs. The differences in the theories lie in the conceptualizations of how these variables (motivation, beliefs, benefits and costs) combine to produce action or inaction (Weinstein, 1993).

Research examining health-protective behavior has tended to focus on treatment compliance, or the "action" stage of behavior change (Prochaska, DiClemente, &

Norcross, 1992). In such studies, treatment compliance is defined in a number of ways, including taking medication as prescribed or attending a course of psychotherapy. Data are generally gathered from treatment records after the fact or through periodic contacts with participants over the course of treatment. Research on treatment compliance includes only those individuals who have started in treatment (Vermeire, Hearnshaw, Van Royen, & Denekens, 2001). Recommendation adherence research is focused on the steps that come before action: the cost-benefit analysis, or "contemplation" stage, in which an individual considers whether to initiate further treatment or intervention, and the "preparation" stage, in which the individual has decided to take action but not yet begun to do so (Prochaska, et al., 1992). This type of research seeks to understand the processes that occur after a person receives evaluation recommendations which then lead the individual to comply, or fail to comply, with the evaluation recommendations.

The few studies that have been conducted on recommendation adherence have generally been of a descriptive nature and lacked a theoretical basis. In an effort to provide such a basis for their research into psychological assessment recommendation adherence, MacNaughton and Rodrigue (2001) adapted a model that had been put forth to describe treatment compliance by Kazdin, Holland, and Crowley (1997): the barriers-to-treatment model. This model was developed to elucidate factors that may prevent parents/caregivers from carrying out health-protective behaviors on behalf of their children, specifically failing to comply with psychotherapy (Kazdin, Holland, and Crowley, 1997). The results of MacNaughton and Rodrigue's research (discussed in detail below) suggest that the barriers-to-treatment identified in the model also act as barriers to recommendation adherence. An implication that can be drawn from these

results is that factors that have been found to affect treatment compliance may also impact recommendation adherence.

Factors Related to Treatment Compliance

Patient compliance with medical treatment has been a subject of study for over thirty years (Vermeire, Hearnshaw, Van Royen, & Denekens, 2001). In that time, more than 200 socioeconomic and pathology-related variables have been studied in an effort to identify consistent predictors of compliance. Although none of these variables has been definitively found to be such a predictor, associations have been found between greater levels of psychopathology in patients, longer duration of treatment, and greater cost of treatment and lower rates of compliance. Extant medical compliance research is flawed due to frequent failures by researchers to define compliance or the form of non-compliance that they are studying. Much of this research has also focused on doctor-related variables while excluding patient factors (Vermeire, et al., 2001). Further, such research tends to be focused on quite circumscribed populations, such as children receiving antiretroviral treatment (e.g., Steele & Grauer, 2003) or adults suffering from Type II diabetes who are being treated with lifestyle changes (e.g., Koenigsberg, Bartlett, & Cramer, 2004).

Much research has also been conducted on compliance with psychological treatment. Unfortunately, this research suffers from the same failure to adequately define noncompliance as seen in the medical literature. Studies of compliance with psychological treatment generally equate noncompliance with "premature termination" of therapy, but this, too, lacks clarity (Hatchett & Park, 2003). Patients have been classified as premature terminators based on a therapist's judgment that the patients ended therapy

too soon, on their failure to attend their last scheduled appointment, or on their failure to attend any sessions beyond an intake appointment, or because they attended fewer sessions than the median number attended by the sample under study (Hatchett & Park, 2003). In addition, unlike medical treatment compliance research, psychological treatment compliance study samples are often too heterogeneous, combining adult patients with child and family therapy patients (Pekarik & Stephenson, 1988). Pekarik and Stephenson examined the effects of variables that had been found to be associated with adult premature termination (e.g., demographic characteristics, referral source, treatment history, mode of treatment, and therapy length) on child continuation in therapy. They found that only family size and Hollingshead social class level were significantly associated with premature termination for child clients. As such, these researchers suggested that studies of premature termination should focus on adult or child clients, not aggregates of the two, and that parent/caregiver characteristics should be a central focus in child therapy compliance research (Pekarik & Stephenson, 1988).

The barriers-to-treatment model. Kazdin, Holland, and Crowley (1997) developed the barriers-to-treatment model for predicting factors associated with premature termination from child and parent therapy for oppositional, antisocial, and aggressive behavior. According to this model, families undergoing treatment experience barriers associated with ongoing participation, and these barriers increase the risk of early treatment termination. Types of barriers include negative perceptions of the treatment, practical impediments to participation, and poor client-therapist relationship. Kazdin, Holland, and Crowley hypothesized that these barriers would be predictive of dropping out of treatment independent of demographic characteristics that have previously been

shown to be associated with premature termination (i.e., SES and minority group status; Armbruster & Fallon, 1994).

Kazdin, Holland, and Crowley (1997) included 242 children and families in their study of children aged 3 to 14 receiving therapy services for a disruptive behavior disorder. Treatment consisted of cognitive problem-solving skills training for the children and/or parent management training for parents. At the point of treatment termination by those who did not complete treatment or at the end of treatment, parents or caregivers and therapists completed a 58-item Barriers-to-Treatment Participation Scale (BTPS) which the researchers developed for the study. This scale includes two sections. The first section is intended to assess occurrence of barriers to participation and is made up of 44-items rated on a 5-point scale (1 = *never a problem*, 5 = *very often a problem*) to determine the Total Barriers score. This section is divided into four *a priori* subscales. The Stressors and Obstacles Competing with Treatment subscale (20 items) assesses events that interfere with coming to and participating in treatment. The Treatment Demands subscale (10 items) considers complaints and concerns about treatment, such as its length. The Perceived Relevance of Treatment subscale (8 items) measures the extent to which treatment was seen as important, relevant to the child's problems, and met parent expectations. Finally, the Relationship with the Therapist subscale (6 items) assesses parent's alliance with the therapist. The second section, the Critical Events subscale, is comprised of 14-items in a yes-no format that identify the occurrence of discrete events that may result in treatment termination, such as loss of insurance.

Results of both parent-report and therapist-report versions of the BTPS indicated that families who dropped out of treatment had encountered significantly more barriers

than those who completed treatment (Kazdin, Holland, & Crowley, 1997). In terms of the types of barriers, significant differences were observed between the groups on all but the Treatment Demands scale. The largest of these differences was seen on the Perceived Relevance of Treatment scale, with dropouts significantly less likely to see treatment as relevant. Completers also reported significantly fewer Stressors and Obstacles Competing with Treatment than dropouts. The smallest significant difference between groups was observed on the Relationship with the Therapist subscale, with dropouts having worse relationships with their therapists. No significant difference was observed between groups in the occurrence of Critical Events. Total Barriers to treatment score correlated significantly with total parent stress, parent's and child's antisocial history, and adverse child rearing practices. Further analysis suggested that barriers serve at least a partial mediational role in treatment dropout. Parents at high risk for dropping out based on other predictor variables (e.g., socioeconomic disadvantage, parent history of antisocial behavior, single-parent families), who also perceived fewer barriers to treatment were at lower risk of dropping out than would have been expected based solely on those predictors. Thus, perception of fewer barriers seemed to serve a protective function (Kazdin, Holland, & Crowley, 1997).

Kazdin and Wassell (1999) extended the barriers-to-treatment model to examine the extent that therapeutic change in participants who completed treatment was influenced by barriers to treatment. In this study, measures of parent psychopathology and stress, family socioeconomic status, and level of child dysfunction were completed prior to treatment for oppositional, antisocial, or aggressive behavior. Treatment consisted of cognitive problem-solving skills training for children and/or parent

management training for their parents/caregivers. Measures of participation in treatment, therapeutic change, and treatment outcome were completed during and after treatment. All participants in this study completed treatment. In addition, at the end of treatment, parents and therapists completed the first section of the BTPS (The Critical Events Scale was not used because it failed to distinguish between treatment completers and drop-outs in prior studies; Kazdin, Holland, & Crowley, 1997; Kazdin, Holland, Crowley, et al., 1997). Results indicated that socioeconomic disadvantage, parent stress, and child dysfunction all contributed significantly to the prediction of therapeutic change, with higher levels of each predicting lower levels of improvement. Higher numbers of perceived barriers were also predictive of less therapeutic change. Number of barriers explained a significant portion of outcome variance when other predictors were controlled (Kazdin & Wassell, 1999). This research suggests that the barriers-to-treatment model is a viable theoretical model for predicting treatment outcome.

Parental characteristics. Andra and Thomas (1998) studied the relationships between parenting stress, socioeconomic disadvantage, and therapy attendance in a sample of 74 child-parent dyads referred to an outpatient clinic for emotionally disturbed preschoolers. At intake, parental stress was assessed with the Parenting Stress Index (PSI; Abidin, 1986) and demographic information was gathered. Attendance information was gathered via record review. Andra and Thomas found moderate and significant negative relationships between all five scales of the PSI (Total Stress Index, Parent Domain, Child Domain, Parent Reinforcement, and Parent Competence) and child therapy attendance. They also found that income was moderately associated with parent therapy attendance, with families of lower income attending fewer sessions (Andra &

Thomas, 1998). These results suggest that parental stress, as well as family income, plays a key role in treatment adherence and may also play a key role in recommendation compliance.

Kazdin and Mazurick (1994) attempted to identify factors that would distinguish families of children who dropped out of treatment for aggressive, oppositional, and antisocial behavior early in the course of therapy from those who dropped out later or completed treatment. In a sample of 257 families, they found that parent stress levels differed significantly between groups. Prior to treatment, they assessed child, parent, and family characteristics linked to poorer prognosis in children with externalizing disorders, including socioeconomic disadvantage, parental stress, parental psychopathology, parent history of antisocial behavior, adverse child-rearing practices, child academic functioning, child antisocial behaviors, severity of child symptoms, and child social competence. They also considered several demographic characteristics, including family make-up (i.e., single parent vs. married), minority group status, age of the mother, relatedness of the head of the household to the child, income, and quality of living accommodations. These researchers found that, compared to those who completed treatment, families who terminated early had children with greater impairments in terms of delinquency, conduct disorder, social behaviors, and academic dysfunction. In addition, parents terminating treatment prematurely were likely to be younger, single, members of a minority group, and reported higher levels of stress. Early dropouts differed from later dropouts in terms of minority status, poor living accommodations, family income, child contact with antisocial peers, poor adaptive functioning at school, and adverse family child-rearing practices (Kazdin & Mazurick, 1994).

