Utilizing an Empirically-Supported Parenting Intervention in Rural Community Settings: an Investigation of Effectiveness, Mediators of Change, and Dropout

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This dissertation entitled
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Abstract

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Utilizing an Empirically-Supported Parenting Intervention in Rural Community Settings: an Investigation of Effectiveness, Mediators of Change, and Dropout (106 pp.)

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This project investigated the effectiveness of a behavioral parent training program utilizing empirically-supported parenting techniques (Barkley, 1997) with low-income families in a Mental Health Professional Shortage Area (U.S. Department of Health and Human Services, 2007), an underserved and understudied population. In addition, the study examined mediators of treatment effectiveness and factors associated with premature dropout. The overarching goals of the parenting intervention were to improve parent-child relationships and to prevent and/or reduce child behavior problems (e.g., noncompliance, oppositionality) through effective parenting practices. In all, eight parenting groups were facilitated by masters-level mental health clinicians across three Southeastern Ohio counties in non-clinical settings. Fifty-seven parents completed both the pre- and post-intervention questionnaires. Paired samples t-tests revealed that parents who attended at least four of eight sessions reported improved child behavior, increased family cohesion, enhanced parenting competence, increased sense of social reassurance of worth, reduced parenting stress, and more consistent discipline practices. The parents did not report a significant change with regard to perceived social guidance. However, the changes made by parents who continued in the program were not significantly different from those who attended three or fewer sessions. Parent age was the only variable related to premature dropout, such that younger parents were more likely to drop
out before attending at least four sessions. Treatment satisfaction and change in parenting self-efficacy, reassurance of worth, and parenting stress were not found to be mediators of the relationship between attendance and change in parenting practices. Further, reduction in inconsistent discipline was not found to mediate the relationship between attendance and change in child behavior. Results from this investigation will help to inform future behavioral treatments for noncompliant children in this region, and particularly parenting groups.

Approved: ____________________________________________________________

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Utilizing an Empirically-Supported Parenting Intervention in Rural Community Settings: An Investigation of Effectiveness, Mediators of Change, and Dropout

Recent national initiatives have called for increased emphasis on prevention and early intervention for mental health disorders (U.S. Department of Health and Human Services, 1999). This is partly the result of longitudinal studies suggesting that adolescents and adults with mental health disorders typically begin showing symptoms in early childhood (Pierce, Ewing, & Campbell, 1999). Similarly, unfavorable behavioral symptoms (e.g., hyperactivity, noncompliance, defiance) left untreated can lead to more serious antisocial behaviors (e.g., theft, aggression toward people, and destruction of property) and clinical diagnoses (e.g., Attention-Deficit/Hyperactivity Disorder, Oppositional Defiant Disorder, Conduct Disorder; Pierce et al., 1999). As such, the aim of prevention and early intervention is to thwart the emergence of serious psychiatric disorders.

In designing and delivering therapeutic interventions for children demonstrating disruptive behavior problems, researchers have consistently acknowledged the need to move beyond the individual child to recognize the context in which a child’s problems are exhibited (Bryant, Vizard, Willoughby, & Kupersmidt, 1999; Dishion & Andrews, 1995; Patterson, 1982; Pelham & Waschbusch, 1999). Indeed, individual therapy is often not a viable mode of change for a child who displays externalizing symptoms (Pelham & Waschbusch, 1999), because the benefits of child-only interventions for disruptive behavior typically do not generalize to other settings or to other problematic behavior (Farmer, Compton, Burns, & Robertson, 2002). Rather, many of the leading intervention
researchers who investigate children’s disruptive behaviors have shown that a change must be made in the child’s environment to address the factors that are maintaining the child’s misbehavior (Barkley, 1997; Bryant et al., 1999; Dishion & Andrews, 1995; Patterson, 1982). Thus, it is increasingly the case that psychosocial treatments for childhood behavior problems include other individuals in a child’s life as part, or as the main focus, of treatment. Indeed, parent-targeted treatments, namely behavioral parent training, hold the greatest empirical support for reducing child disruptive behavior problems (Farmer et al., 2002; Kazdin, 2005) in both highly controlled efficacy studies and in “real world” effectiveness studies conducted in clinical settings (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993; Brestan & Eyberg, 1998; Chambless & Hollon, 1998; Cunningham, Bremner & Boyle, 1995; Hutchings, Bywater, Daley, Gardner, Whitaker, & Jones et al., 2007). Despite the empirical support for parent training, one of the primary challenges is retention, with rates of dropout ranging from 40-60% (Kazdin, 1996). The following discussion will provide a review of the behavioral parent training literature.

*Behavioral Parent Training*

Behavioral parent training (BPT) is an intervention in which parents are taught principles and techniques to modify the behavior of their children (Kazdin, 2005). Through active discussion, modeling, role play, practice, and clinician feedback, parents learn how key behavioral principles such as positive and negative reinforcement can be utilized to manage child misbehavior (Barkley & Benton, 1998).
Research has established BPT as an empirically supported treatment for children displaying disruptive, oppositional, and aggressive behaviors with regard to reducing undesirable behavior in children and producing positive changes in parent behavior (Farmer et al., 2002; Kazdin, 2005; Maughan, Christiansen, Jenson, Olympia, & Clark, 2005; Pelham, Wheeler, & Chronis, 1998; Reyno & McGrath, 2006; Serketich & Dumas, 1996). Not only has BPT resulted in short-term gains, but research in this area has also documented the maintenance of BPT treatment gains over time (Maughan et al., 2005). More specifically, studies support the maintenance of many treatment gains at follow-up, including improved parent nurturance after 2-months (Brenner et al., 1999) and improved child behavior (i.e., reductions in antisocial and hyperactive behavior, and increases in self-control), parent behavior (i.e., improvements in nurturance and competence; and reductions in criticism of child), and parent well-being (i.e., reductions in depression and stress levels) 6-months after the intervention (Hutchings et al., 2007).

Indeed, parent training programs have been deemed well-established as a treatment for Attention-Deficit/Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD) (Brestan & Eyberg, 1998; Chambless, Baker, Baucom, Beutler, 1

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1 For more detailed information regarding BPT meta-analyses, see Appendix A1.
Calhoun, & Crits-Christoph et al., 1997; Division 53, American Psychological Association, n.d.).

There is research supporting the utility of BPT provided both on an individually basis (Anastopoulos et al., 1993; Cunningham et al., 1995) and in groups of parents (Brenner, Nicholson, & Fox, 1999; Cunningham et al., 1995; Hutchings et al., 2007; Irvine, Biglan, Smolkowski, Metzler, & Ary, 1999; Scott, Spender, Doolan, Jacobs, & Aspland, 2001; Taylor, Schmidt, Pepler, & Hodgins, 1998; Tynan, Chew, & Algermissen, 2004; Tynan, Schuman, & Lampert, 1999) compared to controls in the reduction of childhood behavior problems ranging from children merely possessing multiple risk-factors (e.g., low SES) associated with conduct problems (Cunningham et al., 1995; Hutchings et al., 2007; Irvine et al., 1999) to severe antisocial behavior (Scott et al., 2001). Further, group BPT has been shown to be superior to treatment-as-usual (TAU) in an outpatient children’s mental health center with regard to reducing parent-reported child misbehavior and parent treatment satisfaction for parents of children ages 3-8 years (Taylor et al., 1998). Of note, BPT has also been proven to be beneficial for parents of at-risk children or children without clinically significant mental health disorders (Cunningham et al., 1995).

Barkley’s Behavioral Parent Training Program

One example of an empirically-supported BPT program was created by Russell Barkley (1997). There is substantial empirical support for Barkley’s BPT protocol, which is described in the Procedures section below. However, few studies have evaluated his protocol with rural, low SES parents. Barkley (1997) determined that approximately 64%
of families with children diagnosed with ADHD or displaying serious problems with oppositionality will demonstrate clinically significant improvement or even recovery (i.e., movement into the normal range of behavior) after participating in his intervention. Further, an early longitudinal investigation of Barkley’s protocol in an individual setting supported its efficacy in reducing child behavior problems (i.e., improved ADHD symptoms) and improving parent functioning (i.e., reduced stress, increased self-esteem) at posttreatment and 2-month follow-up (Anastopoulos et al., 1993).

Although Barkley’s research has focused more heavily on adolescent youth diagnosed with ADHD (e.g., Barkley, Edwards, Laneri, Fletcher, & Metevia, 2001; Barkley, Guevremont, Anastopoulos, & Fletcher, 1992), other researchers have investigated outcomes associated with Barkley’s approach among a younger population (Haessly, 1994; Tynan et al., 2004; Tynan et al., 1999). In two separate studies, Tynan and his colleagues evaluated the effectiveness of Barkley’s protocol in comparison to a control group. In an urban population of parents of children ages 5-11 years with a diagnosis of ADHD and/or ODD, the overall effect size from pre- to post-treatment was 0.89 (Tynan et al., 1999). In a similar study but with a rural population, the average treatment effectiveness was 1.00 from pre- to post-test (Tynan et al., 2004). Taken together, these data suggest that Barkley’s model is effective at reducing child behavior problems in both urban and rural settings and across various ages.

**Group-Based Interventions for Parents**

There is evidence supporting the utility of BPT in both individual and group settings (Cunningham et al., 1995; Webster-Stratton, Kolpacoff, and Hollinsworth, 1988).
One known randomized, controlled study provided evidence for the superiority of group-based BPT over individually-administered BPT with regard to cost-effectiveness and child behavior improvement (Cunningham et al., 1995). There is also some evidence that group-based BPT may be superior to individual treatment-as-usual with regard to child behavior improvement and treatment satisfaction (Taylor et al., 1998). A recent meta-analysis comparing group-based to individually-administered parent training studies (Lundahl, Risser, & Lovejoy, 2006) reported that the delivery methods did not significantly differ with regard to changes in parent behavior or parent perceptions of child misbehavior. Overall, it has been well-documented that group-based interventions do indeed produce positive clinical outcomes. ²

Outcomes of Group-Based Parent Interventions

Research has demonstrated numerous benefits of parent participation in group-based interventions for childhood disruptive behavior problems. For instance, parents have reported increased perceived social support, high levels of treatment satisfaction, decreased levels of parent stress, improved parenting practices and family relationships, and increased parenting self-efficacy. As noted below, there are a host of possible outcomes associated with participation in group-based parent interventions.

² For more information regarding the relative effectiveness of individual and group interventions, please see Appendix A2.
Perceived social support. Parents who participate in group-based interventions report enhanced perceived social support (Gottlieb & Wachala, 2007), and the many physical and psychological benefits of high perceived social support are well-documented. For instance, parents who reported higher levels of social support also demonstrated improved parenting practices (Gottlieb & Wachala, 2007; Hashima and Amato, 1994; Watkins-Victorina, 2000), especially among parents who lived below the poverty level (Hashima & Amato, 1994). Furthermore, one study found that high levels of perceived social support was negatively correlated with parents’ stress, anxiety, and depression even after controlling for child’s problem severity (White & Hastings, 2004). This is important because parents’ well-being has been shown to be significantly related to parenting practices, which in turn have an effect on a child’s mental health and behavior (Gartstein & Sheeber, 2004; Watkins-Victorino, 2000).

Perceived social support has also been investigated as a mediating variable. As an example, perceived social support mediated the relation between child-related stressors and parental distress such that high levels of child-related stress was associated with lower levels of social support, which in turn was related to increased levels of maternal depression, anxiety, and hostility (Quittner, Gluekauf, & Jackson, 1990). More research is needed to determine whether perceived social support may mediate parent and child outcomes associated with group-based parent interventions.

Parenting stress. Parents of children exhibiting disruptive behaviors often report increased levels of parenting stress (Anastopoulos et al., 1993). The stress of dealing with a misbehaving child is exacerbated by other demands placed on the parent as a result of
the disruptive child (e.g., frequent phone calls from school, explaining their child’s behavior to other parents; Johnson & Reader, 2002). Alarmingly, parent stress has been identified as a significant predictor of harsh and permissive parenting practices (Watkins-Victorino, 2000). Given the negative ramifications of harsh and permissive parenting styles (see below), the value in seeking to reduce such stress is apparent. It has been well-documented that group-based parenting programs can lead to significant reductions in levels of parenting stress (Anastopoulos et al., 1993; Hutchings et al., 2007; Webster-Stratton et al., 1988).

