An Adaptation and Pilot Implementation of an Effective Intervention Program Targeting Externalizing Behaviors in Early Childhood

by

Lerzan Coşkun

A Thesis Submitted to the
Graduate School of Social Sciences
in Partial Fulfillment of the Requirements for
the Degree of

Master of Arts

in

Psychology

Koç University

August 2008

Koç University

Graduate School of Social Sciences

This is to certify that I have examined this copy of a master's thesis by

Lerzan Coşkun

and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by the final
examining committee have been made.

Committee Members:

_____

Nazlı Baydar, Ph. D. (Advisor)

_____

Çiğdem Kağıtçıbaşı, Ph. D.

_____

Fatoş Erkman, Ph. D.

_____

Institute of Social Sciences, Director

Date: _____

STATEMENT OF AUTHORSHIP

This thesis contains no material which has been accepted for any award or any other degree or diploma in any university or other institution. It is affirmed by the candidate that, to the best of her knowledge, the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signed Lerzan Coşkun

ABSTRACT

This study presents the pilot implementation of a parenting training program aiming to prevent or halt the development of externalizing behaviors in early childhood. The parenting training program, The Incredible Years Program, was translated and adapted from English for use with Turkish families. The training program was evaluated with 44 intervention and 78 control parents of children at K-2 grades of two schools in Istanbul. The training included 15 biweekly sessions. In these sessions, the participants viewed videotaped examples of parent-child interactions and discussed the child-rearing concepts. The evaluation findings indicated that (i) the training effects were large for reducing externalizing behaviors and moderate for increasing prosocial behaviors; (ii) no significant intervention effects could be detected on any self-reported parenting behaviors; (iii) the level of attendance to program was significantly associated with the effectiveness of the program; (iv) the parents of children with fewer prosocial behaviors were less satisfied with the training program than other parents; and, (v) higher program satisfaction was associated with a greater increase in children's prosocial behaviors. The major contributions of the present study were to prepare the curriculum for an empirically validated parenting training program addressing externalizing behaviors of young children and to lay groundwork for a comprehensive evaluation of the program as a preventive intervention for Turkish parents.

Keywords: externalizing behaviors, intervention programs, parent training, evaluation study

ÖZET

Bu çalışma, erken çocukluk dönemindeki dışsallaştırma davranışlarını önlemeyi amaçlayan bir eğitim programının pilot uygulamasına yer vermektedir. Eşsiz Yıllar Programı, Türk ailelerinin kullanımına sunulmak üzere tercüme edilmiş ve uyarlanmıştır. Eğitim programını değerlendirme çalışması, çocukları İstanbul'daki iki okulun anasınıfı, birinci sınıf ya da ikinci sınıfına devam eden müdahale grubundaki 44 kontrol grubundaki 78 ebeveynin katılımıyla gerçekleştirilmiştir. Eğitim haftada iki kez gerçekleştirilen 15 oturumu kapsamıştır. Bu oturumlarda katılımcılar ebeveyn-çocuk etkileşimlerini içeren videolar izlemiş ve çocuk yetiştirmeye ilişkin kavramlar hakkında tartışmışlardır. Değerlendirme bulgularına göre (i) eğitimin dışsallaştırma davranışlarını azaltma hususunda büyük, olumlu sosyal davranışları arttırma hususunda orta düzeyde bir etkisi olduğu bulunmuştur; (ii) katılımcıların kendi beyanlarına dayanan ölçümler ışığında, eğitimin ebeveynlik davranışları üzerinde etkisi olmadığı tespit edilmiştir (iii) katılım düzeyi ve programın etkinliği arasında anlamlı bir ilişki bulunmuştur; (iv) daha az olumlu sosyal davranış gösteren çocukların ebeveynlerinin eğitim programından daha az memnun kaldıkları tespit edilmiştir; (v) yüksek program memnuniyeti ve çocukların olumlu sosyal davranışlarındaki artış arasında bir ilişki bulunmuştur. Bu çalışma, küçük çocuklardaki dışsallaştırma davranışlarını ele alan ve görgül geçerliği olan bir ebeveyn eğitim programının içeriğinin oluşturulmasına katkıda bulunmuş ve programın Türkiye'deki ebeveynlerle kullanımına yönelik daha geniş kapsamlı ve detaylı bir etkinlik çalışmasına zemin hazırlamıştır.