Socioeconomic status (SES). The role of socioeconomic status in treatment compliance is not fully understood. Several of the studies cited above (i.e., Andra & Thomas, 1998; Kazdin & Mazurick, 1994; Kazdin & Wassell, 1999) found lower SES to be associated with lower levels of treatment compliance and/or outcome. Armbruster and Fallon (1994) examined the relationship between SES and attrition from treatment at a child guidance clinic in a sample of 304 families. SES was measured according to Hollingshead's (1975) Four-Factor Index of Social Status. Families were considered drop-outs from therapy if they attended no therapy sessions; repeatedly cancelled sessions, resulting in no further contact; or refused recommendations for treatment or further evaluation. A highly significant relationship between SES and dropping out was found, with families in the three lowest classes of the Hollingshead Index more likely to drop out than families in the two upper classes (Armbruster & Fallon, 1994).

Other research has found no relationship or an inverse relationship between SES and treatment compliance. For example, King, Hovey, Brand, Wilson and Ghaziuddin (1997) found lower SES to be associated with higher levels of compliance with recommendations for medication and individual therapy after discharge. MacNaughton and Rodrigue (2001) found no significant relationship between SES and recommendation adherence.

Severity of child dysfunction. Research examining the impact of severity of child dysfunction on treatment compliance has also resulted in mixed findings. Brown, Borden, Wynne, Spunt, and Clingerman (1988) examined treatment compliance among 71 children diagnosed with ADD (Attention Deficit Disorder; American Psychiatric Association, 1980) in relation to a number of variables, including the severity of their

disorder. Severity was assessed prior to treatment using measures of sustained effort and attention over time, impulsivity, and self-control. Children were then randomly assigned to one of four 3-month treatment conditions: 1) cognitive therapy plus placebo, 2) cognitive therapy plus methylphenidate, 3) methylphenidate plus attention control, or 4) placebo plus attention control. Noncompliance was measured in terms of missed doses of medication and failure to attend therapy sessions. Brown and colleagues found that families of children who displayed greater attention problems and less self-control were less compliant in terms of treatment adherence than families of children with less severe impairment in all treatment conditions. Of note, parents of children receiving placebo reported the greatest number of missed doses and their children missed more therapy sessions than those receiving methylphenidate. Brown et al. suggested that the lack of change in the children's behavior in response to the placebo medication may have increased the parents' feelings of helplessness resulting in decreased willingness to attend therapy.

Other studies have also found severity of disorder to play a role in treatment compliance as well as therapeutic change. In a study of 200 children being treated for oppositional, aggressive, and antisocial behavior, Kazdin and Wassell (1999) found that greater levels of child dysfunction predicted lower levels of therapeutic change among children who completed treatment. Kazdin and Mazurick (1994) found that children of families who terminated treatment early in its course demonstrated greater levels of behavioral dysfunction in terms of delinquency, conduct disorder, social behaviors, and academic performance. MacNaughton and Rodrigue (2001), however, found that the severity of problem behaviors did not play a significant role in adherence to assessment

recommendations. These results suggest that child dysfunction may have a greater impact on treatment compliance as compared to assessment recommendation adherence, likely related to the greater demands involved in treatment adherence (e.g., several months of weekly sessions). However, given the limited research on recommendation adherence, further investigation of the role of child behavior dysfunction on assessment recommendation compliance is needed.

Recommendation Adherence

Psychological evaluation recommendations. The barriers-to-treatment model (Kazdin, Holland, & Crowley, 1997) was modified and extended by MacNaughton and Rodrigue (2001) in order to provide a theoretical basis for understanding psychological assessment recommendation adherence. The few studies of recommendation compliance that had been undertaken prior to these researchers' work had been descriptive in nature with no theoretical or conceptual basis. MacNaughton and Rodrigue proposed four types of barriers to psychological assessment recommendation adherence: problems with access to services (e.g., transportation problems, lack of local provider), negative attitudes and beliefs (e.g., family member's unwillingness to comply, belief that recommendations will not help), scheduling problems (e.g., parents unable to find time to follow through), and financial problems (e.g., lack of insurance, no discretionary income). They also suggested that types of recommendations stemming from child-focused assessment could be classified into four categories (see Appendix A). Psychological services recommendations are those suggesting any type of psychotherapy or further psychological assessment. School-based recommendations are any that involve academic-related programs (e.g., remedial reading), the school (e.g., consulting with the

teacher), or tutoring. Professional-nonpsychological recommendations are those that suggest consultation with a professional whose focus of practice is not mental health services, such as a pediatrician. Finally, active self-help recommendations are recommendations for parents to participate in self-help activities, such as buying and reading a book on their child's diagnosis (MacNaughton & Rodrigue, 2001).

In order to test their extension of the barriers-to-treatment model, MacNaughton and Rodrigue (2001) examined recommendation adherence of 93 parents and guardians of 67 boys and 26 girls who were evaluated at an outpatient general mental health clinic for a variety of referral problems, including behavioral disturbance, academic difficulties, and emotional problems. They considered several additional predictors of parental adherence to recommendations, including parents' occupation, education, age, race, family income, family structure, ability to recall recommendations at follow-up, satisfaction with evaluation, and parent locus of control. Child gender, age, history of psychological treatment and/or assessment, and problem severity were also considered. Participants were recruited at the time of the child's evaluation and contacted again four weeks after receiving evaluation feedback. At follow-up, parents were asked how many and which recommendations they had followed, how many recommendations they recalled, and if they had perceived any barriers to adherence to the recommendations. Although the average recollection for specific recommendations was only 55.78% (*SD* = 37.35%), recall was not found to predict overall adherence. This may be because a copy of the recommendations was provided to parents in written form, eliminating the need for free recall in order to follow through on recommendations. MacNaughton and Rodrigue (2001) found that the best predictor of compliance, regardless of type of recommendation

made, was the number of barriers that parents perceived. None of the other variables that they considered (e.g., parent characteristics, severity of child problems, satisfaction with evaluation services, recall of recommendations, or parental locus of control) were found to be significant predictors. They also found that, on average, parents reported adherence to 67% of all recommendations, with greatest adherence to those for professional nonpsychological consultation, such as medication consultation (81% adherence rate), and lowest adherence to those for psychological services (47% compliance rate).

Other professional recommendations. Psychologists are not the only professionals who make recommendations of health-protective behaviors for caregivers to undertake on behalf of their charges. Physicians also make recommendations that parents seek counseling for their children. Joost, Chessare, Schaeunfele, Link, and Weaver (1989) contacted parents of children referred to counseling by pediatricians between a year and two years after the recommendations were made. They found that only 53% of these children had received counseling in that time. King et al. (1997) found that among families of suicidal adolescents who received treatment recommendations upon discharge from the hospital, compliance rates were highest for medication recommendations (66.7% of subjects completed a course of medication treatment), followed by recommendations to attend individual psychotherapy (50.8% compliance). Recommendations for parent guidance or family therapy were adhered to the least (33.3% compliance). Unfortunately, neither of these studies examined factors associated with adherence.

Geriatric patients also often must rely on others to carry out recommendations for their care. Bogardus and colleagues (2004) examined the relationship between caregiver

agreement with recommendations made after assessments conducted at a geriatric assessment center and their adherence to those recommendations one year later. One hundred seventy-six caregivers rated their agreement with recommendations on a four-point scale (*completely*, *mostly*, *partially*, and *not at all*) at the time the recommendations were received. Adherence was measured by caregivers rating how much they had been able to follow through on each recommendation using the same four-point scale, with 100% adherence defined as caregivers rating their follow through on all recommendations as either "*completely*" or "*mostly*." The researchers found that the more caregivers' agreed with recommendations, the more likely they were to have adhered to the recommendation one year later.

ADHD Assessment: Common Recommendations

Upon completion of an ADHD assessment, evaluators generally provide several recommendations to the parents/caregivers of the child. Parents may be advised to seek education on their children's disorder, to consult with a child clinician to learn new child management skills, and to speak with their child's physician regarding a trial of medication based on empirical evidence that parent training and stimulants are effective treatments for ADHD (Subcommittee on ADHD, 2001). The Multimodal Treatment of ADHD (MTA) study, funded by the National Institute of Mental Health, showed that carefully prescribed and monitored stimulant medication is the most effective single treatment for the disorder; comprehensive behavior therapy, including school-based interventions, parent-training, and intensive child-focused treatment, is also effective; and the combination of the two produces the greatest levels of improvement (Adesman, 2003). School-based interventions therefore may also be recommended, including

instituting the use of a daily behavior report card, changing where a child sits in the classroom, and implementing the same behavior changing techniques as the parents are taught to use at home (e.g., time-out, etc.; Pfiffner & Barkley, 1998). Because of the high rates of comorbid psychological disorders among children evaluated for ADHD (Barkley, 1998), parents may also receive recommendations for further evaluation or treatment of these other problems. As mentioned, although parents are not the direct agent for implementing school-based or medication related recommendations, parents or caregivers generally are the initial recipients of evaluation recommendations. Thus, parents or caregivers make decisions regarding all subsequent interventions. In the case of the school-based interventions, parents are often called upon to advocate for both initial and ongoing interventions for the child.