Parenting practices. Parenting practices have been shown to be significantly related to a child’s behavior and mental health in both the short- (Arnold, O’Leary, Wolff, & Acker, 1993) and long-term (Freehan, McGee, Stanton, & Silva, 1991). More specifically, poor parenting practices (i.e., poor monitoring and supervision, harsh parenting, inconsistent discipline) have been repeatedly linked to antisocial behaviors in children and adolescents (Frick, Lahey, Loeber, Stouthamer-Loeber, Christ, & Hanson, 1992). Fortunately, there is substantial evidence that group-based parenting interventions can lead to reductions in negative parenting practices (e.g., spanking, criticism), increases in positive parenting practices (nurturing, praise; Brenner et al., 1999; Webster-Stratton, 1998), decreases in child conduct problems, and increases in child prosocial behaviors (Reid, Webster-Stratton, & Baydar, 2004).

Family relationships. Parent-child and family relationships in general are arguably the most important relationships in a child’s life, given the long-term influence of these early relationships on later relationships (Bowlby, 1969). There is some evidence
that individually-administered parent training interventions not only reduce child misbehavior but also help to improve family relationships (Adams, 2001; Barkley et al., 1992; Barkley et al., 2001; Long, Forehand, Wierson, & Morgan, 1994). However, the work that has been done examining the impact of group-based intervention on family relationships has focused on young adolescents rather than children (Dishion & Andrews, 1995; Irvine et al., 1999) and the results for its effectiveness are mixed. Clearly more research is needed with regard to how a commonly used BPT group-based intervention may improve family relationships among parents and their children.

**Parenting self-efficacy.** Parenting self-efficacy is defined as a person’s belief in his or her ability to handle tasks and issues related to parenting. A number of studies have revealed that participation in parenting groups leads to increased parenting self-efficacy (Tucker, Gross, Fogg, Delaney, & Lapporte, 1998). This is noteworthy because parenting self-efficacy is related to the quality of care the parent provides (Sanders & Woolley, 2005). Specifically, those with low parenting self-efficacy report using poor parenting practices (e.g., coercive discipline) to a greater extent than do parents with high parenting self-efficacy (Bugental & Cortez, 1988). Poor parenting self-efficacy has also been shown to significantly predict harsh, permissive, and inconsistent parenting practices even after controlling for other risk factors such as child behavior and maternal distress (Sanders & Woolley, 2005).

**Child behavior.** The efficacy and effectiveness of group-based parenting interventions has been well-documented in the reduction of childhood behavior problems ranging from children who possess multiple risk-factors (e.g., low SES) associated with
conduct problems (Cunningham et al., 1995; Hutchings et al., 2007; Irvine et al., 1999) to severe antisocial behavior (Scott et al., 2001). Studies also support the maintenance of treatment gains at follow-up (i.e., reductions in antisocial and hyperactive behavior, and increases in self-control) (Brenner et al., 1999; Hutchings et al., 2007).

Results are inconclusive regarding which children benefit the most from behavioral parent training. Some studies report that younger children benefit more (e.g., Dishion & Patterson, 1992), whereas others suggest that older children demonstrate greater change (i.e., elementary aged children benefited more than preschool aged children; Serketich & Dumas, 1996), and still others report that age does not influence outcome (e.g., Beauchaine, Webster-Stratton, & Reid, 2005; Lundahl et al., 2006). Similarly, while some studies report that children with greater problem severity at pretreatment make larger gains (e.g., Lundahl et al., 2006; Reid et al., 2004), others hold that these children benefit less from BPT intervention (e.g., Reyno & McGrath, 2006). More research is warranted to explore which interventions work for whom (Kazdin & Weisz, 2003).

Parent treatment satisfaction. Client satisfaction is becoming recognized as an essential component in the assessment of treatment outcome (Plante, Couchmen, & Diaz, 1995). Given that group-based parenting interventions require parents to implement in the home the behavioral strategies discussed during group, parent buy-in of the intervention is essential. In general, there is some preliminary evidence that treatment satisfaction tends to be high for group-based parent interventions even among high-risk populations (Taylor et al., 1998; Webster-Stratton, 1998). However, the extent to which treatment
satisfaction relates to outcome measures or if it may be a mediator of treatment outcome, has largely been unexplored in the parent training literature. One known study found no significant correlations between parent satisfaction and child symptom changes (Brestan, Jacobs, Rayfield, & Eyberg, 1999). Additional research is needed in this area to examine if treatment satisfaction may be related to other variables besides child behavior problems such as parenting stress, perceived social support, or premature dropout.

Conclusion. Clearly, there are numerous benefits associated with participation in group-based parenting interventions (e.g., enhanced feelings of social support; improved parenting practices, family relationships, and parenting self-efficacy; reduced parenting stress and child misbehavior; and high levels of treatment satisfaction). However, few studies have evaluated these variables across different cultural contexts such as a low-SES, Appalachian population while using Barkley’s (1997) BPT program. As such, more research is warranted in the area of group-based parenting interventions to improve clinical outcomes and to reduce premature dropout or poor attendance.

Cultural Considerations

The push for evidence-based practice by managed care has led to significant debate regarding the advantages and disadvantages of manualized treatments (Addis, Wade, & Hatgis, 1999). Manuals enhance internal validity and treatment integrity, allow for comparisons across contexts and formats, facilitate training, and contribute to the meaningfulness of replication studies (Lambert, 2004). However, if applied inflexibly, cultural sensitivity is sacrificed when a manualized approach is taken given that manualized treatments fail to integrate cultural factors with a one-size-fits-all approach.
(Kendall, Chu, Gifford, Hayes, & Nauta, 1998). This is particularly problematic as there is some research evidence that family and community cultural factors are implicated in parents’ perceptions and attitudes toward mental health treatment and also their beliefs about childhood mental health problems (e.g., Weisz, McCarty, Eastman, Chaiyasit et al., 1997). In this regard, response to interventions between various cultures will likely also differ. As noted previously, manualized treatments have historically utilized a one-size-fits-all approach and have not considered important familial and community cultural factors. This may be one contributing factor to the finding that treatments found to be highly efficacious in controlled research studies are later barely, or not at all, effective in ‘real world’ settings (Kazdin & Weisz, 2003, Weisz et al., 2005). This data highlights the need to consider for whom and under what conditions interventions work. One way to increase access and enhance utilization of mental health care is to provide services in community, rather than clinical, settings (Cunningham et al., 1995). The present study will utilize an Appalachian population, which has largely been ignored in the parent training literature. As such, a review of Appalachian culture and intervention findings from populations with high rates of poverty is offered below.

Appalachia Ohio

Recent national initiatives have called for the equitable dissemination of mental health services to underserved populations (e.g., New Freedom Commission on Mental Health, 2003). This project will serve Athens, Hocking, and Meigs Counties in Ohio, which are within the Appalachian region and have been deemed Mental Health Professional Shortage Areas (U.S. Department of Health and Human Services, 2007).
Not only are there few mental health professionals in the area but the area served in this project also has rates of mental health care utilization that are well below the national average (Arcury, Gesler, Preisser, Sherman, Spencer, & Perin, 2005). Prior research has noted some barriers associated with seeking services among Appalachian families. For instance, several studies have suggested that there is increased stigma surrounding mental health care among Appalachian families and that a possible contributing factor to this situation is a sort of distrust of individuals not from the region (e.g., Beaver, 1988).

The Appalachian region, which covers 200,000 square miles and extends from New York to Mississippi, was designated as such by the U.S. Congress in 1965 to highlight a portion of the United States that was in a chronically depressed economic state (The Rural and Appalachian Youth and Families Consortium, 1996). Approximately one third of Ohio’s counties are designated Appalachian. The present study will focus on three counties in the Southeastern region of Appalachia Ohio, which are particularly underserved and understudied.

There is evidence that Appalachian culture differs from mainstream American culture in terms of gender roles (Latimer & Oberhauser, 2005), parenting styles and expectations for children’s behavior (The Rural and Appalachian Youth and Families Consortium, 1996). Extant studies have shown that Appalachian parents generally hold less negative attitudes toward the use of corporal punishment (e.g., spanking) than do other American subcultures (Flynn, 1994). This is problematic for a number of reasons. Most notably, physical punishment is a risk factor for physical child abuse (Straus & Yodanis, 2000) as one study found that the majority of child abuse cases were instances
of corporal punishment that escalated out of control (Kadushin & Martin, 1981). Further, results of investigations revealed that this type of punishment is associated with externalizing behavior among children (e.g., Gunnoe & Mariner, 1997). Of note, research has shown that parenting interventions may increase parents’ use of positive discipline strategies and decrease the use of corporal punishment (Brenner et al., 1999).

Although this study will investigate the outcome of a parenting intervention among an Appalachian culture, the results of these findings may be quite similar to other rural communities, especially those with high rates of poverty and unemployment. The areas served by this project have rates of poverty and unemployment that exceed national averages (U.S. Census, 2008). Indeed, it has been well-documented that poverty is a risk factor for a number of child, parent, and family problems such as parental psychopathology (Conger, Wallace, Sun, Simons, McLoyd, & Brody, 2002), marital discord (Conger et al., 2002), and child behavior problems (McLoyd, 1998). Furthermore, individuals living in poverty often do not have the means to seek treatment for these problems. As such, people who need treatment the most often do not receive it. Poor individuals living in high poverty communities are often worse off than poor individuals living in affluent areas because there is reduced access to jobs and quality professional services such as health care and child care (McLoyd, 1998). Furthermore, when parents living in poverty or with low SES do obtain services, they are more likely to drop out of treatment prematurely (Kazdin, 1990), and they often do not experience the benefits from parenting interventions that others with higher SES do (Reyno & McGrath, 2006). Given these concerning findings, it is clear that research is needed to inform
interventions that will encourage attendance and participation among persons with low SES.

Limitations of Previous Work

Although a substantial amount of research has been conducted investigating parenting interventions for children with disruptive behavior disorders, there are still avenues to be explored. For instance, with regard to treatment effectiveness, Barkley’s (1997) program has substantial empirical support when individually administered. However, fewer studies have evaluated its effectiveness in a group setting. In addition, not all families benefit from BPT equally (Lundahl et al., 2006) and few studies have examined the effectiveness of BPT among an economically disadvantaged population with high rates of poverty and unemployment. As such, it is less clear how BPT may be of benefit to disadvantaged populations with few resources and parenting styles that may differ from those living in alternative conditions (e.g., higher SES populations, urban settings, areas that have greater access to mental health treatment). There is some evidence that family and community cultural factors are implicated in parents’ perceptions and attitudes toward mental health treatment and also their beliefs about childhood mental health problems (Weisz, McCarty, Eastman, Chaiyasit et al., 1997). Despite the identified differences from mainstream American culture with regard to parenting styles and attitudes (The Rural and Appalachian Youth and Families Consortium, 1996), the Appalachia subculture has largely been ignored in the parent training literature. In addition, prominent figures in the field of child psychology have declared that more research is needed to determine the mechanisms of therapeutic change.
(Kazdin & Weisz, 2003; Weisz, Sandler, Durlak, & Anton, 2005). Furthermore, the factors that mediate parent behavior change have yet to be examined. Finally, research has demonstrated that the fewer parenting sessions attended, the fewer positive outcomes reported by parents (Barkley, 1997), and about 40-60% of patients drop out of psychotherapy prematurely (Kazdin, 1996). More research is needed examining factors associated with premature dropout from parenting groups with rural, low-SES populations.

The Present Study

The current study addressed the aforementioned limitations of the parent training literature by examining the effectiveness of Barkley’s (1997) BPT program adapted to a group setting with primarily low-income families living in Mental Health Professional Shortage Areas (U.S. Department of Health and Human Services, 2007), an underserved and understudied population. In addition, this project investigated mediators of treatment effectiveness including parent behavior change, which have yet to be explored. Further, the study explored factors related to premature dropout using a rural, primarily low SES population.