Anahtar Kelimeler: dışsallaştırma davranışları, müdahale programları, ebeveyn eğitimi, değerlendirme çalışması

ACKNOWLEGMENTS

I would like to thank Assoc. Prof Nazlı Baydar for stimulating my interest in the intervention studies since the very first day I took her classes. Without her supervision and support, this challenging, yet comparably satisfying thesis would have never been accomplished. I would also like to thank my committee members Prof. Çiğdem Kağıtçıbaşı and Assoc. Prof. Fatoş Erkman for their comments and contributions to this thesis.

I am indebted to The Scientific and Technological Research Council of Turkey for funding this evaluative study. I would like to thank the administrators of Cenap Şehabettin Primary School and Cemal Gürsel Primary School for responding positively to our study and their willingness to work with us. I am also grateful to the parents at the intervention and control schools for their contributions to our evaluation study.

TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

INTRODUCTION

In this Master's thesis, an empirically validated parent training program targeting the reduction of externalizing behaviors in early childhood was translated into Turkish. Following the translation process, a pilot implementation of the training program was conducted and evaluated by using a pre-post experimental-control design. This thesis contains the description of this study and the findings.

In the rest of this section, the rationale for interventions to reduce externalizing problems, in particular parent training programs, is provided. Then, a detailed account of the reasons for adapting the Incredible Years Basic Parent Training Program (IYP) is given. Finally, a brief description of the pilot implementation of the training program and the hypotheses of the evaluation study are presented.

Externalizing behaviors receive considerable attention due to the stability, the disruptive nature, and the sequelae of these behaviors. Early externalizing behaviors are relatively stable (Heller, Baker, Hanker & Hinshaw, 1996; Rubin, Burgess, Dwyer & Hastings, 2003; Smith, Calkins, Keane, Anastopoulos & Shelton, 2004) and lead to more serious antisocial acts in the future when left untreated (Hinshaw & Lee, 2004; Lewinsohn, Gotlib & Seeley, 1995; Webster-Stratton & Taylor, 2001). Due to the disruptive nature of their behaviors, children with externalizing behaviors are likely to be rejected by their peers (Laird, Jordan, Dodge, Pettit & Bates, 2001; Wood, Cowan & Baker; 2002; Vaughan, Hogan, Lancelotta, Shapiro & Walker, 1992). Rejection by socially competent friends reduces these children's exposure to prosocial interactions which would support the development of social

skills. Furthermore, rejection by socially competent peers may lead to establishment of antisocial peer groups over time (Webster-Stratton & Taylor, 2001).

Children with externalizing behaviors also experience difficulties in the academic domain. Externalizing behaviors interfere with learning processes and result in underachievement and grade retention (Blair, 2001; Hinshaw, 1992). Peer rejection combined with underachievement and grade retention bring forth negative attitudes towards school, and in turn externalizing students tend to be more vulnerable to early school drop-out (Bohon, Garber & Horowitz, 2007). Moreover, externalizing behaviors have far-reaching consequences, such as delinquency and substance use in adolescence and early adulthood (Hinshaw & Lee, 2004; Lewinsohn, Gotlib & Seeley,1995; Webster-Stratton & Taylor, 2001). All those negative consequences underscore the need for services in relation to conduct problems.

Parent training has been the focus of intervention efforts to reduce externalizing behaviors due to the role of harsh, critical, punitive, and inconsistent parenting practices in the development and/or escalation of externalizing behaviors (Kalb & Loeber, 2003; Lynch et al., 2006; Mahoney, Donnelly, Lewis & Mynard, 2000; Rothbaum & Weisz, 1994). Intervention literature shows that it is possible to change parenting practices to support children's prosocial development and to reduce externalizing behaviors (Barlow, Parsons & Brown, 2005; Rafe, 2006; Webster-Stratton & Hammond, 1998). Therefore, parent training programs that cultivate supportive parenting practices and positive discipline strategies constitute an important means to prevent children's negative behaviors.

Despite the negative outcomes associated with externalizing behaviors in the short and the long term, there are a few studies in Turkey focusing on this issue. The services targeting conduct problems are carried out mostly in private counseling centers which allow limited access by low SES families. This is especially unfortunate because poverty is known to reduce the capacity for supportive and involving parenting (McLoyd, 1990; Patterson & Dishion, 1988). With this consideration, Incredible Years Basic Parent Training Program (IYP) was translated/adapted to Turkish. The choice was based on four reasons that are discussed in the following paragraphs. First, the IYP is qualified as one of the few programs that have been clinically proven for reducing conduct problems (Brestan & Eyeberg, 1998). Second, the IYP has a strong theoretical foundation. Third, the standardized curriculum and established materials of the IYP makes dissemination of the program relatively easy. Fourth, the IYP follows a collaborative training model which allows a culturally sensitive approach towards parent training and the reduction of behavior problems in children.