Present Study

The present study sought to fulfill several purposes. First, it considered whether MacNaughton and Rodrigue's (2001) extension of Kazdin, Holland, and Crowley's (1997) barriers-to-treatment model is useful in understanding barriers typically experienced by children and parents referred for an ADHD evaluation. This was accomplished by using a modified version of the instrument which MacNaughton and Rodrigue developed for their study: the Adherence Telephone Interview Form. Second, the study examined the relationship between parental stress level at the time that their children were evaluated, as measured by the Parenting Stress Index – Short Form (PSI-SF; Abidin, 1995), and the level of compliance with assessment recommendations approximately one month following feedback to determine how parental stress level impacts recommendation adherence. Finally, the study considered the impact of the

child's problematic behaviors on parental compliance by examining the relationship between children's scores on the Internalizing and Externalizing Behavior Scales of the Behavior Assessment for Children Parent Response Scale (BASC-PRS; Reynolds & Kamphaus, 1998) and the percentage of recommendations followed.

The primary hypothesis of this study was that parental stress, number of perceived barriers, and severity of child disorder together would significantly predict level of adherence to assessment report recommendations, with greater levels of each of these variables resulting in reduced levels of compliance. Based on the findings of MacNaughton and Rodrigue (2001), it was also predicted that parents would report adherence to less than 70% of the recommendations and that parents reporting greater levels of adherence would report greater improvement in children's behavior. Finally, consistent with previous research, it was anticipated that the recommendation with which parents would most frequently report compliance would be that of consulting with a physician for medications (King, et al, 1997; MacNaughton & Rodrigue, 2001).

Chapter 2

METHOD

Design

The study utilized a prospective correlational design. Level of child dysfunction and level of parental stress at the time of the ADHD assessment and number of barriers perceived 4 to 6 weeks after receiving the recommendations were included as possible predictors of recommendation adherence.

Participants

Ninety-five parents/caregivers whose children were evaluated for Attention Deficit Hyperactivity Disorder at a University-based clinic consented to participate in the study. Fourteen participants were lost to follow up, most commonly because they did not respond to messages or their phone was disconnected. Data from one participant were not included in analyses because the follow up period for this participant (293 days) was nearly 6.5 times the mean follow-up period. Parents/caregivers lost to follow up were significantly younger ($M = 30.50$ years, $SD = 6.63$, $p < .05$) than those who completed the study ($M = 34.94$ years, $SD = 7.16$). The average education level of the mothers of children whose caregivers were lost to follow up ($M = 12.25$ years, $SD = 1.87$) also differed significantly from that of those who completed the study ($M = 13.75$ years, $SD = 2.15$, $p < .05$).

Data were analyzed from 80 parents and caregivers ranging in age from 23 to 59 years old ($M = 34.94$, $SD = 7.16$). The majority of adult participants were female ($n = 76$, 87.5%), 92.5% were biological mothers or fathers, and 7.5% were legal guardians that were not biological parents. Sixty boys and 20 girls, ages 5 to 13 years ($M = 7.9$, $SD = 1.6$), were evaluated and primarily diagnosed with ADHD (68.8%), Oppositional Defiant Disorder (21.3%) or Learning Disabilities (17.5%). Several children had more than one diagnosis, and a small percentage of children (5%) were given no diagnosis. Fifty-three point three percent of the participants reported a family income of less than $30,000. Over 95% of participants were Caucasian and 1.3% were African-American. Regardless of diagnosis, all assessment reports included at least three recommendations for addressing learning and/or behavior problems that prompted the referral.

Measures

ADHD Evaluation

The standard battery used at the ADHD Evaluation Clinic includes a number of different measures, including cognitive and ability testing, a computer-based test of attention, parent and teacher forms of behavior rating scales, a parenting stress measure, parent interview, child developmental questionnaire, and a school observation. Selected variables from assessment measures were included in the present study. Information from one of the behavior rating forms (BASC) was used in determining severity of child behavior problems from the parents' perspective. Results of the parenting stress measure were also used, as was demographic information provided in the developmental questionnaire. All other information was used in determining child diagnosis, but not specifically used for the present study.

Conners-March Developmental Questionnaire (CMDQ)

The CMDQ (Conners & March, 1999) is a self-report measure designed to provide a comprehensive description of a child's demographic information, including race, socioeconomic status, family constellation, educational history, family and child medical and psychiatric histories, and child developmental history. Household income was reported on a scale ranging from 1 to 11, in increments of $10,000 (e.g. 1 = *up to$10,000*; 11 = *over $100,000*). Information about parent education, race, and household income were gathered from this measure.

Behavior Assessment System for Children – Parent Response Scales (BASC-PRS)

The BASC-PRS (Reynolds & Kamphaus, 1998) is a 130-item, self-report measure on which a parent rates on a 4-point scale (*never*, *sometimes*, *often*, *almost always*) the frequency with which his/her child displays the behavior described by each item. The BASC-PRS includes composite and individual scales of a variety of behaviors. This study utilized the composite Externalizing Problems and Internalizing Problems scales. The Externalizing Problems scale provides an assessment of aggression, hyperactivity, and conduct problems, while the Internalizing Problems scale measures anxiety, depression, and somatization. In addition, the BASC-PRS includes a validity scale that assesses the respondent's tendency to provide excessively negative descriptions of his/her child's behavior. Subscale and composite scale information is presented in the form of *T* scores (mean = 50, SD = 10) and percentiles. Reynolds and Kamphaus (1998) reported that the composite scores show high internal-consistency and test-retest reliabilities, and the BASC-PRS displays concurrent validity with other measures of child behavior.

Parenting Stress Index (PSI) – Short Form

The PSI-Short Form (Abidin, 1995) is a 36-item, self-report scale on which parents rate on a 5-point scale (*strongly disagree*, *disagree*, *not sure*, *agree*, *strongly agree*) how much they agree that each item describes their child, themselves, or their current life situation. The PSI-SF is based on the assumption that parenting stress is determined by child and parent characteristics and interactions between parent and child. Abidin (1995) reported acceptable levels of test-retest and internal reliability for the scale. This measure includes four clinical sub-scales: Total Stress, Parental Distress (PD), Parent-Child Dysfunctional Interaction (P-CDI), and Difficult Child (DC). The Total Stress scale (test-retest reliability coefficient = .84, internal consistency coefficient alpha = .91) provides information on overall parenting stress level. It considers stress associated with a parent's role as a parent, including stress caused by the child's behavior, interactions with the child, and personal parental distress, not due to other stressors in the parent's life. The PD scale (test-retest reliability coefficient = .85, internal consistency coefficient alpha = .87) gauges a parent's distress related to feelings of incompetence as a parent, insufficient social support, feelings that his/her other life roles are restricted because of being a parent, negative interactions with the child's other parent, and depression. The P-CDI scale (test-retest reliability coefficient = .68, internal consistency coefficient alpha = .80) measures how a parent views his/her relationship to his/her child, with high scores indicating interactions are not reinforcing to the parent and that the parent-child bond has either never been adequately established or it is close to rupturing (Abidin, 1995). Finally, the DC scale (test-retest reliability coefficient = .78, internal consistency coefficient alpha = .85) assesses child behavioral traits that affect

how easy (or hard) it is to manage their behavior. The PSI-SF has been used in prior studies of treatment compliance by parents of children diagnosed with ADHD (e.g., Wells, Epstein, Hinshaw, Conners, Klaric, Abikoff, et al., 2000). All four clinical scales were examined as possible predictors of compliance.

Adherence Telephone Interview Form (ATIF; MacNaughton & Rodrigue, 2001)

The ATIF (See Appendix B) was developed by MacNaughton and Rodrigue for use in their study of parental compliance to recommendations given in their child's psychological evaluation. The ATIF begins with an explanation of what the interview will entail. Next, the interviewer reads the first recommendation from the psychological evaluation to the parent/caregiver and asks if she/he has completed that recommendation. Parents/caregivers are then asked to indicate if any of the following barriers made it difficult for them to complete the recommendation: Didn't think it would help, No longer a problem, Resources not available in my community, Transportation, Insurance, Time, and Forgot to do it. Finally, they are asked to provide any other reasons that they had difficulty following through on the recommendation. This process is then repeated for each recommendation provided in the psychological evaluation. MacNaughton and Rodrigue computed an intraclass correlation coefficient to assess interrater agreement on whether parents complied with recommendations. Two raters listened to 19 (20%) of the interviews and independently coded adherence. The intraclass correlation coefficient was .74. No information was provided on test-retest reliability.

For the present study, the ATIF was modified slightly in order to reflect the change in study site and to increase the information gathered (See Appendix C). Specifically, instead of the question "Did you complete this recommendation?" the

modified ATIF states "On a scale of one to five, with 1 being 'Not at all,' 3 being 'Somewhat,' and 5 being 'Completely,' please tell me how much you think you followed this recommendation." Several new questions were also added to the ATIF. Parents were asked to rate on a 5-point Likert scale how important they thought each recommendation was (1 = *Not important*, 3 = *Somewhat important*, 5 = *Extremely important*). Parents were also asked to indicate if their child's behavior had changed since the feedback session. Parents who indicated that their child's behavior had improved were asked to rate the level of improvement on a 5-point scale (1 = *A little better*, 3 = *Better*, 5 = *Much better*). Parents who indicated that their child's behavior had gotten worse were also asked to rate how much worse their behavior had become on a 5-point scale (1 = *A little worse*, 3 = *Worse*, and 5 = *Much Worse*). In addition, parents were asked if their child's teacher had told them that their child's in-school behavior had changed, and, if so, to indicate on the same 5-point scales how their in-school behavior had changed. Finally, parents were asked an open-ended question about what could have helped them better follow the recommendations.

Procedure

After the ADHD evaluation, diagnoses and recommendations for each child were developed through discussion of all test data by two psychologists and upper level graduate students. The primary evaluator then wrote an assessment report, including the diagnosis and recommendations. Parents were given copies of the report that included test scores and specific recommendations in the feedback session, and the evaluator explained how the diagnosis was arrived at, as well as details of each recommendation, answering any questions that caregivers might have had. All caregivers also were given

diagnosis-related information handouts during feedback and encouraged to call if they had any further questions regarding the evaluation or recommendations.