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3 For a more detailed discussion of possible mediators of group-based BPT efficacy, see Appendix A3.

4 Additional information regarding the rationale and research support for the research questions can be found in Appendix A4.
The clinical aims of the project were to improve parent-child relationships and to prevent and/or reduce child behavior problems (e.g., noncompliance, oppositionality) through effective parenting practices. Additional goals included contributing to the parent training literature by employing an empirically-supported intervention with an Appalachian population with limited resources, and thereby contributing to the equitable dissemination of evidence-based mental health services to underserved populations (e.g., New Freedom Commission on Mental Health, 2003). In addition, given that the participants were parents of children with and without mental health diagnoses and children ranging in ages between 3-12 years, the results contribute to the prevention and early intervention literatures.

Method

Participants

Recruitment

Parents who resided in Athens, Hocking, or Meigs counties (Ohio) were recruited to participate in the present study. These counties are within the Appalachian region, have been declared Mental Health Professional Shortage Areas (U.S. Department of Health and Human Services, 2007), and have rates of mental health care utilization that are well below the national average (Arcury, Gesler, Preisser, Sherman, Spencer, & Perin, 2005). Census data from the year 2008 was obtained on the three counties that were served in this project (U.S. Census Bureau, 2008). The approximate populations were 63,000 persons in Athens county (92.9% Caucasian, 2.4% African American, and 2.2% Asian), 29,000 persons in Hocking county (96.4% Caucasian, 1.1% African
American, 0.2% American Indian) and 23,000 persons in Meigs county (97.4% Caucasian, 0.6% American Indian, 0.5% Hispanic) (U.S. Census Bureau, 2008). Each of these counties has rates of poverty above the national average of 15.4% among families with children under the age of 18 years (Athens – 27.4%; Hocking – 18.4%; Meigs – 31%) (U.S. Census Bureau, 2008).

Participants were recruited by flyers posted in local agencies, churches, social service organizations, schools, and public locations. Flyers were also sent home with all children attending public pre-schools and elementary schools in Athens, Meigs, and Hocking counties. Finally, ads were placed in two local newspapers and one local magazine.

In general, parents in the community with at least one child aged 2 to 12 years who wanted to participate in a parenting group aimed at preventing and/or reducing child disruptive behaviors were eligible to participate. There were no other inclusion or exclusion criteria.

Sample Characteristics

The sample was comprised of 72 parents who began the parenting program and completed Time 1 data (56 female, 16 male; 90.3% Caucasian, 1.4% Black, 1.4%

5 Please see Appendix B1 for a sample flyer.

6 Please see Appendix B2 for details about recruitment locations.
multiracial, 2.8% American Indian, 2.8% Hispanic). The majority of the participants were married (54.2%), 23.6% were single, 13.9% were divorced, 2.8% were widowed, and 5.6% were separated from his or her spouse. The parent participants ranged from 20 to 62 years of age (M = 36.74 years). Households ranged from 1 to 9 persons (M = 3.74). The mean family income was approximately $32,000 (ranging from $0 to $120,000). The percentage of families in each of Hollingshead’s (1975) socioeconomic status categories were as follows ranging from lowest to highest: 5 (26.4%), 4 (22.2%), 3 (27.8%), 2 (12.5%), and 1 (5.6%).

Characteristics of Participant’s Children

Each parent participant completed a number of questionnaires regarding their “most difficult to manage child” whom was chosen as the primary focus of the parenting intervention. Of the children selected, 72.2% were male, the mean age was 6.79 years (SD = 3.26). Approximately 37% of the target children were either in preschool or not attending school yet, 40% were in elementary school, and 22% were in middle school (range: no school - 7th grade). One-half of the children were identified by his/her parent as having been diagnosed with a medical or psychiatric disorder. The parent-reported disorders included ADHD (n = 23), ODD (n = 2), Bipolar Disorder (n = 13), Developmental Delay (n = 6), Posttraumatic Stress Disorder (n = 3), Central Auditory Processing Disorder (n=1), Reactive Attachment Disorder (n = 1), Schizophrenia (n = 2), Fetal Alcohol Syndrome (n = 1) and other medical disorders (n = 5). Approximately 40% of the identified children were parent-reported as taking at least one medication such as
an antipsychotic (n = 5), stimulant (n = 15), anti-convulsant (n = 5), non-stimulant (n = 1), or other medication for a medical condition (n = 3).

Measures

Demographics

A demographic questionnaire was created for this study to collect information regarding age, income, education, and cultural factors, including race and the length of time the participant lived in the Appalachian region.\(^7\)

Treatment Fidelity

Two measures of treatment fidelity were created for this study.\(^8\) The clinicians completed a detailed checklist of topics to be covered each session. In addition, a research assistant observed and completed a less-detailed fidelity checklist during 20% of the sessions to provide an additional measure of treatment fidelity.

Techniques Utilized Questionnaire

Designed for the purpose of this study, this questionnaire was used to gather information regarding the parents’ recall of the interventions discussed in previous sessions, which interventions the parents attempted over the course of the last week, how

\(^7\) See Appendix B3.

\(^8\) See Appendices B4 & B5.
often they attempted the techniques, how much of the reading parents completed, and how successful they felt in their parenting skills during the week.⁹

Social Provisions Scale

The Social Provisions Scale (SPS; Cutrona & Russell, 1987) is a measure of perceived social support on six key dimensions: attachment, social integration, reassurance worth, reliable alliance, guidance, and opportunity for nurturance (Weiss, 1974). Items are rated on a 4-point Likert scale ranging from 1 (not at all true) to 4 (completely true). Internal consistency across a variety of populations for the total scale has been found to be adequate ranging from .85 to .92, and test-retest alpha coefficients range from .64 to .76 for the individual subscales (Cutrona, 1986). Discriminant validity of the scale was supported in a study comparing the SPS to measures of mood, personality traits, and social desirability (Russell & Cutrona, 1984).

The full scale was administered during pre- and post-intervention data collection. Because of the relevance of the items for this study, a subset of questions was administered each session to capture perceived guidance from others (i.e., advice or information) and perceived reassurance of worth (i.e., recognition of one’s competence, skills, and value by others).

⁹ See Appendix B6.
Alabama Parent Questionnaire

The Alabama Parenting Questionnaire (APQ; Frick, 1991; Shelton, Frick, & Wootton, 1996) is a 42 item parent self-report measure assessing the following constructs: parent involvement, positive parenting practices, poor monitoring/supervision, inconsistent discipline, corporal punishment, and other discipline practices. Items are rated on a 5-point Likert scale ranging from 1 (never) to 5 (always). Internal reliabilities ranged from .67 to .80 for the subscales, except for the corporal punishment scale which was .46. Test-retest coefficient alphas across a 2- to 4-week time period ranged from .66 to .89 for the subscales (Shelton et al., 1996). Validity was demonstrated in a study in which the APQ was compared to social desirable responding (Shelton et al., 1996). The measure has been found to distinguish families of children with DBD diagnoses and those without a clinical diagnosis (Shelton et al., 1996). Hawes and Dadds (2006) reported that this measure is particularly relevant as a measure of change in the context of interventions focused on the modification of parenting practices given the specific parenting domains it measures.

Disruptive Behavior Stress Inventory

This 40-item inventory assesses child behavior problems and behavior-related family stress (DBSI; Johnson & Reader, 2002). The DBSI consists of two indices. The first one, number of stressors experienced, is calculated by summing the total number of stressors experienced during the past six months. For each item, “yes” is scored as 1, “no” is scored as 0. The index ranges from 0 to 40, with 40 indicating a large number of experienced stressors. The second index, the degree of stress, is calculated by summing
the ratings of the degree of stressfulness. Ratings are only given for stressors experienced (indicated by a “yes”). The ratings are measured on a 4-point scale from 0 (not at all stressful) to 3 (very stressful). The index ranges from 0-120; the higher the score, the larger degree of stress experienced. Internal consistency for the number of stressors index and the degree of stressfulness index are .93 and .96 respectively (Johnson & Reader, 2002). Test-retest reliability is .76 for the number of stressors index and .65 for the degree of stressfulness index (Johnson & Reader, 2002). The validity of the scale has been supported by the scale’s ability to discriminate between parents of children with and without ADHD (Johnson & Reader, 2002).

Family Environment Scale

The Family Environment Scale – Form R (FES; Moos & Moos, 2002) is a 45 item scale designed to help people describe their current family as they perceive it. Respondents mark each item as either “true” or “false”. The FES measures the following subscales: cohesion, expressiveness, conflict, achievement orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis, organization, and control. Internal consistency for the subscales ranges from .61 to .78 (Moos & Moos, 2002). Test-retest reliability over a two month period for the subscales ranges from .68 to .86 (Moos & Moos, 2002). The FES has demonstrated a moderate level of convergent validity in its relation to measures of family history of distress and family relationship functioning with a Hispanic sample (Negy & Snyder, 2006).
Parent Sense of Competence Scale

This 17-item scale (PSOC; Johnston & Mash, 1989) measures two dimensions of a parent’s sense of competence: parenting satisfaction and parenting efficacy. Items are rated on a 6-point scale ranging from 1 (strongly agree) to 6 (strongly disagree). Johnston and Mash (1989) reported Cronbach alpha coefficients ranging from .75 to .79 for the total measure and the two subscales. Support for validity has been documented in that the parenting satisfaction scale has been found to be significantly correlated with child behavior problems (Johnston & Mash, 1989). Another study also found support for the two subscales as distinct aspects of parenting self-esteem; thus, deeming the measure a valid and reliable measure (Ohan, Leung, & Johnston, 2000).

Ohio Scales

The Ohio Scales (Ogles, Melendez, Davis, & Lunnen, 2001) is a 48-item instrument composed of four scales designed to assess child problem severity, child functioning, parent hopefulness, and parent satisfaction with current mental health services. The problem severity scale consists of 20 items, rated on a scale ranging from 0 (not at all) to 5 (all of the time). The numbers are summed for a total score. A lower score indicates less problem severity. The child functioning scale consists of 20 items, and is rated on a scale from 0 (extreme troubles) to 4 (doing very well). The numbers are summed for a total score. A higher score indicates better functioning. Internal consistency for the various scales ranges between .71 and .97. The validity of the two subscales utilized in the present study (problem severity and functioning) has been supported by their correlation with the CBCL problem total score ($r(28) = .89$ and $r(28) = .77$; Ogles et
Evidence for discriminant validity was reported given the differences between community and clinical samples (Ogles et al., 2001).

**Therapy Attitude Inventory**

The Therapy Attitude Inventory (TAI; Eyberg, 1974; Brestan et al., 1999) is a 10-item measure of parent treatment satisfaction designed specifically for use with parent training interventions. In general, the questions assess two areas of treatment satisfaction: satisfaction with process and satisfaction with outcome. Respondents rate their degree of satisfaction with each item on a 5-point Likert scale. Scores range from 10 to 50, with 50 indicating total satisfaction. Studies have demonstrated its internal reliability (Cronbach’s alpha = .88 to .91) and discriminant validity (Brestan, et al., 1999; Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993). Further, 4-month test-retest has been shown to be high at .85 and external validity has been demonstrated with correlations of .36 to .49 between TAI scores and measures of treatment outcome such as improvements in child behaviors from pre- to posttreatment.

**Procedures**

Five Masters-level mental health clinicians from the surrounding community and Ohio University (O.U.) served as group facilitators. Each facilitator was trained on Barkley’s empirically-supported, manualized program by Dr. Heather Alvarez, a licensed clinical psychologist specializing in child externalizing behavior problems and parenting
Dr. Alvarez (Co-Investigator) and Rebecca Hellenthal (Principal Investigator) also trained project staff members to administer research measures for the parenting groups, including how to discuss confidentiality and how to review the consent forms with parents. Dr. Alvarez served as the clinical supervisor for the parenting groups led by non-licensed clinicians and provided technical assistance to the licensed clinicians.

Each parenting group met once per week for one and one half hours in the evenings for eight weeks. The provision of child care has been identified as a key factor in encouraging attendance at group-based parenting interventions (Smith, Gabard, Dale, & Drucker, 1994). As such, free on-site child care was provided for all groups to enhance attendance. Each session, two or three trained research assistants served as child care attendants.