The IYP has a long-standing success in yielding positive outcomes for parents and children. The Incredible Years parenting program was selected as the winner of the best prevention program of 1997 by the National Mental Health Association. Center for Substance Abuse Prevention (CSAP) selected the IYP as an exemplary and one of the most promising programs for delinquency prevention in the United States. Office of Juvenile Justice Delinquency Prevention (OJJDP) declared the IYP to be "Model Program" for early violence prevention. Rand Cooperation announced the IYP to be one of the well-designed early childhood intervention programs. Home Office in the UK also recommended the IYP as one of the evidenced-based interventions for antisocial behavior (http://incredibleyears.com/About/recognition.asp).

The success of the Incredible Years parent training program arises from having a sound theoretical basis. The IYP is grounded on behavioral/social-learning principles that describe how behaviors are learned and how they can be modified. This approach posits that behaviors are reinforced through interactions established with other people. Therefore, the IYP puts emphasis on parent-child interaction while handling children's misbehaviors. Changing the way parents respond to specific child behaviors and helping the parents establish positive interactions with their children are considered to be the key to reducing children's negative behaviors.

The IYP has a structured format and established training materials. The materials include a leader's manual and videotapes focusing on four topics: (1) "Play", (2) "Praise and Rewards", (3) "Effective Limit Setting", and (4) "Handling Misbehavior". Videotaped vignettes illustrating parent-child interactions in family life situations are followed by group discussions. Parents discuss child-rearing concepts, alternative solutions to control child behavior and practice new skills through role-playing. After each session, parents are assigned homework activities involving the topic of that session. Homework activities facilitate the active involvement of the parents and help transfer what is learned in group sessions to daily interactions. In sum, the well-defined curriculum and the structured format of the program enhances the potential for dissemination, and in turn, facilitates widespread implementation and further evaluation studies.

The IYP adopts a collaborative training model in which parents identify their problems in a guided session and are encouraged to produce alternative solutions to those problems. The group leader facilitates collaboration through reflection, reframing, reinforcement, support and acceptance, teaching of important concepts and encouragement of

each parent's participation. Rather than dispensing advice to parents, the group leader empowers the parents to develop their own strategies used for interacting with their children. Because the parents formulate their own goals and develop their own strategies, the IYP has a built-in capability to be culturally sensitive in solving behavior problems. Not surprisingly, adaptation studies of the IYP in different countries (e.g., Norway, U.K.) have been successful in bringing positive outcomes for children and parents (see Section 2.3.3 for further details). With this consideration, this master thesis aimed at adapting the IYP to Turkish for use with families living in Turkey. Program curriculum was adapted in its entirety for the use of professionals who work with parents to help them manage the behavior problems of their children.

Following the translation/adaptation of the IYP, a pilot implementation of the training program was carried out. Parents received 15 sessions of training, each lasting two hours. During these sessions, the group leader presented information on basic principles of child directed play, giving praise and rewards to children, effective limit setting and handling misbehavior. One-to-two weeks prior to the start and after the completion of the program, evaluation data on specific child and parenting behaviors were collected. In addition, the parents in the intervention group completed a comprehensive satisfaction questionnaire in which they were asked to evaluate various aspects of their training experience such as the ease and usefulness of the teaching format and newly acquired parenting techniques and the effectiveness of the group leader. In this way, the present study aimed at gathering preliminary data on the effectiveness and the acceptability of the program in the Turkish context.

In the light of the previous evaluation studies of the IYP, parent training was expected to improve child and parenting behaviors. First, it was predicted that the training would be associated with significantly lowered levels of aggression and other externalizing behavior problems in children. As it is discussed in detail the following sections, the literature points at a link between harsh parenting and the externalizing behaviors. Power assertive practices serve as a model for children and evoke similar behaviors as a result of the increasing coercive exchanges between the parent and the child. Therefore, by teaching parents more effective and respectful discipline strategies such as time out, loss of privileges, natural and logical consequences, it was expected that newly acquired strategies would replace physically punitive practices, and hence, there would be a reduction in children's acting out behaviors.