Participants were recruited for the study following their feedback session (see Appendix D). They were advised that participation was voluntary and that refusal to participate would have no negative consequences. They were informed that if they consented to participate, a research assistant would contact them by phone approximately 4 to 6 weeks after their feedback session. In addition, they were told that the information that they provided would be recorded without any identifying information. Parents were also asked to provide the phone numbers of, and permission to contact, two individuals who could provide parent contact information if the family relocated or changed their phone number (see Appendix E). Finally, parents/caregivers were asked to provide permission for the researchers to send them a letter if unable to contact them by phone (see Appendix F).

Parents completed the BASC-PRS behavior rating scale and PSI-Short Form as part of the ADHD assessment battery. Demographic information, including parent education and income, was also gathered as part of this battery. Within approximately two weeks of the evaluation, parents were contacted to schedule a feedback session at the Clinic to explain the results of the assessment, as well as provide recommendations for treatment. As discussed above, after the feedback session, parents were asked to participate in the study (see Appendix D). Those who consented were then asked to confirm their telephone number and to provide days and times that would be best for the research assistant to telephone them (see Appendix E).

Approximately 4 to 6 weeks after their feedback session, a research assistant telephoned the parents/caregivers. The research assistant was an upper-level undergraduate who was trained to administer the modified ATIF (see Appendix C). The interviewer had a copy of the recommendations that were given to the parents and used the modified ATIF to inquire about each recommendation. If the interviewer was unable to reach a participant by phone, then she sent them a letter asking that they contact the ADHD Clinic to schedule a time for the assistant to call them (see Appendix F). The research assistant also classified recommendations into the four types identified by MacNaughton and Rodrigue (2001) according to the criteria developed for their study (See Appendix A). For the first 30 participants, both the research assistant and primary investigator independently classified the recommendations, yielding inter-rater agreement of 100%.

Chapter 3

RESULTS

Power Analysis

Prior to beginning the study, a power analysis was performed to determine the number of participants needed to prevent Type 2 error in multiple regression analyses. The power analysis was based on the expectation that five independent variables would be used to predict compliance rates (i.e., parent education, family income, parent stress, parent report of severity of child behavior disorder, and total number of barriers reported) and indicated that 91 participants would be needed to detect a medium size effect at the .05 significance level. Given that the multiple regression analyses reported here are based on only two predictor variables (i.e., parent stress and total barriers), the present sample size of 80 participants was more than sufficient to detect a medium effect size.

Descriptive Statistics

Compliance

Participants received 3 to 8 recommendations per evaluation ($M = 5.15$, $SD = 1.1$). Rates of compliance were measured in two ways: in a dichotomous manner consistent with the work of MacNaughton and Rodrigue (2001) and using a Likert rating reflecting caregivers' reports of varying levels of compliance. Caregivers were asked to rate compliance with each recommendation on a 1 to 5 Likert scale, where 1 = "*Not at*

all," 3 = "*Somewhat*," and 5 = "*Completely*." The dichotomous compliance rate is a percentage derived from the number of recommendations that caregivers reported following to any extent divided by the total number of recommendations they received, (i.e., any level of follow-through versus no follow-though). For example, a parent who received 5 recommendations and rated his/her adherence level on the 5-point Likert scale as a "2" for two recommendations, "3" for one recommendation, "5" for one recommendation, and "1" for one recommendation, would be described as having an 80% dichotomous compliance rate [i.e., (1+1+1+1+0)/5 = .80]. The second rating of compliance reflects parents' reports of varying levels of adherence. Likert Scale scores were transformed from the 1 to 5 scale to a 0 to 4 scale. These transformed scores were then averaged and the resultant average divided by 4 to determine compliance rate. Hence, the same parent who received an 80% dichotomous compliance rate in the earlier example would be described as having a 40% Likert adherence rate [(1+1+2+4+0)/5 = 1.6; 1.6/4 = .40]. Using the dichotomous scale, the mean compliance rate was 81.5% (*SD* = 22.4%), whereas the Likert scale resulted in a mean compliance rate of 67.5% (*SD* = 23.1%). Table 1 presents mean compliance rates for the four categories of recommendations.

Barriers to Compliance

The vast majority of respondents (92.5%) reported encountering at least one barrier to compliance ($M = 2.6$, $SD = 1.7$). The most commonly reported barrier to compliance was lack of time to carry out the recommendation (see Table 2). The least reported barrier was lack of insurance coverage.

Table 1

Mean Recommendation Compliance Rates

	% Adherence Rate (*SD*)	
Type of Recommendation	Dichotomous	Likert
Active Self Help[a]	90 (30)	79 (32)
Professional-Nonpsychological[b]	88 (33)	78 (36)
School-Based[c]	78 (42)	61 (41)
Psychological Services[d]	72 (45)	58 (43)

[a]parent to initiate or engage in some form of active self-help strategy
[b]consult with a professional other than a mental health professional
[c]involving the school, tutoring, or school-academic related programs
[d]any type of psychotherapy or another psychological evaluation

Table 2

Common Barriers to Compliance

Barrier	Subjects reporting barrier (%)
Time	38.8
Lack of teacher cooperation	37.5
Resources not available in my community	28.8
Wanted to try behavioral interventions before medications	23.8
Waiting for appointment	18.8
Did not think it would help	13.8
Insurance	8.8

Note. Because caregivers could identify more than 1 barrier, total is greater than 100%

Importance of Recommendations and Ratings of Child Improvement

Caregivers rated 74.9% of recommendations as "Extremely important" ($M = 4.58$, $SD = .85$). There was no significant difference in parent ratings of importance for the various categories of recommendations (see Table 3).

Table 3

Importance of Recommendations to Caregivers

Recommendation Type	Range	*M*	*SD*
Active Self Help[a]	1 – 5	4.70	.70
Professional-Nonpsychological[b]	1 – 5	4.53	1.10
School-Based[c]	1 – 5	4.58	.81
Psychological Services[d]	2 – 5	4.42	.91

[a]parent to initiate or engage in some form of active self-help strategy
[b]consult with a professional other than a mental health professional
[c]involving the school, tutoring, or school-academic related programs
[d]any type of psychotherapy or another psychological evaluation

The majority of caregivers (76.3%) reported that they believed that their child's behavior had improved since receiving the recommendations. Thirty-nine caregivers reported that they had received feedback from their child's teacher about their child's behavior, and 90% of these indicated that behavior had improved (45% of the total sample; see Table 4).

Table 4

Changes in Children's Behavior

	Improved			Worsened		
	M	*SD*	*n*	*M*	*SD*	*N*
Caregiver	3.16	1.21	61	.71	1.50	2
Teacher [a]	3.60	1.09	35	3.25	2.06	4

Note. Caregivers provided all ratings above in response to the questions: "Has your child's behavior changed since the feedback session? Has your child's teacher told you that your child's behavior in school has changed?"
[a] based on feedback given to parents from teachers, n = 39.

Correlational Analyses

Relationships of Compliance Rates to Demographic Variables

More than 50% of participants came from households with incomes of $30,000 or less. However, neither income nor any other demographic variable was found to be significantly related to compliance rates (see Table 5).

Table 5

Pearson Correlations Between Demographic Variables and Compliance Rates

				Education	
	Household income[a]	Caregiver's age[b]	Caregiver's sex[c]	Child's mother[d]	Child's father[e]
Dichotomous	.16	.10	.17	.07	.13
Likert	.15	.14	.18	.09	.10

[a] $n = 75$, [b] $n = 78$, [c] $n = 80$, [d] $n = 69$, [e] $n = 59$

Relationships of Compliance Rates to Hypothesized Predictor Variables

Caregiver ratings of the severity of their children's behavior were quite varied, reflecting the diversity of the sample (i.e., participants included parents of children diagnosed with ADHD or ODD as well as parents of children diagnosed with neither disorder). BASC-PRS internalizing behavior composite scores (T score) ranged from 33 to 95 ($M = 52.63$, $SD = 13.77$), while externalizing behavior composite scores ranged from 38 to 97 ($M = 60.01$, $SD = 12.34$). Neither externalizing nor internalizing behavior composite scores were significantly related to rates of compliance (see Table 6). Caregivers also reported a wide range of parenting stress on the PSI-SF (Total Stress Standard Score $M = 64.67$, $SD = 29.22$) and only the Total Stress Scale on the Parenting

Stress Index was significantly related to adherence rates. Number of perceived barriers reported was significantly negatively correlated with both ratings of compliance.

Relationships of Compliance Rates to Exploratory Variables

There was a significant association between caregiver rating of the importance of the recommendation and compliance (Dichotomous $r = .27, p < .001$; Likert $r = .36, p < .001$). Likert compliance rate was significantly associated with the level of improvement reported by caregivers ($r = .34, p = .007$). Dichotomous compliance rate trended in the expected direction, although it was not significantly associated with improvement level ($r = .22, p = .086$).