The facilitator began Session 1 with a greeting, explanation of the program, informed consent, group member introductions and disclosure of primary parenting difficulties, and Time 1 data collection. At the end of the first session, each family was given reading materials to introduce them to the program and to familiarize them with the topics to be covered during Session 2. All parents who returned for a second session were given Barkley and Benton’s (1998) parent manual (regardless of which session they attended). Sessions 2 through 8 were devoted to content from Barkley’s Defiant Children

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10 Please see Appendix B14 for additional information regarding the training.

11 See Appendices B15 & B16 for project consent forms.
(1997) manual in a circumscribed fashion. During Session 8, material from Barkley’s manual was covered and then parents completed Time 2 data.

Parent sessions were designed to be engaging, promoting participation and active discussion by all members. Sessions 2 through 7 included questionnaire completion, some didactic material, discussion, and structured activities to reduce the likelihood of parent fatigue during sessions. Further, an 8-week timeline was utilized as opposed to the typical 10-12 week group duration to help reduce long-term fatigue of the program. The use of fewer sessions has been supported in a recent meta-analysis as even more effective than studies using more treatment sessions (Maughan et al., 2005). Please see Table 1 for a tabular description of session content.

Data Collection

All families who were referred or who were self-referred after obtaining a recruitment flyer contacted the Principle Investigator via telephone to obtain additional information about the program and to be screened for intervention appropriateness (i.e., Are they experiencing difficulties with child noncompliance or disruptive behavior?). Parents were informed that the program included a reading component. After interested parents were informed of the details of the project, verbal consent was obtained to add them to the roster for the next available group. Parents were informed that participation in the groups and completion of research questionnaires would be voluntary. Participants were also informed that they would not be forced or coerced to share personal information or stories with the group. Only one parent did not want to participate in the
research component of the project, and while she was still permitted to participate in the group, she did not return.

Data were collected in an anonymous fashion as parents utilized a code on all forms except the consent form, which was kept separate from all other forms. This personal code allowed for data from a single participant to be aggregated (i.e., a repeated measures design) without the participant’s name being revealed. Consent was reviewed more thoroughly during the first parenting session and parents signed the consent form at that time. After consent was obtained, pre-intervention surveys (including the demographic questionnaire, Social Provisions Scale, Alabama Parent Questionnaire, Disruptive Behavior Stress Inventory, Family Environment Scale, Parent Sense of Competence, Ohio Scales) were administered. Post-intervention data collection included a re-administration of all pre-intervention measures without the demographics questionnaire and with the addition of the Therapy Attitude Inventory to assess for treatment satisfaction. All participants were given the opportunity to have the facilitator read the questionnaires aloud.

In addition to the pre- and post-intervention questionnaires, data was collected on a weekly basis. Each week, parents completed a portion of the Social Provisions Scale (reassurance of worth and guidance subscales) and a survey (TUQ) to determine parent recall of intervention material from the prior week, how much of the parent book the parents read, and application of intervention strategies (e.g., which intervention(s) parents’ attempted in the home over the course of the last week, how often they used these activities, and how successful they felt about utilizing the techniques) at the
beginning of every group session. Clinicians completed a weekly fidelity checklist. Finally, a research assistant observed 20% of the groups (two of eight sessions for each group) and completed a fidelity checklist.

Parents were compensated $15 for completion of the pre- and post-intervention questionnaires (i.e., a total of $30). Parents who did not attend the final parenting session (when the post-intervention questionnaires were completed) were mailed a questionnaire packet, asked to return it via U.S. Mail, and then were compensated $15 by check through the U.S. Mail (n = 14). Please see Table 1 for a tabular description of data collection.

Intervention Design

Russell Barkley’s BPT program was utilized in the present study. Barkley has published his program in two formats: a clinician’s manual (Defiant Children: A Clinician’s Manual for Assessment and Parent Training, Barkley, 1997) and a parent self-help book (Your Defiant Child: Eight Steps to Better Behavior, Barkley & Benton, 1998). Parents were given the self-help book and asked to read portions of the book each week for homework. The clinician and parent manuals present very similar content. However, the parent manual is written in a parent and/or layperson-friendly manner.

12 Please see Appendix B17 for a more detailed discussion of Barkley’s program, including reading level of the parent manual and justification for its use in this project.
Barkley’s intervention addresses the following parenting techniques in both the clinician and parent manuals: understanding why children misbehave, paying attention to your child’s positive behavior, using praise, response/cost, time out, managing misbehavior in public, and handling future behavior problems. Please see Table 1 for a tabular description of session content. Further, the clinical aims of Barkley’s (1997) intervention are as follows:

1. To improve parental management skills and competence in dealing with child behavior problems, particularly noncompliant or defiant behavior.
2. To increase parental knowledge of the causes of childhood defiant behavior and the principles and concepts underlying the social learning of such behavior.
3. To improve child compliance with commands, directives, and rules given by the parents.
4. To increase family harmony through the improvement of parental use of positive attention and other consequences with their children; the provision of clear guidance, rules, and instruction to those children; the application of swift, fair, and just discipline for inappropriate child behavior; and general reliance on principle-guided parenting behavior (p. 3-4).

Results

The following section will outline the results of the statistical analyses conducted for this project. First, preliminary analyses were conducted to evaluate attendance to the groups, fidelity to the treatment program by the therapists, and the normality of the
distributions for each measure. Next, results for each of the three research foci will be provided.

**Preliminary Analyses**

**Descriptive Statistics**

The present sample is an at-risk sample on most dimensions. For instance, on the Cohesion subscale of the Family Environment Scale, the present sample achieved a mean score of 6.22, which falls between the means offered in the FES manual for normal ($M = 6.61$) and distressed families ($M = 5.03$). Similarly, on the Ohio Scales Symptom Severity scale, the mean score for the present sample ($M = 23.06$) fell between the community ($M = 10.29$) and clinical ($M = 39.35$) samples reported in the manual. Furthermore, on the Disruptive Behavior Inventory, the present sample achieved a mean score of 8.64 stressors, which falls between the normal ($M = 8.00$) and ADHD ($M = 9.60$) samples reported in Johnson and Reader (2002) article. Descriptive statistics of outcome measures for the entire sample are presented in Table 2.

**Attendance**

Of the 99 participants who agreed by telephone to take part in a parenting group, 27 (27.27%) failed to start the program and 25 failed to complete the program after attending fewer than four sessions. Participants who attended fewer than four sessions (i.e., less than 50% of the sessions) were considered “dropouts” and those who attended four or more sessions (i.e., 50% or more) were considered “continuers”. Previous research on completion of parenting programs has utilized a similar method of defining dropout and completion of group therapy (Frankel & Simmons, 1992; Friars & Mellor,
The dropouts attended an average of 1.76 sessions (i.e., $M = 2.64$ intervention hours), and the continuers attended an average of 6.21 sessions (i.e., $M = 9.32$ intervention hours). As such, the dropouts formed an untreated group, to which the continuers of the program could be compared.

In sum, 72 participants started the program, 47 people (65.28%) continued with the program, and 25 people (34.72%) dropped out prematurely. All participants (dropouts and continuers) were invited to complete the Time 2 questionnaire packet. Forty-eight percent of the dropouts ($n = 12$) returned their Time 2 data and 95.74% of the continuers ($n = 45$) completed the Time 2 data. Attendance varied considerably by session (see Table 3), with four sessions being the mean number attended by the entire sample ($SD = 2.40$, $Mdn = 5$, range = 1-8).

Independent samples $t$-tests were conducted to explore any potential differences between dropouts who completed Time 2 data and those who did not. Utilizing data collected from dropouts, demographic factors (e.g., SES; child age, gender, grade, number of diagnoses; parent age, gender, race, marital status, employment status, level of education; and household income) and Time 1 data (e.g., perceived social support, family functioning, parenting stress, parenting sense of competence, child symptom severity, and parenting practices) were evaluated as dependent variables. Dropouts who returned Time 2 data differed from those who did not return Time 2 data on only one variable: inconsistent discipline (APQ; $t(23) = -2.13$, $p = .04$). Dropouts who returned Time 2 data reported using more inconsistent discipline practices at Time 1 compared to the dropouts who did not return Time 2 data. Given that those who returned Time 2 data differed from
those who did not on only one factor at Time 1, it is not likely that the missing data would have significantly influenced the overall results of the study.

Fidelity to Barkley’s Program

Analyses were conducted to explore the extent to which the clinicians followed Barkley’s BPT program adapted to a group format by the Principal Investigator. Recall, research assistants observed two of eight sessions (20%) completing a brief fidelity checklist, and clinicians completed a more in-depth fidelity checklist after each session. Observers reported that clinicians discussed an average of 98% of the session topics, and clinicians self-reported that they discussed somewhat less of the outlined material ($M = 80\%$). One clinician (the Principal Investigator), who conducted half of the groups, reported addressing 85% of the sessions topics, whereas the other four clinicians, who conducted one session each, reported discussing between 73 and 77% of the topics.

Testing Statistical Assumptions

An evaluation of the normality of the distributions revealed that all variables were significantly skewed except the parenting self-efficacy measure (PSOC), as delineated by the non-significant Kolmogorov-Smirnov test of normality (PSOC, $p = .20$). Skewed distributions are to be expected when utilizing psychological measures with a normal population. Log transformations were able to make just two of the seven key variables (Ohio Scales symptom severity and DBSI stress degree) normally distributed. Generally, analyses using the log transformed data for Ohio Scales symptom severity and DBSI stress degree provided the same results, with one exception noted. Therefore, all results were presented using original data. The one difference in results using transformed data
was noted in the text. Using skewed data increases the chance of Type II error, because findings are generally diminished with non-normal samples (Tabachnick & Fidell, 2001). In other words, it is possible that significant effects could have gone undetected as a consequence of the skewed data.

*Intervention Effectiveness*

To evaluate the effectiveness of Barkley’s *Defiant Children* (1997) program adapted to a group format, paired-samples *t*-tests were conducted to compare the means of Time 1 data to Time 2 data for seven dependent variables targeted by Barkley’s parent training program: child behavior severity (Ohio Scales Symptom Severity), degree of parenting stress (DBSI), inconsistent discipline practices (APQ), parent sense of competence (PSOC), sense of social guidance (SPS), reassurance of worth (SPS), and family cohesion (FES). A Bonferroni adjusted alpha level was used to reduce Type I error by accounting for multiple *t*-tests (.05/7 = .007). See Table 4 for results of the analyses utilizing treatment continuer data (dropouts were excluded from these analyses).

The results revealed that parents who participated in the parenting intervention reported significantly improved child behavior, increased family cohesion, enhanced sense of parenting competence, reduced parenting stress, a greater level of social reassurance of worth, and a decrease in inconsistent discipline practices. Parents did not report a significant change with regard to perceived social guidance.

Given that some of the untreated group returned their Time 2 data, analyses were conducted to determine whether the impact of the intervention was different for dropouts and continuers, mixed between-within subjects analysis of variance was performed (see
Table 5). The between-subjects variable was completion status (dropouts versus continuers), the within-subjects factor was time (time 1 versus time 2) and the following seven dependent variables were investigated: child behavior severity (Ohio Scales Symptom Severity), degree of parenting stress (DBSI), inconsistent discipline practices (APQ), parent sense of competence (PSOC), sense of social guidance (SPS), reassurance of worth (SPS), and family cohesion (FES).