Second, there would be marked improvements in children's prosocial behaviors after the training program. The IYP considered parental attention as the key to manage children's behaviors. According to this point of view, children continue to act in ways that receive attention. Therefore, the IYP taught the parents to focus on children's positive behaviors and reinforce them with social and tangible rewards while ignoring their negative behaviors. As a result, children would learn that there are no payoffs for inappropriate behaviors. Therefore, children were expected to engage in fewer negative and more prosocial behaviors because this pattern of behavior was expected to become rewarding.

Third, the training would significantly reduce the use of corporal or harsh punishment. As it was mentioned before, one of the major goals of the IYP is to reduce use of harsh punishment by teaching parents more effective strategies to handle their children's misbehaviors. Therefore, it is expected that parents would resort to less harsh punishment as a result of training.

Fourth, the training would lower parents' demand for compliance from their children. The IYP emphasized maintaining a balance between parents' and children's use of control. That is, the parents were encouraged to establish a few household rules to ensure their children's safety and let their children to develop self-control in other domains as much as possible. For this reason, it was expected that parents would expect obedience less frequently from their child after the training.

Fifth, the training was expected to increase parental warmth. The IYP encouraged parents to establish daily play sessions with their children. During the play sessions, parents were expected to praise their children's ideas and show physical affection to their children. For this reason, the training was expected to be associated with an increase in parental warmth.

Sixth, the training was expected to enhance the use of reasoning with children. The IYP encouraged parents to reason with children as children would assume more responsibility for their own behaviors when the consequences of those behaviors were explained to them in advance. Therefore, the parents were expected to use a more inductive approach while exercising authority as a result of the training.

Seventh, the effects of the training would be more pronounced for the families with higher attendance rates than those who attended fewer training sessions. The topics covered during the training were cumulative and the parents who attended regularly were expected to have a better command of the strategies and skills taught throughout the training. Consequently, the effects of the intervention were expected to be dose-dependent.

Lastly, it was hypothesized that parental satisfaction would be a significant predictor of the intervention outcomes. The parents who were more satisfied with the program were expected to internalize the child rearing principles taught during the training and to be motivated to put those principles into practice. Accordingly, higher program satisfaction would result in higher intervention effectiveness.

Chapter 2

LITERATURE REVIEW

This section starts with a brief description of the externalizing behaviors. Second, an overview of the negative outcomes associated with externalizing behaviors is provided. Third, the link between parenting practices and externalizing behaviors is examined. Fourth, the role of intervention programs in reducing externalizing behaviors is explored. Fifth, the effectiveness of the IYP is summarized and the findings of the previous replication studies of the IYP are presented. Last, a detailed account of the content of the IYP is given.

2.1 Significance of Externalizing Behaviors

2.1.1. Definition of Externalizing Behaviors and Their Temporal Stability

Externalizing behaviors comprise a broad range of symptoms such as impulsivity, distractibility, hyperactivity, oppositional behavior, aggressive behavior, destructive behavior, temper tantrums, and poor frustration tolerance that are expressed outwardly, and are disruptive to the family, peers and adults (Olympia et al., 2004). In addition to the disruptive nature of externalizing behaviors, the concern of researchers about externalizing behaviors stems from the stability and the sequelae of these behaviors.

Stability refers to the maintenance of the rank order of individuals in relation to the behavior of interest over time (Bornstein & Suess, 2000). Research has shown that externalizing behaviors are moderately stable in early childhood (Heller, Baker, Hanker & Hinshaw, 1996; Rubin, Burgess, Dwyer & Hastings,2003; Smith, Calkins, Keane,

Anastopoulos & Shelton, 2004) and the stability of behavior problems in older children and adolescents is comparable the stability of intelligence (Hoffstra, van der Ende & Verhulst, 2000; Verhulst & van der Ende, 1995). Nevertheless, very early externalizing difficulties (i.e., those displayed in toddler years) are not necessarily associated with later adjustment problems (Heller, Baker, Hanker & Hinshaw, 1996). Noncompliant and aggressive behaviors in toddler years might be transitory and arise from young children's emerging autonomy, restricted verbal skills and the efforts to test the limits (Campbell, Shaw & Gilliom, 2000).