Table 6

Pearson Correlations Between BASC-PRS, PSI-SF Scales, Total Barriers and Compliance Rates

Compliance Rates	BASC-PRS Externalizing	BASC-PRS Internalizing	PSI-SF[a] PD	PSI-SF[a] P-CDI	PSI-SF[a] DC	PSI-SF[a] TS	Total Barriers
Dichotomous	.03	.08	.18	.07	.19	.23*	-.45**
Likert	.05	.13	.21	.10	.21	.22*	-.62**

Note. BASC-PRS = Behavior Assessment Scale for Children – Parent Rating Scale. PSI-SF = Parenting Stress Index – Short Form; PD = Parental Distress, P-CDI = Parent-Child Dysfunctional Interaction, DC = Difficult Child, TS = Total Stress.
[a] $n = 78$
*$p < .05$ **$p < .001$

Compliance Rates for Parents/Caregivers of Children Diagnosed with ADHD and/or ODD

Previous research has indicated that parents of children with externalizing disorders (e.g. ADHD, Oppositional Defiant Disorder, Conduct Disorder) are more likely

to seek therapy services as compared to parents of children with other behavior problems (Cohen, Kasen, Brook, & Struening, 1991; Garralda & Bailey, 1988). Thus, it might be hypothesized that parents/caregivers of children diagnosed with an externalizing disorder may be more likely to follow through on assessment recommendations, as compared to parents of children given no diagnosis or a non-externalizing diagnosis (e.g. learning disabilities). Thus rates of compliance and factors associated with compliance were examined for the subset of parents/caretakers having a child diagnosed with ADHD and/or ODD ($n = 59$). Results were similar to those found for the total sample, except none of the PSI-SF scales were significantly related to compliance in this sub-sample. Caregivers reported a mean dichotomous adherence rate of 81.48% ($SD = 22.36\%$) and a mean Likert compliance rate of 67.50% ($SD = 23.05\%$). Results revealed that Total Barriers was significantly associated with compliance rates at magnitudes similar to the total sample (Dichotomous $r = -.40$, $p = .002$; Likert $r = -.56$, $p < .001$).

Multiple Regression Analysis

Entering demographic variables and parent ratings of the severity of their children's behavior problems as predictors in regression analyses also failed to yield any significant associations between them and compliance rates. PSI-SF Total Stress score and number of barriers were included as predictors in another regression analysis, entering Likert compliance as the dependent variable ($n = 78$ due to missing PSI-SF data for two participants). Results of this analysis (see Table 7) revealed that both variables were significant predictors of compliance and together accounted for 41% of the variance [adjusted $R^2 = .41$, $F(2, 75) = 26.40$, $p < .001$]. Number of barriers was the better predictor as it alone accounted for 36% of the variance.

Table 7

Summary of Regression Analysis for Variables Predicting Likert Compliance Rate

Variable	*B*	*SE B*	β
Total Barriers	-.080	.012	-.603**
PSI-SF Total Stress	.002	.001	.226*.

Note. PSI-SF = Parenting Stress Index-Short Form, $n = 78$
$^{*}p < .05$ $^{**}p < .001$

One-Way Analysis of Variance

In order to determine if there was a possible curvilinear relationship between parenting stress and compliance (i.e., if parents low and high on stress were more likely to comply with recommendations), a one-way analysis of variance was conducted examining rates of compliance, in which participants were grouped by level of parenting stress (i.e. participants grouped by PSI quartile). The results of this analysis were non-significant. Caregivers at all four levels of parenting stress reported very similar rates of Likert compliance.

A one-way analysis of variance was also conducted to evaluate the relationship between type of recommendation and each of the two compliance ratings (Dichotomous and Likert). Rates of compliance were found to be significantly related to the type of recommendation [Dichotomous $F(3, 406) = 4.71$, $p = .003$; Likert $F(3, 406) = 8.24$, $p < .001$)]. Dunnet's *C* post hoc tests were conducted to examine pair-wise differences (see Table 8). Comparing the dichotomous compliance rates, caregivers were more likely to comply with active self-help recommendations than school-based or psychological services recommendations. Similarly, comparing Likert compliance rates, caregivers were more likely to comply with active self-help recommendations than school-based or

psychological services recommendations, and they were more likely to comply with professional-nonpsychological recommendations than school-based or psychological services recommendations.

Table 8

Dunnet's C post hoc Pair-wise Comparisons of Mean Compliance Rates

	1		2		3		4	
Recommendation Type	D	L	D	L	D	L	D	L
1. School-based	-	-	-.12*	-.18*	-.11	-.17*	.06	.03
2. Active self-help	.12*	.18*	-	-	.02	.01	.18*	.21*
3. Professional-nonpsychological	.11	.17*	-.02	-.01	-	-	.16	.20*
4. Psychological services	-.06	-.03	-.18*	-.21*	-.16	-.20*	-	-

Note. D = difference in mean Dichotomous compliance rates; L = difference in mean Likert compliance rates.

*$p < .05$

Chapter 4

DISCUSSION

The current study was undertaken in order to examine factors that affect caregiver compliance with recommendations for their children's care following an ADHD evaluation. This study also considers whether recommendation compliance is associated with perceived child behavior change and further assesses the applicability and utility of the barriers-to-treatment model in recommendation adherence research. The barriers-to-treatment model was developed to guide research focused on compliance to treatment of children's externalizing behavior disorders and posits that barriers encountered by the children's caregivers affect compliance (Kazdin, Holland, & Crowley, 1997). The focus of the current study was on recommendation compliance, which may be conceptualized as a stage of change that precedes more active behavior change and focuses on processes involved in preparing to change behavior (i.e. making an appointment for treatment.) By considering factors associated with compliance with evaluation recommendations, and comparing these with factors previously found to be associated with treatment compliance, this study also seeks to determine if different factors or obstacles are associated with these different stages of change.

It was expected that parental stress, number of perceived barriers, and severity of child behavior disorder, together, would predict parental compliance rates, and that

greater levels of each of these variables would be associated with decreased adherence. Contrary to expectations, severity of child behavior disorder was not associated with compliance rates, even among the sub-sample of participants whose children had been diagnosed with externalizing disorders. Prior research has shown that greater severity of behavior disorder is associated with reduced compliance with treatment (e.g., Kazdin & Wassell, 1999; Kazdin & Mazurick, 1994; Brown et al., 1988), but MacNaughton and Rodrigue (2001) found no association between disorder severity and recommendation adherence. The lack of an association may be due to the greater demands associated with complying with treatment (e.g., attending several weeks of therapy sessions) as opposed to adhering to recommendations following a psychological evaluation (e.g., scheduling an appointment with a physician). Another possibility is that factors that influence caregiver compliance differ based on their level of motivation and preparedness for change (e.g. Stage of Change model; Prochaska et al., 1992). Factors associated with compliance while preparing for change may differ from factors associated with compliance to active change processes.

Parental stress and number of barriers were both significantly associated with compliance rates, accounting for 41% of the variance, but, also contrary to expectations, as parental stress increased, so did compliance. As with severity of behavior disorder, prior research has shown that greater stress is associated with reduced treatment compliance (Andra & Thomas, 1998; Kazdin & Mazurick, 1994). The finding that caregivers experiencing greater levels of stress were more likely to adhere to recommendations, however, is consistent with research showing that individuals experiencing higher levels of distress are more likely to seek out treatment (Cramer,

1999; Deane & Chamberlain, 1994), and further underscores the importance of specifying whether compliance research is focused on preparation or action processes of change. It may be that stress helps to motivate caregivers to follow recommendations for their children's care, but once they have begun treatment, the sources of those higher stress levels impede compliance (e.g. lack of funds impedes transportation to weekly appointments). Consistent with MacNaughton and Rodrigue (2001) as well as other research showing that caregivers experience barriers when seeking services for children (e.g. Bussing, Zima, Gary, & Garvan, 2003), caregivers reporting greater numbers of perceived barriers reported lower levels of compliance. Also consistent with MacNaughton and Rodrigue, number of reported barriers was the single most powerful predictor of compliance and accounted for 36% of the variance.

Almost all participants reported experiencing at least one barrier to compliance. The most commonly reported barrier to compliance was a lack of time to carry out the recommendations, which caregivers elaborated on as meaning either that they had not had the opportunity to carry out recommendations or they were waiting for an appointment with another service provider. It may be that contacting parents/caregivers 4 to 6 weeks after follow-up resulted in an over-reporting of this barrier and prevented other barriers from being detected. Lack of cooperation from children's teachers in carrying out school-based recommendations was the second most commonly cited barrier. One possible explanation for parent tendency to attribute blame to teachers may involve the self-serving bias. Responding to questions about compliance may have activated a self-serving bias (e.g., Campbell & Sedikides, 1999), which resulted in parents blaming their lack of adherence on the teacher rather than admitting that they had

not complied for other reasons. It is also quite possible that caregiver reports of lack of teacher cooperation were valid. Teachers may have been unwilling to incorporate behavior change recommendations into their classrooms because the recommendations came from a provider outside the school system, because they did not believe the recommendations would be helpful, or because they lacked resources to implement the suggested intervention (e.g. teacher felt she/he does not have time to monitor specific child behavior and complete the daily home-school report card).

Prior research that utilized a dichotomous measure of adherence to recommendations (any level of compliance versus no compliance) reported compliance rates of less than 70% (MacNaughton & Rodrigue, 2001). It was therefore hypothesized that this study would produce similar results. Caregivers in the current sample, however, reported a dichotomous compliance rate of 81.48%. One explanation for this finding is that the high rate of compliance with recommendations for self-help activities may have been an artifact of the ADHD Clinic feedback procedure. The most common self-help recommendation in the Clinic was that parents/caregivers educate themselves about ADHD and/or ODD. This recommendation was at least partly accomplished during the feedback session as parents/caregivers were provided with several handouts on ADHD/ODD and the content of these handouts was discussed in the context of suggesting specific behavioral parenting interventions (e.g. consistent rules, use of rewards and consequences). It may be that caregivers interpreted their participation in feedback as complying with this recommendation, and thus inflated the compliance rate for this type of recommendation as well as the overall compliance rate. It is also possible that parent/caregiver reports of compliance may have been affected by social desirability

factors. They may have inflated or exaggerated levels of compliance in response to the research assistant's inquiries in order to present themselves in a favorable light.

In addition to rating compliance in a dichotomous manner, the current study also utilized a Likert scale to asses varying levels of recommendation compliance. This was done to address criticisms of extant treatment compliance research indicating that such research has failed to adequately define compliance or measure varying levels of compliance (Vermeire, et al., 2001; Hatchett & Park, 2003). The Likert scale increased the precision of recommendation compliance rate measurement, and average compliance ratings on the Likert scale were less than 70%. The Likert scale may have reduced the impact of social desirability factors on reported compliance rates, and therefore provided a more accurate picture of adherence.