Results revealed a significant main effect for time using a Bonferroni adjusted alpha level of \( p < .007 \) for five of the seven dependent variables (family cohesion, parenting self-efficacy, social reassurance, inconsistent discipline, and parenting stress), indicating that there was a change in the aforementioned dependent variables from Time 1 to Time 2 in the anticipated direction. There was not a significant main effect for time for social guidance or child behavior severity. There were no significant main effects for group indicating that there was no significant difference in the seven dependent variables between dropouts and continuers. The interaction effect is the most important of the results for this statistic because it would reveal whether the continuers made greater gains from Time 1 to Time 2 compared to the dropouts (an untreated group). The results revealed only one significant interaction effect using a Bonferroni adjusted alpha level of \( p < .007 \): parent sense of competence (PSOC; \( F(1,55) = 7.82, p = .007 \); Wilks’ Lambda = 0.87; partial eta squared = 0.12). Contrary to predictions, an inspection of the mean scores indicated that dropouts (Time 1: \( M = 57.92, SD = 6.46 \); Time 2: \( M = 72.42, SD = 10.77 \)) reported a greater improvement in parenting sense of competence compared to continuers (Time 1: \( M = 65.58, SD = 10.44 \); Time 2: \( M = 71.03, SD = 11.43 \)). Of note, \( t- \)
tests revealed a significant difference at Time 1 between these two groups with dropouts reporting significantly less competence than continuers. Please see Table 6 for means and standard deviations for dropouts and continuers separately at Time 1 and Time 2.

*Factors Associated with Dropout*

To investigate factors associated with premature dropout, the relationships between completion status (i.e., continuers versus dropouts) and the following factors selected based on previous research\(^\text{13}\) were evaluated using Pearson correlation coefficients: SES, parent education, number of parents in the home, parenting stress at Time 1, and severity of child behavior at Time 1. None of these factors were found to be significantly related to dropout. Exploratory analyses revealed a moderate, positive correlation between parent age and completion status \((r = .36, n = 72, p < .01)\) such that younger parent age was related to premature dropout (only 13% shared variance). No other variables were significantly related to completion status.

When utilizing log transformed data for Ohio Scales (child behavior symptom severity), there was a small, positive correlation \((r = .24, n = 71, p = .05)\), indicating that parents who reported greater child behavior severity at Time 1, attended more parenting sessions. However, the coefficient of determination indicates that child behavior severity helps to explain only 6% of the variance in attendance.

\(^{13}\) See Appendix A4 for a review of previous research on factors associated with dropout.
Exploration of Treatment Mediators

Five mediation models of treatment outcome were investigated utilizing data from the entire sample.\textsuperscript{14} Difference scores were created to evaluate the parents’ change in various outcome questionnaires from Time 1 to Time 2. Treatment satisfaction (TAI) at Time 2 and the changes in parenting self-efficacy (PSOC), reassurance of worth (SPS), and parenting stress (DBSI) were explored as mediators of the relationship between attendance and changes in parenting practices (APQ: inconsistent discipline). In addition, change in inconsistent discipline was evaluated as a mediator of the relation between attendance and improved child behavior.

Baron and Kenny (1986) provide the following four criterion that must be met for a variable to be considered a mediator: 1) the independent variable (attendance) must be significantly related to the dependent variable, 2) the independent variable must be significantly related to the mediator, 3) the mediator must be significantly related to the dependent variable, and 4) the effect of the independent variable on the dependent variable must significantly decrease after controlling for the mediator (Baron & Kenny, 1986). To evaluate the fourth criteria, post-hoc probing using Sobel’s methods outlined by Holmbeck (2002) should be conducted to determine whether the drop in the total effect is significant upon entering the mediator into the model. A variable would be

\textsuperscript{14} Please refer to Appendix A4 for a detailed discussion of these models.
considered a mediator if it significantly reduced the effect of attendance on outcome measures.

Two standard multiple regression analyses were preformed. First, attendance was entered as the independent variable and change in child behavior severity was entered as the dependent variable. Second, attendance was entered as the independent variable and change in inconsistent discipline was entered as the dependent variable. These analyses revealed no significant relationships. Therefore, the mediation models were not evaluated because criteria 1 and 2 were not met.

The aforementioned regression analyses were also conducted using Time 2 data (rather than difference scores) with the same null result. Further, regression analyses were conducted using treatment continuers only, and the same null result was obtained.

Discussion

The present study investigated the effectiveness of a behavioral parent training program utilizing empirically-supported parenting techniques (Barkley, 1997) with low-income families in a rural, Mental Health Professional Shortage Area (U.S. Department of Health and Human Services, 2007), an underserved and understudied population. The study further contributes to the literature as it was implemented in non-clinical settings (e.g., community centers, churches, schools), and few BPT studies have been conducted in this manner (McCart, Priester, Davies, & Azen, 2006). This is noteworthy because providing services in the community could serve to increase access and enhance utilization of mental health care (Cunningham et al., 1995). In addition, the study examined mediators of treatment effectiveness and factors associated with premature
dropout. A discussion of the findings with regard to each of the three research foci follows. Limitations of the present study as well as future directions are offered.

**Intervention Effectiveness**

The present study found that parents who attended at least four parenting sessions (i.e., “continuers” who attended an average of approximately 6 sessions or 9 hours of intervention) reported statistically significant improvements in the following areas: child symptom severity, family cohesion, parenting competence, parenting stress, social reassurance of worth, and inconsistent discipline practices. These parents did not report significant change with regard to their sense of social guidance. However, the parents who continued with the program did not demonstrate significantly better outcomes compared to those parents who attended three or fewer parenting sessions (i.e., “dropouts” who attended an average of approximately 2 sessions or 2.5 hours of intervention). Furthermore, the dropout group actually made greater gains than the continuer group with regard to parenting sense of competence. Of note, the dropouts reported significantly less parenting competence than continuers prior to the intervention, which was the only significant difference between the two groups at Time 1. In sum, those who received more of the intervention did not fare significantly better than those who received less.

It is important to note that this study was conducted in non-clinical settings such as community centers, churches, and local schools. This type of design increases the external validity of the program because it was provided in the community, rather than in
clinical settings. This could lead to greater generalization to participant’s problems at home because they were not learning in an artificial professional setting.

A number of possible contributing factors for the null result are offered. First, the present study used an at-risk sample. The average child problem severity at Time 1 was one standard deviation above the community-based sample provided in the Ohio Scales manual and one standard deviation below the clinical sample. As such, it is possible that the participating parents were not as motivated to make changes as parents whose children demonstrate behavior problems in the clinical range. Extant studies exploring readiness for change (not specific to parenting interventions) have reported that individuals with greater problem severity often show more motivation for making life changes compared to individuals with less problem severity (e.g., Walker, 1999). Indeed, a key meta-analysis of parent training reported that children from studies with clinically significant levels of disruptive behavior prior to the intervention evidenced more change than those from studies without significant levels of disruptive behavior (Lundahl et al., 2006). Furthermore, the goal in providing prevention services for at-risk samples is to thwart the emergence of clinically significant mental health problems in the future. As such, longitudinal data is needed to determine whether this type of change occurred.

Second, those who dropped out prematurely but completed post-intervention data inadvertently formed a partially-treated control group to which the continuer group was compared. However, the dropout group is not a true control group, and these parents may have benefited from attending just a couple parenting sessions. Furthermore, it is important to note that all parents who attended at least two sessions were given Barkley’s
(1998) parent manual. Thus, the dropouts could have continued to use the program even without attending the group sessions, which may account for the dropouts and continuers reporting comparable outcomes.

Third, it may be possible that the dropouts experienced some spontaneous remission from signing up for and joining a parent group as similar phenomena have occurred in previous studies (Lambert, 1976; Posternak & Miller, 2001). It is important to note, however, that spontaneous remission is not necessarily “spontaneous” as a number of factors during the first or second session may have led to the parents’ perceptions changing (e.g., normalization of parenting problems, reading materials, support from the therapist and other parents, etc.).

Finally, an important meta-analysis of parenting interventions found that disadvantaged families seemed to benefit more from individualized treatment as opposed to group-based intervention (Lundahl et al., 2006). Extant research also suggests that parents from disadvantaged populations tend to use punitive and inconsistent discipline practices (McLoyd, 1998). Bringing together parents with this type of parenting style for a group-based intervention might actually serve to normalize and perpetuate the use of alternative parenting techniques such as corporal punishment. This type of counterproductive group phenomena has been reported in the adolescent conduct problem intervention literature (e.g., Dishion & Andrews, 1995). In sum, it might be that tailored, individualized interventions are more useful for disadvantaged populations than group-based interventions (Lundahl et al., 2006).
Factors Related to Dropout

Contrary to the expected outcomes, SES, parent education, number of parents in the home, and parenting stress were not related to attendance or completion status of the program (i.e., dropout versus continuer). When using log transformed data, child behavior severity had a small, positive correlation with dropout such that parents who reported greater child behavior severity at Time 1, attended more parenting sessions. This may indicate that parents who have children with less severe behavior problems require less extensive treatment (Sirles, 1990). Contrary to this hypothesis, Kazdin (1990) reported that parents of more seriously disturbed children with Conduct Disorder were more likely to drop out of treatment. However, it is important to note that the sample utilized in the current study was an at-risk sample with few or no “seriously disturbed” children. As such, the way in which child behavior severity is related to dropout might be on a continuum, with the parents of the most and least severe children dropping out more often.

Exploratory analyses revealed that younger parent age was related to dropping out of the intervention after three or fewer sessions. Indeed, other studies have reported this finding (e.g., Reyno & McGrath, 2006). It is important to note that some of the older parent participants were actually the children’s biological grandparents, which might have influenced their tendency to stay in treatment. More research is needed to better understand the factors that contribute to custodial grandparents’ rates of retention.

It is also important to note that some other unmeasured variables might be more influential to this population of parents with regard to premature dropout from treatment.
Interestingly, a recent study utilizing a large, diverse sample found that participant demographics did not predict attendance (Nix et al., 2009). Rather, demographic factors (e.g., single-parent status, SES, race, maternal age) predicted engagement or participation in the intervention (Nix et al., 2009). Furthermore, treatment engagement, not attendance, was predictive of intervention outcomes (Nix et al., 2009).

**Exploration of Treatment Mediators**

The present study did not identify any mediators of the relationship between attendance and intervention outcomes. It is important to note that one must first establish that a treatment is more effective than a comparison condition in order to have a meaningful evaluation of its mediators (Weersing & Weisz, 2002). Given that this study did not support the effectiveness of Barkley’s program, the extent to which change could be predicted was limited as there was no significant change above and beyond an untreated group.

Contrary to previous findings, this study did not support that parent behavior change mediates child behavior change (Reid et al., 2004). This discrepancy may be due to the differences in study methodology. Specifically, the present study used parent-reported measures of parenting practices, whereas Reid and her colleagues (2004) used observational measures of parent-child interactions. It has been documented that there is often a lack of agreement between informants as observational data is thought to be more objective (Beauchaine et al., 2005). Further, Reid et al. (2004) utilized parent attendance in addition to percentage of homework completed and a clinician-rated measure of parent engagement in group discussion to define the independent variable. As noted previously,
one recent study found that the quality of a parent’s participation in group-based BPT was a better predictor of positive intervention outcomes than attendance (Nix et al., 2009). Indeed, beyond the possible mediators explored in the study, homework completion could have been considered as a mediating factor. It is possible that the act of completing homework between sessions could be related to intervention effectiveness. As such, a more objective measure of homework completion should be utilized that goes beyond self-reported amount of reading completed. In sum, more research is needed to explore the mechanisms through which parents make changes when engaging in group-based parenting interventions.

**Limitations and Future Directions**

The present study had a number of limitations. First, this study did not have a true control group. Thus, one cannot be sure that the reported improvements are not due to spontaneous recovery. In addition, the sample was composed of an at-risk sample, which may have weakened the immediate results. Although it is important to target at-risk populations, it may be inherently difficult to assess change because the goal of preventative interventions is to prevent *future* problems or further decline in functioning. As such, longitudinal data is needed to better explore the effectiveness of BPT with at-risk populations. Further, the study did not assess for cultural factors that could have played a key role in dropout and treatment effectiveness. Additionally, the present study used attendance and homework completion to evaluate intervention engagement, which does not take into consideration the amount a parent participates in group discussion or role plays. To address these limitations, future research of parenting interventions with a
rural, Appalachian population should include a control group, utilize a clinical sample, investigate cultural factors, and include a therapist-rated measure of intervention engagement.