It was hypothesized that level of compliance would be associated with level of child behavior improvement reported by caregivers. Caregivers who reported greater compliance rates on the Likert scale also reported greater levels of improvement in their children's behavior, and the majority of caregivers reported such improvement. However, there was no significant association between dichotomous compliance rates and behavior change, likely because the imprecision of the dichotomous scale obscured the relationship. Caregivers who complied with recommendations to learn more about their children's difficulties may have become less critical of their children's behavior (i.e., interpreted poor listening skills as due to ADHD related deficits rather than misbehavior) and thus reported improvement based on adjusted expectations rather than actual child behavior change. It may be that caregivers who had made more effort to comply with recommendations spent more time interacting with their children and,

therefore, had more opportunity to observe positive changes. They also may have wanted to feel that their efforts were having an impact and so were more attuned to real change and/or they interpreted behavior as improved. Caregivers' compliance with recommendations to utilize behavior modification techniques (e.g., positive reinforcement) and/or start their children on medication may also have resulted in actual behavior change in the child.

Other research has suggested that parents/caregivers are more likely to comply with recommendations to see a physician for medication than other types of recommendations (King, et al, 1997; MacNaughton & Rodrigue, 2001). Study results failed to support this hypothesis, but this failure may have resulted from the ADHD evaluation clinic procedure described above that likely inflated self-help recommendation compliance rates. Analyses based on both types of compliance ratings showed that caregivers were more likely to comply with active self-help recommendations than school-based or psychological services recommendations, and rates of compliance with recommendations for active self-help or to consult with a nonpsychological professional were not significantly different. However, comparing Likert compliance ratings across types of recommendation showed that caregivers were more likely to comply with recommendations to consult with a nonpsychological professional (i.e., physician) than follow through with school-based or psychological services recommendations. Also as described above, it is likely that the Likert ratings are a more accurate reflection of compliance and allow greater detection of relationships between variables. As such, results may be interpreted to mean that participants were equally likely to follow recommendations for self-help or consulting with a nonpsychological profession and

more likely to adhere to these types of recommendations than school-based or psychological services recommendations.

Parents/caregivers rated almost all recommendations as at least "somewhat important" and almost three quarters of recommendations as "extremely important." Just as compliance rates were likely affected by social desirability factors, caregivers may have felt some pressure to rate recommendations as being at least "somewhat important" because they were speaking with a research assistant who was affiliated with the clinic that had provided the recommendations. It is also possible that the sample of caregivers who participated in this study were biased to see the recommendations produced from the evaluations as important. They voluntarily brought their children in for the evaluations, and it is unlikely that they would have done so had they not expected to receive some benefit from the evaluation. No type of recommendation was rated as more important than any other type. Recommendation importance was also positively associated with both compliance ratings indicating that caregivers were likely more motivated to comply with those recommendations that they believed were most important. Rating a recommendation as "important" may also reflect agreement with the recommendation, and therefore increased likelihood of compliance, as Bogardus et al. (2004) found in their study of caregivers of geriatric patients.

Implications of Results

Results of the current study suggest several implications for practice. The ADHD Evaluation Clinic where the study was conducted is a subspecialty clinic that primarily performs psychological evaluations. Results suggest that clinician assistance may often be necessary in following through on assessment recommendations. As such, it appears

that caregivers and children would benefit if assessments were undertaken as the first step in a treatment process, with the same clinician performing the assessment, developing recommendations, and providing treatment. In such ideal situations, the clinician would have greater opportunity to address barriers to compliance and help parents/caregivers to implement school-based recommendations.

If clinicians are providing only assessment services and not therapy services, then the following suggestions may be useful. Use of Motivational Interviewing techniques throughout the assessment and feedback may be effective in increasing the likelihood of compliance with recommendations (e.g., Miller & Rollnick, 2002). For example, during the assessment, clinicians may ask parents/caregivers about goals that they have for changes in their children's behavior and/or family system, as well as assess parent/caregiver readiness for change (i.e., Prochaska, et al., 1992). Clinicians could then tailor recommendations during feedback to help caregivers understand how following recommendations would help them to achieve their specific goals and thereby increase motivation to comply with assessment recommendations. Clinicians are also encouraged to assess caregivers' thoughts and feelings about their children's diagnoses and address any subsequent resistance to recommendations. In the event that a caretaker appears overwhelmed and/or minimally motivated during the feedback (e.g. asks no questions), clinicians may strongly advise that parents seek out the support of a child clinician to assist parents/caregivers in following through on treatment recommendations. Finally, clinicians providing only assessment services are encouraged to obtain informed consent to provide results of testing to the referral source (e.g. child's physician) as well as any

mental health providers currently working with the child (e.g. therapist or case managers) to facilitate consistency in care.

The strong association between caregiver rating of the importance of recommendations and recommendation compliance ratings further supports the suggestion that clinicians tailor recommendations to meet the needs and stated concerns of specific caregivers and children. In addition, the finding that higher levels of parental stress were associated with higher rates of compliance suggests that children whose behavior causes their caregivers less stress may be less likely to receive the treatment they need. It may be necessary for clinicians to strongly advocate to sanguine parents that further interventions are needed. Clinicians should also consider problem solving potential barriers to following through on assessment recommendations during the feedback session and/or encourage the client to contact the evaluator if they have any trouble implementing the recommendations. In particular, the large number of caregivers who identified lack of teacher cooperation as a barrier suggests that clinicians should discuss steps that parents can take if they encounter such resistance, and/or evaluators may suggest holding a meeting with parents and teachers to go over the recommendations.

Caregivers reported the lowest levels of compliance with recommendations for psychological services and greatest compliance with recommendations for self-help (e.g. education on parenting interventions) and seeking consultations with non-psychological professionals (i.e., physicians). As described above, the high reported rate of compliance with self-help may be due to the fact that parents were provided with numerous handouts/educational materials during feedback, which may have resulted in caregivers

indicating at least partial compliance with this recommendation based on the feedback process. Parent compliance with non-psychological professional consultation in the present study generally referred to a recommendation that parents consult with a physician regarding possible medication to treat symptoms associated with ADHD and/or ODD. If the first recommendation that parents adhere to is the recommendation for medication and the medication leads to improvement, it is possible that parents may be less likely to follow through with interventions requiring greater levels of parent time and energy, such as behavior modification. Since both behavioral and medical interventions are recommended by the American Academy of Pediatrics (Subcommittee on ADHD, 2001) and research indicates that children who receive both types of treatments tend to show greatest improvement (Adesman, 2003), clinicians should encourage caregivers/parents to implement medication interventions in conjunction with other behavioral and psychosocial interventions (Barkley, 2006).

A central argument of this study has been that psychological assessment loses much of its value if parents fail to adhere to recommendations. The present results are generally consistent with that assertion, as greater compliance was associated with greater reported improvement in children's behavior. Nonetheless, it may be argued that the evaluation itself also had value as an intervention, as parents reported greatest compliance with self-help recommendations provided in the feedback session, supporting Finn and Tonsager's (1997) assertion that evaluations serve a treatment function. This study, therefore, supports the continued use of evaluation by practicing psychologists and suggests that evaluators should be aware of the therapeutic impacts they can have and conduct their evaluations in ways to capitalize on this.

Limitations of Study

Limitations of this study must also be considered when evaluating the results. The ATIF (MacNaughton &Rodrigue, 2001) currently has no established norms or test-retest information and limited support for validity. The second most commonly reported barrier in this study, a lack of cooperation from teachers, was not among the seven specific barriers included in the ATIF. Rather, this barrier was elicited through the request for "other obstacles" that the parent may have encountered. Compliance was only assessed using the ATIF, which is a self-report measure. Study results may have been different if independently verifiable measures of compliance, such as checking with physicians to see if appointments had been scheduled and attended, had also been conducted. As mentioned above, the relatively short amount of time between receiving recommendations and the follow up telephone call resulted in most parents reporting that they simply did not have enough time to comply and likely obscured the impact of other barrier types.

Because of the location of the clinic where data were gathered, the majority of the children receiving services were Caucasian. Therefore, it cannot be determined if the results are generalizable to non-Caucasian families and parents. Participants also tended to come from families with incomes of less than $30,000 per year. The failure to find a relationship between socioeconomic status and compliance rates may have been due to lack of range of incomes and results may not be applicable to higher income families. In addition, because of the higher prevalence of ADHD in boys, 75% of the participants were caregivers of boys. Research has shown that among children diagnosed with ADHD, girls' parents are more likely to utilize services if their daughters display

symptoms of depression, while boys' parents utilize services if their sons are having difficulty with schoolwork and/or have higher numbers of ADHD symptoms (Graetz, Sawyer, Baghurst, & Hirte, 2006). As such, having a larger number of girls in the sample may have shown compliance rate differences associated with child gender. Also, almost all of the parents/caregivers responding to the ATIF interview were female. There is very little research that examines caregiver gender and parenting interventions (e.g., Arnold, O'Leary, & Edwards, 1997) and none that considers caregiver gender and compliance with treatment and or assessment recommendations. It is possible that the inclusion of fathers or other male caretakers may have contributed to different findings.

Comparison of participants to those lost to follow-up revealed another limitation. Although no demographic variables were found to be associated with compliance rates, the significant difference in education level of the mothers of children whose caregivers were lost to follow up and those who completed the study, as well as age between study participants and those lost to follow up, suggest that these variables could play a role in compliance and that the lack of significant associations may be due to homogeneity of the final sample.