Given that disadvantaged populations may benefit more from individualized treatments as opposed to group-based interventions (Lundahl et al., 2006) and the current study utilizing a predominantly economically disadvantaged population did not find a dose effect for the intervention, an alternative method may be warranted for this population. As an example, Gordon’s Parenting Wisely CD-ROM intervention (found at www.familyworksinc.com) has shown promising effects with parents of adolescents living in the same area as the participants in the present study (Kacir & Gordon, 1999). Furthermore, a recent meta-analysis reported that self-directed parenting interventions (e.g., computer delivered information, audio/visual material) produced similar outcomes to other delivery methods (Lundahl et al., 2006). This, or some other culturally sensitive intervention, might be more effective with this population.

Conclusion

In sum, the present study evaluated the effectiveness of Barkley’s (1997) BPT program in a non-clinical, rural, high poverty setting, which is an underserved and understudied population. Given that the findings from this study indicate that parents who received an average of approximately 9 hours of intervention (an average of 6.21 sessions) did not significantly differ from those who received approximately 2.5 hours of intervention (an average of 1.76 sessions), more research is needed of BPT with a clinical population to evaluate the effectiveness of parenting groups in this area. Despite the
overwhelming research support for parent training groups, all programs might not be beneficial for all parents. Therefore, additional research is needed to evaluate the essential intervention ingredients that lead to parent behavior change. Furthermore, the high attrition rates in this study are consistent with rates reported in other studies. As such, it is important to have a better understanding of the key factors that influence retention and dropout to better serve this population.
References


Table 1

*Summary of Procedures*

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<th>Session number</th>
<th>Content covered</th>
<th>Measures administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Explanation of program, informed consent, introductions, group building activity, provide reading materials, assign reading homework</td>
<td>Demographic questionnaire, Social Provisions Scale (SPS), Alabama Parent Questionnaire (APQ), Disruptive Behavior Stress Inventory (DBSI), Family Environment Scale (FES), Parent Sense of Competence (PSOC), Ohio Scales</td>
</tr>
<tr>
<td>2</td>
<td>Barkley’s Why Children Misbehave</td>
<td>SPS</td>
</tr>
<tr>
<td>3</td>
<td>Barkley’s Pay Attention!</td>
<td>SPS &amp; Techniques Utilized Questionnaire (TUQ)</td>
</tr>
<tr>
<td>4</td>
<td>Barkley’s Increasing Compliance and Independent Play</td>
<td>SPS &amp; TUQ</td>
</tr>
<tr>
<td>5</td>
<td>Barkley’s When Praise is Not Enough: Poker Chips and Points</td>
<td>SPS &amp; TUQ</td>
</tr>
<tr>
<td>6</td>
<td>Barkley’s Time Out!</td>
<td>SPS &amp; TUQ</td>
</tr>
<tr>
<td>7</td>
<td>Barkley’s Time Out continued</td>
<td>SPS &amp; TUQ</td>
</tr>
</tbody>
</table>
& What to Do in Public

8* Barkley’s Handling Future  SPS, TUQ, APQ, DBSI, FES, PSOC, Ohio

Behavior Problems &  Scales, Therapy Attitude Inventory

Summary

*Participants who were not in attendance at Session 8 were mailed the questionnaires and asked to return them via U.S. Mail in the provided prepaid envelope.
Table 2

*Descriptive Statistics for Outcome Measures (Entire Sample)*

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<thead>
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<th>SD</th>
<th>Skew</th>
<th>SE</th>
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Table 2: continued

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*Time 1 data sample size = 71 or 72. **Time 2 sample size = 57 or 58.
### Table 3

*Attendance by Session*

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<th>Session number</th>
<th>Attendance for entire sample ((N=72))</th>
<th>Attendance for dropouts ((n=25))</th>
<th>Attendance for continuers ((n=47))</th>
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<td>1</td>
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<td>96% ((n=24))</td>
<td>91.5% ((n=43))</td>
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<td>2</td>
<td>73.6% ((n=53))</td>
<td>48% ((n=12))</td>
<td>87.2% ((n=41))</td>
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<tr>
<td>3</td>
<td>54.2% ((n=39))</td>
<td>16% ((n=4))</td>
<td>74.5% ((n=35))</td>
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<tr>
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<td>58.3% ((n=42))</td>
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<td>48.6% ((n=35))</td>
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<td>50.0% ((n=36))</td>
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<td>8</td>
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Table 4  
*T-Tests Comparing Means between Time 1 and Time 2 Outcome Measures*  
*(Treatment Continuers Only)*

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<th>Time</th>
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<th>SD</th>
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*Significant at Bonferroni adjusted alpha: p < .007.*
Table 5

*Mixed Between-Within Subjects Analyses of Variance Evaluating Effectiveness of Treatment for Continuers and Dropouts*

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*Significant at Bonferroni adjusted alpha: $p < .007$. 
Table 6

*Means and Standard Deviations for Dropouts and Continuers Separately

*at Time 1 and Time 2*

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<th>Continuers**</th>
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<td></td>
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</table>

*Sample size for dropouts is 12; except for DBSI, where \( n = 11 \)

**Sample size for continuers is 45; except for DBSI and Ohio Scales, where \( n = 44 \)
Appendix A1 (BPT Meta-analyses)

Reyno and McGrath (2006) identified a number of positive outcomes associated with parent participation in BPT in their evaluation of 31 studies examining BPT efficacy. These positive outcomes were found for both individually-administered interventions as well as those delivered in a group setting, with outcomes including increased knowledge of parenting skills, improved parenting self-esteem, reduced parenting stress and maternal depression, enhanced parent-child communication, and reduced child behavior problems. An early meta-analysis published by Serketich and Dumas (1996) found an effect size of .86 for studies comparing BPT to no treatment (controls) at reducing child misbehavior. In addition, this study found an effect size of .44 (BPT vs. no treatment) with regard to parent functioning after treatment (Serketich & Dumas, 1996). More recently, Maughan and her colleagues (2005) conducted a meta-analysis of 79 studies examining the benefits of BPT for parents of children and adolescents (ages 3-16) demonstrating externalizing behaviors or having a disruptive behavior disorder. Results revealed a mean weighted effect size of .30 for between-subjects designs and a mean weighted effect size of .68 for within-subjects designs (Maughan et al., 2005). These results also supported the maintenance of treatment gains. More specifically, they reported a mean weighted effect size of .40 for between-subjects designs (N=10 studies) and .79 for within-subjects designs (N=22 studies) at follow-up (Maughan et al., 2005).
Appendix A2 (Group versus Individual Treatment)

Research has demonstrated that group-based interventions offer a number of benefits different from those associated with individual therapy. For instance, groups are typically less costly for participants and the health care system as compared to individual treatment (Cunningham et al., 1995). Further, participants of groups often report gains that are unique to the group context including a sense of social support and normalization, comfort in knowing that others may be experiencing similar struggles, and knowledge of coping strategies from other participants (Beiling, McCabe, & Antony, 2006). As such, different delivery methods of BPT may produce different outcomes rather than better outcomes.

Although there are numerous unique benefits of group-based interventions, it is important to point out, however, that group-based interventions also pose challenges distinctive from those experienced in individual treatment (Beiling et al., 2006). For instance, it may be difficult for participants to ‘catch up’ after missing a session, which may lead to premature dropout. Group interventions also offer less time for each participant to explore personal topics such as their own homework noncompliance, successes, and struggles. Additionally, participants often differ in terms of motivation and skill which may result in some members feeling inadequate or discouraged. Moreover, a group format may cause some to feel embarrassed by bringing up failure experiences. Finally, if a member shares a particularly negative experience, other members may be negatively influenced by his or her story (e.g., one parent shares that she was bit by her
child when she attempted time-out, and another parent may feel reluctant to attempt time-out with her aggressive child).

In conclusion, extant studies have shown that group-based BPT is effective (Christensen, Johnson, Phillips, & Glasgow, 1980; Cunningham et al., 1995). Further, therapist time and the costs involved for group trainings are drastically reduced compared to individual treatment (Cunningham et al., 1995). Given that the benefits of group intervention are apparent and that group formats drastically reduce cost of treatment, many researchers and clinicians recommend starting parents in a parenting group and then referring non-responders to individually-oriented treatments as needed (e.g., Barkley, 1997).
Appendix A3 (Mediators of Group-based Parent Intervention)

It has been well-documented that group-based parent interventions lead to numerous positive clinical outcomes (e.g., Anastopoulos et al., 1993; Anderson-Butcher et al., 2004; Hutchings et al., 2007; Tucker et al., 1998; Tynan et al., 2004; Webster-Stratton, 1998). However, few studies have examined the mechanisms by which group-based parent interventions produce the aforementioned outcomes (Beauchaine et al., 2005). Unfortunately, increasing a parent’s knowledge of effective parenting practices has not in and of itself been proven to lead to behavior change in the child or the parent (Dishion & Andrews, 1995). It has been reported, however, that parent behavior changes mediate the relationship between treatment participation and child outcomes (e.g., Reid et al., 2004). For instance, a recent meta-analysis examined the mediators of child behavior change associated with parent participation in BPT (Beauchaine et al., 2005). Results indicated that harsh, ineffective, and critical parenting practices mediated child intervention outcome. Although this is an important finding, no known studies have examined what factors mediate parental behavior change (i.e., what intervention variables lead parents to actually utilize the techniques taught in BPT?). Given that it has been documented that parent-focused interventions for child misbehavior are effective (e.g., Tynan et al., 2004; Webster-Stratton, 1998), and that parent behavior change is the mechanism through which child behavior change occurs (Reid et al., 2004), it is now necessary to determine what mechanisms drive parental behavior change with regard to parent-based intervention.
Hypotheses have been generated regarding the mechanisms of action associated with group-based intervention outcomes (Gottlieb & Wachala, 2007). One hypothesis comes from social comparison theory, which holds that individuals under stress seek out others in similar situations with whom to compare their thoughts, feelings, and behaviors (Festinger, 1954). Another possible way group intervention benefits others is through the stress and coping theory, which postulates that the perception of support or help in times of need acts as a buffer against stressors by creating a sense of hope in the individual (Lazarus & Folkman, 1984). Others have hypothesized that groups produce beneficial effects through increased self-efficacy, positive feelings associated with providing as well as receiving support, the expression of affect, and the reduction of feelings of helplessness and uncertainty about one’s problem (Gottlieb & Wachala, 2007).
Appendix A4 (Research Foci)

A review of the existing literature with regard to each of the three research questions is presented below. Hypothesized directions of outcomes are offered for each area of focus.

*Effectiveness*

It has been well-documented that BPT is efficacious. Further, there is growing evidence that BPT is effective in “real world” settings, yet there are no known studies evaluating the effectiveness of Barkley’s group-based BPT program in an Appalachian, mental health professional shortage area with high rates of unemployment and poverty. As such, it was less clear how the sample in the present study would respond to the selected BPT program. However, given the amount of empirical support for BPT, it was expected that the present intervention would be effective with regard to decreasing child misbehavior severity, parenting stress, and inconsistent discipline practices. Furthermore, the intervention was expected to improve family cohesion, parenting self-efficacy, and the parents’ sense of social reassurance and guidance.

*Premature Dropout*

Previous research has revealed that positive outcomes are correlated with good attendance and program completion. Studies have identified factors associated with premature dropout from parent-centered interventions. Based on the results of extant studies, it was expected that poor attendance and premature dropout would be more common among parents reporting lower socioeconomic status (Peters, Calam, & Harrington, 2005; Reyno & McGrath, 2006; Spoth, Goldberg, & Redmond, 1999), lower parent education attainment (Reyno & McGrath, 2006; Spoth et al., 1999), higher
parenting stress (Friars & Mellor, 2007), and greater severity of child behavior problems (Haggerty, Fleming, Lonczak, Oxford, Harachi, & Catalano, 2002). Given the increase in single parent families and their strong relationship with poverty (Amato & Maynard, 2007), single parent status in relation to attendance was also evaluated.

**Mediators**

A deconstruction at the level of intervention ingredients will help to identify which intervention mechanisms (e.g., social support, self-efficacy, reduced parenting stress), best facilitate the desired changes for parents in this region. It has been well-documented that intervention engagement (i.e., attendance) predicts parent and child clinical outcomes (Barkley et al., 2000; Kazdin, 2005; Prado, Pantin, Schwartz, Lupei, & Szapocznik, 2006). Given that parent behavior change mediates child behavior change (Reid et al., 2004), which is the ultimate goal of parent interventions, it is important to consider what factors mediate the relation between treatment engagement and parent behavior change. Mediators of parent behavior change have yet to be explored, thus these analyses were relatively exploratory in nature. A number of expectations regarding mediators of intervention outcome are presented.

(a) As found previously in the literature (Reid et al., 2004), it was hypothesized that the relation between attendance and child behavior change would be mediated by change in parenting practices.

(b) Benefits of social support have been consistently supported in the group-based intervention literature. For instance, high perceived social support has been shown to be associated with improved parenting practices (Watkins-Victorina, 2000). Similarly, low perceived social support has been shown to be correlated with high levels of parent stress,
anxiety, and depression (White & Hastings, 2004). Further, Quittner et al. (1990) found that perceived social support mediated the relation between child-related stressors and parental distress. Given the correlation between social support, an individual’s mental health, and parenting behavior, the present study sought to investigate whether perceived social support would be a mediator of the relation between attendance and improvements in parenting practices.

(c) Gottlieb and Wachala (2007) hypothesized that one mechanism by which group-based interventions produce the desired effects is through increased self-efficacy. As such, parent self-efficacy was investigated as a mediator of the relation between attendance and improved parenting practices.

(d) Parents of children exhibiting disruptive behaviors often report increased levels of parenting stress (Anastopoulos et al., 1993). It has also been well-documented that parent stress is a significant predictor of harsh and permissive parenting practices (Watkins-Victorino, 2000). As such, it was investigated whether parenting stress would be a mediator of the relationship between attendance and improvement in parenting practices.

(e) Intervention engagement has been shown to be related to treatment satisfaction (Brestan et al., 1999). Further, in other literatures it has been suggested that treatment satisfaction is associated with positive treatment outcomes (e.g., Nelson, 1997). Given that the proposed intervention requires parents to implement the behavioral strategies discussed during group in the home, parent buy-in of the intervention is essential. Thus, treatment satisfaction was explored as a mediator of the relation between attendance and improvement in parenting practices.
Meigs County Flyer

Attention Parents!

JOIN A FREE PARENT GROUP

| Techniques for managing child misbehavior  
| Improve family relationships  
| Learn & discuss discipline strategies  
| Gain support from other parents  
| *Earn $30 and get a free parenting book, too! |

When: One evening per week, 6:30 to 8:00pm, for 8 weeks  
*Program start date is for the week of October 22nd

Where: The Pomeroy Public Library: 216 West Main St.  
Pomeroy, OH 45769

Who: Parents of children ages 2 to 12 years

Snacks & childcare will be provided!

Call today to reserve your spot!

Contact Rebecca Hellenthal, M.S. at xxx-xxx-xxxx

Sponsored by Ohio University
Appendix B2 (Recruitment Details)

Participants were recruited by flyers posted in local agencies, churches, social service organizations, schools, and public locations. Flyers were also sent home with all children attending public pre-schools and elementary schools in Athens, Meigs, and Hocking counties (i.e., Alexander Local, Athens City, Federal Hocking Local, Logan-Hocking Local, Meigs Local, Nelsonville-York City, and Trimble Local School Districts). In addition, the following agencies were informed of the parenting group, given flyers, and encouraged to refer those who may be interested: Judge Robert Stewart (Athens), Judge Wallar (Logan), Meigs County Juvenile Court System, Hocking & Athens County Children’s Services, Department of Job & Family Services, Head Start, Help Me Grow, Tri County Mental Health Services, Health Recovery Services, Woodland Centers, local churches, coffee shops, doctor’s offices, preschools, and daycares. Ads were placed in the Logan Daily News, Athens Messenger, and the Southeast Ohio Parent Magazine, which is distributed to all children in the public school system in the three counties served by the project.
Appendix B3 (Demographics Form)

A. Questions about YOUR CHILD (If you have more than one child, answer the questions thinking of the child you are having most difficulty with managing their behavior):

1. Age:____ Grade:______  Gender (circle one):  MALE    FEMALE
2. Does your child have an illness or problem diagnosed by a doctor?  YES    NO
   If yes, what is the name of the problem? ______________________________
3. Is your child currently taking medication? ______________________________
   If yes, what is the name of the medication? ______________________________
4. Do you have medical insurance for your child?  YES    NO  If yes:  MEDICAID
   PRIVATE

B. Questions about YOU:

1. Age: ____  Gender(circle one):   MALE  FEMALE
   Race:
   ____ Caucasian/White     ____ Black (Not of Hispanic Origin)     ____ Bi/Multi Racial
   ____ American Indian/Alaskan Native    ____ Asian or Pacific Islander  ____ Hispanic
   ____ Other:________________
2. Marital Status: ____Single    ____Separated/Not living together    ____Married
   ____Widowed   ____Divorced
3. What town do you currently live in? _______________  What county?_______________
   How long have you lived in this county? ____________ years
   Length of time living in any county in Appalachia? ____________ years
   During childhood, did you grow up in the Appalachian region?  _____yes _____no
   Have you ever lived outside the Appalachian region?  _____yes  _____no
   If yes, for how long? ____________
   Did your parents grow up in Appalachia?  _____yes  _____no
   Did your grandparents grow up in Appalachia?  _____yes  _____no

4. What is your job? _________________________
   Your Employment Status: ___Full-time     ___Part-time    ___unemployed
   Your highest level of education: ___Some high school    ___High school graduate
___Some college   ___Professional/technical college  ___Bachelor’s degree
___Master’s or higher

Estimated Household Income: ________________________

Number of people living in your home (including yourself):________

C. Questions about YOUR SPOUSE:

1. What is your spouse’s job?_____________________

   Spouse’s Employment Status:   ___Full-time    ___Part-time
   ___unemployed

   Spouse’s highest level of education:   ___Some high school  ___High school graduate
   ___Some college   ___Professional/technical college  ___Bachelor’s degree
   ___Master’s or higher
Appendix B4 (Facilitator-rated Fidelity Checklist Example)

☐ Review events since last session
☐ Discussion of parents’ views of misbehavior
☐ Presentation of a model for understanding child misbehavior to educate parents concerning causes of child misbehavior (e.g., child & parents characteristics, situational consequences, family stressors, the reciprocal interaction among these factors).
☐ Urge parents to identify those causes of or contributors to defiant behavior that may exist in their families
☐ Complete the Profiles of Child and Parent Characteristics in session
☐ Encourage parents to begin to remedy those causes of defiance that can be rectified within their families; the goal of intervention is to find a “best fit” between parent, child, and family circumstances
☐ Complete the Family Problems Inventory in session (this can also be given as homework if no time)
☐ Discuss that some handicaps are behavioral (i.e., rationale for changing the environment to help child succeed)
☐ Assign reading homework
☐ Other homework: child proof the home if impulsive and/or destructive child
☐ Other (please specify): ____________________________________________________________

1. Intervention specific: Estimate the percentage of time the group was on task (i.e., discussing topics directly relevant to the intervention like how to implement specific parenting techniques, pros and cons of techniques, how to use techniques for a particular behavior problem, parent examples of using the technique, group problem-solving about using techniques to address behavior problems).

0 10 20 30 40 50 60 70 80 90 100%

2. Parent support: Estimate the percentage of time the group was off task but still addressing general parenting issues (i.e., discussing topics not directly related to the intervention such as common parenting problems, common child behavior problems, or the stress associated with having a child with behavior problems but never tying it back to the intervention).

0 10 20 30 40 50 60 70 80 90 100%

3. Off task: Estimate the percentage of time the group was not discussing parenting issues at all (i.e., topics having nothing to do with parenting such as marital problems not related to parenting, gossip).

0 10 20 30 40 50 60 70 80 90 100%
Appendix B5 (Observer-rated Fidelity Checklist Example)

Date: ______________
Facilitator Name: ________________________ Your Name _________________________

Were the following topics addressed during the session (circle “Yes” or “No” for each):

a) Causes of child disruptive behavior (as described in the book) YES  NO
b) Parents identify causes of child misbehavior in their own family YES  NO
c) Problem solving around the causes of misbehavior in their own family
   (i.e., discussion about how can they remedy these causes of misbehavior?) YES  NO

1. Intervention specific: Estimate the percentage of time the group was on task (i.e., discussing topics directly relevant to the intervention like how to implement specific parenting techniques, pros and cons of techniques, how to use techniques for a particular behavior problem, parent examples of using the technique, group problem-solving about using techniques to address behavior problems).

   0 10 20 30 40 50 60 70 80 90 100%

2. Parent support: Estimate the percentage of time the group was off task but still addressing general parenting issues (i.e., discussing topics not directly related to the intervention such as common parenting problems, common child behavior problems, or the stress associated with having a child with behavior problems but never tying it back to the intervention).

   0 10 20 30 40 50 60 70 80 90 100%

3. Off task: Estimate the percentage of time the group was not discussing parenting issues at all (i.e., topics having nothing to do with parenting such as marital problems not related to parenting, gossip).

   0 10 20 30 40 50 60 70 80 90 100%

**Facilitator Characteristics**
1. Did the facilitator maintain a friendly demeanor? Yes  No
2. Did the facilitator respond to questions? Yes  No
3. Did the facilitator encourage participation? Yes  No
4. How involved was the facilitator in dictating what was discussed during group?
   Not at all involved A little involved Somewhat involved Very involved

**Group Characteristics**
1. How many participants were in the group today? ________
2. How many participants at least communicated once? ________
3. How open to the information did you view the group as a whole at the beginning of the session?
   Not at all open A little bit open Somewhat open Very open
4. By the end of the session, how open to the information did you view the group as a whole?
   Not at all open A little bit open Somewhat open Very open
5. List any problems that you noted:
Appendix B6 (Techniques Utilized Questionnaire)

A. How much of the reading did you do this week? (circle one)
   a. None
   b. Some
   c. All

B. What parenting techniques do you remember talking about during group last week?
   ___________________, ___________________, ___________________

C. Did you attempt to use any parenting techniques talked about at any point during group
   since our last meeting? YES NO
   If so, which ones did you attempt, and how many times did you try out each technique
   each day? (fill out chart below)

   EXAMPLE.
   What did you try this week? | About how many times each day? |
   --------------------------- | ------------------------------- |
   | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
   1) Praise | 3 | 2 | 0 | 0 | 1 | 0 | 1 |

D. Overall, how successful as a parent did you feel this week? (circle one)
   a. Totally unsuccessful: I didn’t do it right or it didn’t work at all.
   b. Somewhat unsuccessful: It didn’t really work. I need more practice.
   c. Somewhat successful: It helped, but didn’t fix everything.
   d. Totally successful: It worked and I felt good!
Appendix B7 (Clinician Training)

Each of the 5 facilitators participated in two 4-hour trainings presented by Dr. Heather Alvarez. During the training, facilitators were presented material on behavior theory and how it applies to child behavior management. An emphasis was placed on the material from Russell Barkley’s clinician manual. Each clinician was given copies of both Barkley’s clinician and parent manual and instructed to follow a predetermined timeline per the Principal Investigator.
Appendix B8 (Consent Form)

Title of Research: Promoting Empirically-Supported Parenting Interventions in Community Settings: An Investigation of Mediators of Change

Principal Investigator: Rebecca Hellenthal, M.S.
Advisor: John Garske, Ph.D.
Department: Department of Psychology

Federal and university regulations require signed consent for participation in research involving human subjects. After reading the statements below, please indicate your consent by signing this form.

Explanation of Project

Purpose of the Intervention/Study
The purpose of the parenting group is:
1. To prevent and/or reduce behavior problems among children aged 2–12 years through positive and consistent parenting practices.
2. To improve parent-child relationships.
3. To provide services to a region with few resources.

The purpose of the research study is:
1. To investigate the effectiveness of an evidence-based parenting intervention.
2. To examine factors related to positive parenting outcomes.
3. To determine factors associated with early dropout from parenting groups.