Future Directions/Suggestions for Future Research

The two statistically significant predictors in this study, number of perceived barriers and parental stress, accounted for less than half of the variance in compliance rates, and stress accounted for only 5%. Like MacNaughton and Rodrigue (2001), the current study did not find severity of disorder or SES to be significant predictors of compliance. Nonetheless, the high level of variance still unaccounted for suggests that other variables must play a role in compliance. Because stress accounted for such a small

amount of variance, had the current study's sample been smaller, the association between stress and compliance may not have been detected. It may be that SES and disorder severity affect compliance, but that they have such a small effect size that a larger sample is required to detect those relationships. Therefore, future research should strive to include a greater number of participants. As mentioned above, the relative homogeneity of the final sample of participants in terms of income and education level also may have obscured relationships between these variables and compliance. A direct assessment of caregiver education level, in addition to mother and father education level in those cases where caregivers are not biological parents, would add to our understanding of its role in compliance. The unexpected result indicating that as parental stress increased, so did their reported compliance rates, suggests that future research should further explore the impact of parental stress on recommendation compliance. It is therefore suggested that future research continue to consider demographic variables, parental stress level, and other possible predictors, such as caregiver motivation level (i.e., Stage of Change; Prochaska et al., 1992) and agreement with recommendations.

Results of the current study support the use of the barriers-to-treatment model in research directed at understanding compliance with psychological assessment recommendations. Caregivers most frequently reported that they had not yet had the time to complete the recommendation, meaning either that appointments with other providers had to be scheduled after the follow-up period or that parents/caregivers had not had enough free time to make any effort to comply. As such, it is suggested that future studies include questions about both of these time issues, rather than simply asking if "time" was a barrier. It is also possible that other types of barriers were not reported

simply because parents had not yet had the opportunity to encounter them. Increasing the time between feedback and follow-up may increase the number and types of barriers reported and allow for further analysis into the relative impacts of different barrier types. The high number of caregivers reporting difficulty implementing school-based interventions due to lack of teacher cooperation leads to questions about why teachers refused to cooperate, and whether the expectation that parents/caregivers attempt to implement school-based recommendations without a clinician's assistance is appropriate. Future research should consider assessing teacher perceptions of barriers to treatment recommendations to better understand obstacles in the school setting. Future research may also wish to examine whether parents that receive assessment and therapy services from the same clinician report greater compliance, as compared to parents who receive assessment and therapy services from different clinicians.

As mentioned above, it may be that caregivers interpreted their participation in feedback as complying with the recommendation for self-help and thus inflated the compliance rate for this type of recommendation as well as the overall compliance rate. Thus, future research may include questions about how parents/caregivers followed through on recommendations that could be fulfilled in a variety of ways. For example, researchers could ask parents, "What did you do to follow through on the recommendation that you learn more about ADHD and its impact on child behavior?"

Also as mentioned above, the current study lacked an independently verifiable measure of compliance. Future research would likely benefit from inclusion of collateral reports from teachers and/or physicians and/or other service providers about caregiver adherence to recommendations.

Summary of Contributions of Study to the Current Body of Research

The current study supports the continued use of the barriers to treatment model in understanding caregiver/parental compliance to treatment recommendations. It also demonstrates the importance of rating compliance using a Likert scale or similar measure rather than classifying participants as either adhering to recommendations or not adhering to recommendations. In several analyses, the "either/or" (i.e., dichotomous) classification of compliance obscured relationships between predictors and compliance, as well as compliance and change in child's behavior following receipt of recommendations. Further, the current study shows that psychological evaluations and compliance with recommendations are associated with improvement in children's behavior, supporting their clinical utility.

APPENDIXES

APPENDIX A

Criteria for Classifying Recommendations (MacNaughton & Rodrigue, 2001)

Classification	Criteria
Psychological services	Any type of psychotherapy (e.g., individual, family, group, or behavior management training at a psychology clinic, child psychiatry clinic, or another mental health center) or a recommendation for another psychological evaluation
School-based recommendations	Any type of recommendation involving the school (e.g., meet or consult with school teacher), tutoring, or school-academic related programs (e.g., remedial reading programs)
Professional-nonpsychological	Any recommendation to schedule a consultation appointment with a nonpsychological professional (e.g., a pediatrician, physical therapist, or communicative disorders specialist) or to consult with or follow the recommendations of a professional other than a mental health professional
Active self-help	Any recommendation for the parent to initiate or engage in some form of an active self-help strategy, including following through with a specific strategy at home (e.g., buy and read a book, attend a community support group, implementation of home-based behavior management strategies)

APPENDIX B

Adherence Phone Interview Form

Subject #_____
Date of feedback session_____
Date phone interview completed_____

*Hi. My name is _____ and I am calling from the ***** research project at the University of Florida. We met with you approximately four weeks ago after your feedback session in the Psychology Clinic. Today I'd like to read to you the recommendations which were given to you during your clinic visit, and I would like you to tell me if you have followed through with each recommendation or not. I will then be reading you a list of things which may have made the recommendation more difficult to complete, and I would like you to respond yes or no as to whether or not each item was a problem for you. Remember, this information is confidential, meaning that it will not be shared with your psychologist or anyone else.*

The first recommendation was:
Recommendation #__:_____
_____
_____

Did you complete this recommendation? YES NO
Comments made by parent:_____
_____
_____

I will now read you a list of reasons some people have for not completing recommendations. Please think about each reason and decide whether it was a reason you had for not completing the recommendation, or if the item made it more difficult for you to complete the recommendation. If the reason was true for you please say "yes" and it the item was not a problem, please say "no."

(Read each option to parent and circle response.)

1. Didn't think it would help	YES	NO
2. No longer a problem	YES	NO
3. Resources not available in my community	YES	NO
4. Transportation	YES	NO
5. Insurance	YES	NO
6. Time	YES	NO
7. Forgot to do it	YES	NO

8. Was there any other reason that I didn't mention that made it more difficult for you to complete this recommendation?_____

_____
_____
_____

Now, I would like us to do the same thing with the remainder of the recommendations. First I will read you the recommendation then I will read you the list of reasons.

Recommendation #__:_____
_____
_____

Did you complete this recommendation? YES NO
Comments made by parent:_____
_____
_____
_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow.....

1. Didn't think it would help YES NO
2. No longer a problem YES NO
3. Resources not available in my community YES NO
4. Transportation YES NO
5. Insurance YES NO
6. Time YES NO
7. Forgot to do it YES NO
8. Was there any other reason that I didn't mention that made it more difficult for you to complete this recommendation?_____
_____
_____

Recommendation #__:_____
_____
_____

Did you complete this recommendation? YES NO
Comments made by parent:_____
_____
_____
_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow.....

1. Didn't think it would help YES NO
2. No longer a problem YES NO
3. Resources not available in my community YES NO
4. Transportation YES NO
5. Insurance YES NO
6. Time YES NO
7. Forgot to do it YES NO
8. Was there any other reason that I didn't mention that made it more difficult for you to complete this recommendation?_____

_____

_____

_____

APPENDIX C

Modified Adherence Telephone Interview Form

Subject #_____
Date of feedback session_____
Date phone interview completed_____

"Hello, is Mr./Mrs./Ms. _____ available (ask for person that signed the consent form)? *Hello,_____, my name is _____ and I'm calling from the ADHD Evaluation clinic at ISU. The day that you came for feedback on your child's evaluation at the ADHD clinic, you also agreed to participate in a study giving us some information on how your child was doing one month after the evaluation. Do you remember agreeing to a phone interview?* (If yes, proceed with telephone interview, if not, give more information to help parent remember what the study is about, length of phone interview, etc.) *You might remember that there were several suggestions or recommendations at the end of your child's evaluation that you probably discussed during the feedback session. I'd like to go over those recommendations and find out which of them have worked out for you and your child since the evaluation. We realize that not all of the suggestions or recommendations may have been helpful to you or that you may have run into problems in being able to follow through on the suggestions. After reading each recommendation, I'll be asking you how important you felt this recommendation or suggestion was for you and your child. I'll then ask to what extent you were able to follow through on that specific suggestion or recommendation. Lastly, I'll read you a list of things that may have gotten in the way of being able to follow through on the suggestion and ask you to tell me which items made it difficult for you to carry out the suggestion or recommendation. Does that make sense?* (Answer any questions they have about the interview process.) *Remember, this information is confidential. I will not tell the person who gave you these recommendations what you say today. All information that you give me today will be recorded by a number only not by using names or any other identifying information. I will give you a chance at the end of my interview to ask questions. If you have any specific concerns or questions about your child's care, then I can have Dr. O'Laughlin or one of the graduate student therapists at the ADHD Clinic call you back to answer your question. Does that sound okay?* (if yes, proceed with interview; if no, respond to questions and/or suggest that Dr. O'Laughlin or Samantha Thibodeau call the parent back to talk about his/her participation in the study.)

The first recommendation was:
Recommendation #__: _____

_____

_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?

(circle response)

1	2	3	4	5
Not important		Somewhat important		Extremely important

Comments made by parent:_____

_____

_____

_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:

(circle response)

1	2	3	4	5
Not at all		Somewhat		Completely

Comments made by parent:_____

_____

_____

_____

I will now read you a list of reasons some people have for not following recommendations. Please think about each reason and decide whether it was a reason you had for not following the recommendation, or if the item made it more difficult for you to follow the recommendation. If the reason was true for you please say "yes" and it the item was not a problem, please say "no."

(Read each option to parent and circle response.)

1. Didn't think it would help	YES	NO
2. No longer a problem	YES	NO
3. Resources not available in my community	YES	NO
4. Transportation	YES	NO
5. Insurance	YES	NO
6. Time	YES	NO
7. Forgot to do it	YES	NO

8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?*_____

_____

_____

_____

_____

Now, I would like us to do the same thing with the remainder of the recommendations. First I will read you the recommendation then I will read you the list of reasons.

Recommendation #__: _____

_____

_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?
(circle response)

1	2	3	4	5
Not important		Somewhat important		Extremely important

Comments made by parent:_____

_____

_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:
(circle response)

1	2	3	4	5
Not at all		Somewhat		Completely

Comments made by parent:_____

_____

_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow…….