What does Participation Involve?
The parents of approximately 80 children aged 2–12 years will be recruited to participate in this project. Participants will participate in an 8-week parenting program led by a Masters-level mental health clinician. All parenting groups will meet once per week, for 1 1/2 hours in the evenings for eight weeks. Sessions 2-7 will last one and one half hours. The first and last sessions will last one hour and forty-five minutes to allow additional time for completion of questionnaires. For your convenience, child care, snacks, and beverages will be provided each session.

Participation in the research portion of the project involves completing a packet of questionnaires during Sessions 1 and 8. The questionnaires ask parents about their child’s behavior, their personal level of stress, and their beliefs about parenting. These packets of questionnaires should take about 45 minutes to complete. Additionally, two short surveys will be collected at the beginning of sessions 2-7 to assess your perceived social support (e.g., Social Provisions Scale) and also which intervention(s) you attempted in the home over the course of the last week, how often you implemented the techniques in the past week, how much of the reading you completed, and how successful you felt.
as a parent that week. These two short surveys are estimated to take fewer than 10 minutes to complete. Note: parents who choose not to participate in the research portion of this project (i.e., completing the questionnaires) may still participate in the parenting group.

Occasionally, a research assistant will sit in on the parenting group to document the types of topics discussed during group. This is necessary to capture how groups differ with regard to the types of topics they discuss. For instance, some groups may spend the majority of the session focused on discussing particular parenting techniques such as time out, whereas other groups may focus more on sharing personal stories of difficulties the members have had with their children and using the group as support. This will provide valuable information about what types of topics most benefit parents. This process will be anonymous, so that no parents can be identified, and specific stories of parenting difficulties will not be recorded verbatim.

In the event that a parent’s child is demonstrating clinically significant problems at the end of the intervention, the family will be provided with a list of referral options for individual treatment in their area. This additional treatment is optional and parents in no way will be required to obtain additional services.

**What is the Purpose of the Intervention?**

The goals of the parenting program are to provide parents with parenting skills to manage child misbehaviors and to improve the parent-child relationship. Parents will be provided Barkley and Benton’s parenting book (*Your Defiant Child*, 1998). Participants are anticipated to gain a feeling of social support from the group and an increased awareness of parenting techniques. Skills described in Barkley and Benton’s parenting book include how to praise children, how to use active ignoring, how to help children follow directions, how to manage misbehavior in public places, and how to use rewards and time-out to increase compliance to parent requests.

**Risks and Discomforts**

There is minimal risk associated with participating in this project. One risk is that you may not enjoy participating in the parent group. Occasionally, parents may be uncomfortable with contributing to group discussions or may find implementing the parenting skills to be difficult. Further, a potential risk is that you may feel more apprehension or self-consciousness about sharing personal information while the sessions are being coded by a research assistant. Parents will not be pushed to contribute to group discussions if they do not feel comfortable doing so and will never be forced to share information with the group that they do not want to share. In the event that additional or different services are needed, information regarding available services in the community will be given. Participation is completely voluntary.

All information discussed during groups should not be discussed with others outside the sessions. However, because of the group format, there is some risk that a group member could disclose personal information shared by another member to an individual outside the group. Every effort will be made to avoid this. For instance, confidentiality will be encouraged and its importance will be
reviewed frequently with group members. In the event that a disclosure occurs, solutions will be discussed with group members.

Another potential risk is that completing the questionnaires may be unpleasant for you in some way. You may be reluctant to answer some of the questions or you may experience some discomfort in completing the forms. However, most individuals do not experience any discomfort while completing the forms. Any discomfort you may experience will likely be brief. In the event there are questions you feel uncomfortable answering, you may respond by indicating N/A “Not Applicable” or DK “Don’t Know.”

Benefits

It is anticipated that parents may experience multiple benefits from participation. Parents will gain access to parenting materials (a parenting book will be provided to you free of charge, and other parenting handouts will also be given) and knowledge of effective parenting techniques. It is also anticipated that participants will benefit from the support of other parents who are experiencing similar difficulties with their children. In addition, numerous studies have reported that participation in parenting groups is associated with decreased child disruptive behaviors and parent stress, enhanced parenting self-efficacy, and improved parent-child relationships.

An additional benefit to participating in this study is contributing to a better understanding of factors associated with positive outcomes from parenting groups. This study will likely inform mental health professionals of the necessary content to be covered in such groups and will shed light on the benefits of empirically-supported parent training groups among rural populations.

Confidentiality and Records

Every effort will be made to uphold confidentiality. Information collected will be put in a sealed envelope for transportation back to Ohio University and then stored in a locked office in a research laboratory. All questionnaires will be identified only by numerical codes. In other words, no names will be on the materials collected from parents except for the consent forms which will be kept separate from research data. The Principle Investigator will keep a list, which will be destroyed at the completion of the research study (i.e., in approximately one year) of participants with his or her research number separate from research data so that materials may be prepared each week with participant numbers on the questionnaires to ensure that each participant’s data can be aggregated in the computer data base. Data will be input into a computer database with all other participants’ information for data analysis.

Compensation

At session 2, parents will receive a parenting book (Your Defiant Child, 1998) as a part of participation. In addition, $15 will be provided to parents who choose to complete a packet of questionnaires at the beginning and the end of the parenting group meetings for a total of $30 possible. In the event that you do not attend the final parenting session, you will be invited to complete the
questionnaires and return them via U.S. Mail. Once obtained, you will receive a
$15 check in the mail. To be paid by check, you may be asked to provide your
Social Security Number for accounting purposes. On-site child care will be
provided for all groups. Two-three trained research assistants will serve as child
care attendants for each group.

Contact Information
If you have any questions regarding this study, please contact Rebecca
Helltenthal, M.S. or Dr. John Garske, Ph.D. at 740-597-2565 or 740-593-1078. If
you have any questions regarding your rights as a research participant, please
contact Jo Ellen Sherow, Director of Research Compliance, Ohio University,
(740)593-0664.

In signing this form, I certify that I have read and understand this consent
form and agree to participate as a subject in the research described. I agree that
known risks to me have been explained to my satisfaction and I understand that
no compensation is available from Ohio University and its employees for any
injury resulting from my participation in this research. I certify that I am 18
years of age or older. My participation in this research is given voluntarily. I
understand that I may discontinue participation at any time without penalty or
loss of any benefits to which I may otherwise be entitled. I certify that I have
been given a copy of this consent form to take with me.

1. I agree to participate in a parenting group designed to prevent and/or reduce
behavior problems and to improve parent-child relationships among children
aged 2-12 years through positive and consistent parenting practices.

<table>
<thead>
<tr>
<th>Participant Signature</th>
<th>Date</th>
<th>Witness Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

2. I agree to participate in the research portion of the project (questionnaire
completion) so that it may be used to evaluate treatment outcomes and
provide a better understand of the factors that contribute to positive
treatment outcomes. I understand that all of my data will be coded without
any identifiable information attached, protecting my anonymity and the
confidentiality of my data.

<table>
<thead>
<tr>
<th>Participant Signature</th>
<th>Date</th>
<th>Witness Signature</th>
<th>Date</th>
</tr>
</thead>
</table>
Appendix B9 (Parent Consent for Child Care)

1. I understand that the children’s group is designed to provide activities for my child while I am participating in the parenting group.
2. The children’s group is being coordinated Rebecca Hellenthal, M.S., and Heather Alvarez, Ph.D. Child care attendants are trained volunteers and undergraduate college students from Ohio University.
3. I understand that my child’s participation in this group is optional. My child is NOT required to attend.
4. I understand that the children’s group is not a treatment program for my child.
5. Children may participate in a variety of activities including homework completion, computer activities, games, and sports.
6. I understand that if my child breaks important rules, he/she will be required to take a “sit out” away from the group activity for a specified period.
7. I understand that if my child refuses a “sit out” or is verbally or physically aggressive to the extent that the group is disrupted, I may be asked to leave the parenting group to take my child home.
8. I understand that if my child participates in the children’s group, I must ensure that he/she arrives on time. I understand that I must “sign in” my child with the attendance staff.
9. At the end of the evening, I must promptly pick up my child and “sign out” with the attendance staff.

Guardian Name (printed): ________________________

Guardian Signature: __________________________  Date: ________

Witness Signature: ___________________________  Date: ________
Appendix B10 (Intervention Design)

Russell Barkley’s BPT program was utilized in the present study. Barkley has published his program in two formats: a clinician’s manual (Defiant Children: A Clinician’s Manual for Assessment and Parent Training, Barkley, 1997) and a parent self-help book (Your Defiant Child: Eight Steps to Better Behavior, Barkley & Benton, 1998). Parents were given the self-help book and asked to read portions of the book each week for homework. The clinician and parent manuals present very similar content. However, the parent manual is written in a parent and/or layperson-friendly manner. One review of Barkley and Benton’s (1998) parent manual stated that the material is covered “clearly, nondidactically (mostly), and with welcome gleams of humour” (Carr, 1999, p.190). Similarly, a review of Barkley’s (1997) clinician manual reported that “this ‘clinician’s manual’ rests on a cogent, clearly articulated scientific foundation” and that “this material is so comprehensive that the manual is essentially self-contained” utilizing a “straightforward behavioral approach” (Wodrich, 1998, p. 360). The Flesch-Kincaid Grade Level was calculated to be 6.6 grade calculated by www.editcentral.com on 6/14/09 using the first paragraph of the first chapter.

Barkley’s intervention addresses the following parenting techniques in both the clinician and parent manuals: understanding why children misbehave, paying attention to your child’s positive behavior, using praise, response/cost, time out, managing misbehavior in public, and handling future behavior problems. Further, the goals of Barkley’s (1997) intervention are as follows:
1. To improve parental management skills and competence in dealing with child behavior problems, particularly noncompliant or defiant behavior.

2. To increase parental knowledge of the causes of childhood defiant behavior and the principles and concepts underlying the social learning of such behavior.

3. To improve child compliance with commands, directives, and rules given by the parents.

4. To increase family harmony through the improvement of parental use of positive attention and other consequences with their children; the provision of clear guidance, rules, and instruction to those children; the application of swift, fair, and just discipline for inappropriate child behavior; and general reliance on principle-guided parenting behavior (p. 3-4).

Barkley’s clinician and parent manuals were selected for a number of reasons. First, the parent interventions used by this model have strong empirical support for their efficacy (e.g., Anastopoulos et al., 1993; Patterson et al., 1993) and effectiveness (e.g., Irvine et al., 1999). Also, the investigators have experience using Barkley’s materials and implementing his interventions with parents in both individual and group formats. Further, Barkley’s program is a widely used program that is easily understood by clinicians and parents alike (Carr, 1999). Finally, Barkley’s program is relatively inexpensive to purchase and implement, and requires no formalized, costly clinician training.

Although most of Barkley’s research has focused primarily on parents of defiant children or for those with a diagnosis of ADHD, a few studies have evaluated the
effectiveness of the parenting techniques Barkley teaches among children with a variety of disruptive behavior problems and among children with and without a clinical diagnosis (e.g., Cunningham et al., 1995; Barkley, 1997). Further, Barkley (1997) states in the introduction to his clinician manual that his intervention package was designed for “children who display noncompliant, defiant, oppositional, stubborn, or socially hostile behavior alone or in conjunction with other childhood disorders” (p. 2). He also states that although his clinician manual is “intended for use with clinically referred populations of children…portions of the program also may be quite valuable for use with mild situational behavior problems in otherwise normal children whose families are being seen for more general parent, marital, or family therapy” (Barkley, 1997, p. 2). Given this prior research and also the current emphasis in the field on preventative research, the investigators decided to accept all parents who felt they would benefit from the intervention, rather than merely parents of children with an externalizing diagnosis.

Barkley’s (1997) manual is written to be used in the context of individual therapy. However, he offers some suggestions as to how to modify the parent sessions to a group format. For instance, Barkley suggests including four to eight sets of parents in each group (i.e., 8-16 people). Further, he recommends having parents role play with each other rather than practicing in session with their children as would be done in individual therapy. Barkley (1997) also notes that group training “allows parents an opportunity to commiserate about their experiences with the behavior problem children as well as to share possible solutions each has found in dealing with certain problems” (p. 71).