1. Didn't think it would help	YES	NO
2. No longer a problem	YES	NO
3. Resources not available in my community	YES	NO
4. Transportation	YES	NO
5. Insurance	YES	NO
6. Time	YES	NO
7. Forgot to do it	YES	NO

8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?*_____

_____

_____

_____

Recommendation #__: _____

_____

_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?
(circle response)

1	2	3	4	5
Not important		Somewhat important		Extremely important

Comments made by parent:_____
_____
_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:
(circle response)

1	2	3	4	5
Not at all		Somewhat		Completely

Comments made by parent:_____
_____
_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow……

1. Didn't think it would help	YES	NO
2. No longer a problem	YES	NO
3. Resources not available in my community	YES	NO
4. Transportation	YES	NO
5. Insurance	YES	NO
6. Time	YES	NO
7. Forgot to do it	YES	NO

8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?*_____
_____
_____
_____

Recommendation #__: _____
_____
_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?
(circle response)

1	2	3	4	5

Not important Somewhat important Extremely important
Comments made by parent:_____
_____
_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:

(circle response)

1	2	3	4	5
Not at all		Somewhat		Completely

Comments made by parent:_____
_____
_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow……

1. Didn't think it would help YES NO
2. No longer a problem YES NO
3. Resources not available in my community YES NO
4. Transportation YES NO
5. Insurance YES NO
6. Time YES NO
7. Forgot to do it YES NO
8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?*_____
_____
_____
_____

Recommendation #__: _____
_____
_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?

(circle response)

1	2	3	4	5
Not important		Somewhat important		Extremely important

Comments made by parent:_____
_____
_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:
(circle response)

1	2	3	4	5
Not at all		Somewhat		Completely

Comments made by parent:_____
_____
_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow.....

1. Didn't think it would help	YES	NO
2. No longer a problem	YES	NO
3. Resources not available in my community	YES	NO
4. Transportation	YES	NO
5. Insurance	YES	NO
6. Time	YES	NO
7. Forgot to do it	YES	NO

8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?*_____
_____
_____
_____

Recommendation #__: _____
_____
_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?
(circle response)

1	2	3	4	5
Not important		Somewhat important		Extremely important

Comments made by parent:_____
_____
_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:
(circle response)

1	2	3	4	5

Not at all Somewhat Completely

Comments made by parent:_____

_____

_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow……

1. Didn't think it would help YES NO
2. No longer a problem YES NO
3. Resources not available in my community YES NO
4. Transportation YES NO
5. Insurance YES NO
6. Time YES NO
7. Forgot to do it YES NO
8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?*_____

_____

_____

_____

Recommendation #__: _____

_____

_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?
(circle response)

1 2 3 4 5
Not important Somewhat important Extremely important

Comments made by parent:_____

_____

_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:
(circle response)

1 2 3 4 5
Not at all Somewhat Completely

Comments made by parent:_____

_____

_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow.....

1. Didn't think it would help YES NO
2. No longer a problem YES NO
3. Resources not available in my community YES NO
4. Transportation YES NO
5. Insurance YES NO
6. Time YES NO
7. Forgot to do it YES NO
8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?*_____

_____

_____

_____

Recommendation #__: _____

_____

_____

On a scale of one to five, with 1 being "Not important," 3 being "Somewhat important," and 5 being "Extremely important," how important did you think this recommendation was?
(circle response)

1	2	3	4	5
Not important		Somewhat important		Extremely important

Comments made by parent:_____

_____

_____

On a scale of one to five, with 1 being "Not at all," 3 being "Somewhat," and 5 being "Completely," please tell me how much you think you followed this recommendation:
(circle response)

1	2	3	4	5
Not at all		Somewhat		Completely

Comments made by parent:_____

_____

_____

When you think about that recommendation, which of the following reasons may have made the recommendation more difficult to follow.....

1. Didn't think it would help YES NO

2. No longer a problem YES NO
3. Resources not available in my community YES NO
4. Transportation YES NO
5. Insurance YES NO
6. Time YES NO
7. Forgot to do it YES NO
8. *Was there any other reason that I didn't mention that made it more difficult for you to follow this recommendation?* _____

_____

_____

_____

_____

Finally, I'd like to ask you some questions about your child's behavior since the feedback session.

Has your child's behavior changed since the feedback session?

NO
YES – improved
YES – worsened

(If parent indicates that behavior has improved, say,) *I'd like you to rate on a 5-point scale how much you think your child's behavior has improved since the feedback session, with 1 = "A little better," 3 = "Better," and 5 = "Much better."*
(circle response)

1	2	3	4	5
A little better		Better		Much better

Comments made by parent: _____

_____

_____

_____

(If parent indicates that behavior has worsened, say,) *I'd like you to rate on a 5-point scale how much you think your child's behavior has gotten worse since the feedback session, with 1 = "A little worse," 3 = "Worse," and 5 = "Much worse."*
(circle response)

1	2	3	4	5
A little worse		Worse		Much worse

Comments made by parent: _____

_____

_____

_____

Has your child's teacher told you that your child's behavior in school has changed?

NO
YES – improved
YES – worsened

(If parent indicates that behavior has improved at school, say,) *I'd like you to rate on a 5-point scale how much your child's teacher has told you that your child's behavior has improved since the feedback session, with 1 = "A little better," 3 = "Better," and 5 = "Much better."*
(circle response)

1	2	3	4	5
A little better		Better		Much better

Comments made by parent:_____

_____

_____

_____

_____

(If parent indicates that behavior has worsened at school, say,) *I'd like you to rate on a 5-point scale how much your child's teacher has told you that your child's behavior has gotten worse since the feedback session, with 1 = "A little worse," 3 = "Worse," and 5 = "Much worse."*
(circle response)

1	2	3	4	5
A little worse		Worse		Much worse

Comments made by parent:_____

_____

_____

_____

As you can see, one of the things we're most interested in in this study is the things that get in the way of following recommendations that a therapist gives after an evaluation. What could have helped you follow the recommendations you were given?

_____

_____

_____

_____

_____

APPENDIX D

Consent to Participate

Dr. Elizabeth O'Laughlin, Ph.D. and Samantha Thibodeau, M.S. of the Psychology Department at Indiana State University are conducting a study to find out how children seen at the Indiana State University Attention-Deficit/Hyperactivity Disorder Clinic are doing one month after your feedback appointment. Parents/guardians who agree to participate will be asked to agree to a 20-30 minute phone interview. The phone interview would take place approximately one month after the feedback appointment.

Participants will be asked to provide a home phone number and days and times that you can be reached. You will also be asked to provide the name and phone number of two other people whom the researchers can contact to ask for contact information in the event that you move or change your phone number. You will also be asked to allow the researchers to send you a letter if they are unable to reach you by phone. Approximately four weeks after your feedback session, you will be contacted by telephone by a research assistant who will interview you by phone for 20-30 minutes. During the interview, you will be asked questions about changes in your child's behavior since the ADHD evaluation, as well as questions about steps you have taken to bring about changes in the problem behavior. All information gathered for this study will be kept confidential. It will be kept separate from your child's Clinic file and identified only by a code number. All researchers, including Dr. O'Laughlin, will review results identified by code number only. In this way, we will not have knowledge of specific client post-evaluation progress, unless you choose to contact Dr. O'Laughlin following

the evaluation to discuss problems or concerns. If a publication or presentation results from this study, no individual participants will be identified and only average results for groups of participants will be presented.

This study has been reviewed and approved by the ISU Institutional Review Board (IRB) as adequately protecting the rights of participants. Any concerns or questions regarding your rights and welfare as a research study participant may be addressed to the IRB chairperson at (812) 237-8217 or irb@indstate.edu. Questions specifically about this study should be directed to Liz O'Laughlin at (812) 237-2455 or Samantha Thibodeau at (812) 237-2445. Generally, participating in this study is no more risky than everyday activities. Benefits of participation could include the following: 1) getting answers to questions about recommendations that come up after the feedback session; and 2) helping further scientific understanding of the outcomes of psychological evaluations.

I, _____, the parent or legal guardian of_____
(print name) (print child's name)

have received a copy of this consent form describing the procedures and the risks and benefits of participating in this study. I understand that by signing this document I am consenting to participate in this study and to be contacted by the researchers in approximately 4 weeks. I also understand that I may withdraw from participation at any time.

_____ _____ _____
Participant's Signature Date Witness's Signature

APPENDIX E

Release of Information

I, _____, hereby give permission for a research assistant
(print name)
working with Dr. Liz O'Laughlin's research staff to contact me at my home phone number, _____, at the following days and times (please circle days and provide times):

Mondays _____

Tuesdays _____

Wednesdays _____

Thursdays _____

Fridays _____

Saturdays _____

Sundays _____

If the researchers are unable to contact me at that phone number, then I hereby also give them permission to contact _____ at his/her home phone number, _____, or _____ at his/her home phone number, _____, and to ask them for information on how to get in touch with me. I understand that my permission to contact these people will expire in 6 months.

The research assistant may also leave a message identifying himself/herself as calling from the ISU ADHD Clinic: (please circle) YES NO

_____ _____ _____
Participant's Signature Date Witness's Signature

APPENDIX F

Follow-Up Letter

Dear _____,

After your child's feedback appointment at the Indiana State University Attention-Deficit/Hyperactivity Disorder Clinic, you agreed to participate in a study being conducted by Dr. Elizabeth O'Laughlin, Ph.D. and Samantha Thibodeau, M.S. of the Psychology Department at Indiana State University to find out how children seen at the Clinic are doing one month after the feedback appointment. You agreed to having a research assistant phone you and administer a 20-30 minute phone interview. Unfortunately, the research assistant has been unable to reach you at the phone number and days and times you originally provided, (phone number: _____; days and times: _____ _____). Please call the ISU ADHD Clinic at 812-237-3317 to schedule a time for the assistant to call you and, if necessary, update your phone number.

If you are no longer interested in participating, please disregard this letter.

Thank-you for your cooperation,

Liz O'Laughlin, Ph.D.

Samantha Thibodeau, M.S.

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REFERENCES

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