Because early behavior problems are relatively normative and likely to subside with growing age, differentiating age-related behaviors from early-emerging serious problems is an important task for the identification of at-risk children for externalizing behaviors (Campbell, 1995). Campbell (1990) suggested that early problems are more likely to persist over time when frequent and severe co-occurring problems are evident and those problems interrupt several domains of functioning (e.g., social, cognitive); when problematic behaviors are expressed with different people (e.g., peers, siblings, adults) and displayed in multiple contexts (e.g. home, childcare). In addition, early behavior problems are found to persist in the context of family adversity and stress (Greenberg, Lengua, Coie & Pinderhughes, 1999).

2.1.2 Sequelae of Externalizing Behaviors

Children with externalizing behaviors encounter difficulties in their peer relationships and in their academic life. Moreover, externalizing behaviors have far-reaching consequences in the subsequent years such as delinquency and substance abuse. This section provides an overview of the negative outcomes associated with externalizing behaviors.

Literature on conduct problems points to the co-occurrence of externalizing behaviors and peer rejection (Laird, Jordan, Dodge, Pettit & Bates, 2001; Wood, Cowan & Baker; 2002; Vaughan, Hogan, Lancelotta, Shapiro & Walker, 1992). In a meta-analytic study, Newcomb, Bukowski and Pattee (1993) investigated the behavior typologies of children in different sociometric groups. The findings revealed that as a whole, rejected children were more aggressive than average children. Waas and Graczyk (1999) examined the child behaviors that led to social rejection and concluded that aggressive and disruptive behaviors resulted in the least favorable peer nominations for the elementary school students. Erhardt and Hinshaw (1994) investigated the development of peer status among a group of unfamiliar children and indicated that ADHD children were rated as less desirable and received greater numbers of negative nominations compared to non-ADHD children. Moreover, aggressive and noncompliant-disruptive behaviors were found to be the strongest predictor of negative nominations.

The reason why children with externalizing behaviors are vulnerable to peer rejection is explained by van Lier, Vitaro, Wanner, Wuijk and Crijnen (2005) as follows. Children's antisocial acts are reinforced when peers give in to coercive behaviors, use of physical power, and threats. Accordingly, antisocial children maintain their conviction that antisocial behaviors yield immediate beneficial outcomes. Nevertheless, contrary to antisocial children's beliefs, antisocial acts are costly in the long-run. Due to victimization, peers tend to refrain from interactions with antisocial children and reject them in favor of prosocial peers.

Research shows that externalizing behaviors co-occur with academic difficulties. Arnold (1997) indicated that the negative association between externalizing behaviors and

emerging academic skills (i.e., letter recognition, expressive vocabulary skills, receptive vocabulary skills) was already evident among children as young as age 3. Moreover, academic difficulties got more pronounced with growing age. In addition, children with behavior problems receive less instruction than other children. In a longitudinal study, Blair (2001) examined the risk factors associated with school difficulties and found that externalizing behaviors predicted grade retention. Children with clinical levels of externalizing problems were almost seven times more likely to experience grade retention than others.

Origins of conduct problems may predate school entry. Teachers may inadvertently contribute to these preexisting problems by providing less instruction and support to these children (Arnold, 1997). Besides, if the teachers lack adequate classroom management skills, they may fail to intervene when problems arise with peers (Webster-Stratton & Taylor, 2001). Peer rejection further keeps children with conduct problems from benefiting from social learning opportunities. Jenson, Olympia, Farley, and Clark (2004) indicated that the two skills that were most appealing in the school context were the academic and the social skills. Therefore, underachievement, particularly in reading (Hinshaw, 1992), and grade retention that partly arise due to conduct problems may bring forth negative attitudes towards school, and consequently externalizing students tend to be more likely to drop out of school.

In addition to the difficulties experienced in social and academic domains, externalizing behaviors have consequences that are apparent in adolescence and early adulthood, such as delinquency and substance use. A number of studies indicate that childhood externalizing behaviors predict adolescent delinquency (Hinshaw & Lee, 2004; Webster-Stratton & Taylor, 2001). As a result of peer rejection experienced in childhood,

externalizing children affiliate with other rejected children and this gives rise to the formation of deviant peer groups over time (Webster-Stratton & Taylor, 2001). Indeed, research showed that antisocial peer involvement was more common among adolescents who had displayed consistently high levels of externalizing behaviors than others (Laird, Jordan, Dodge, Pettit & Bates, 2001).

Externalizing problems at young ages have also been identified as a risk factor for substance abuse in adolescence. In an effort to explore the risk factors associated with mental health and substance use, Lewinsohn, Gotlib & Seeley (1995) reported externalizing behavior problems to be the strongest predictor of the onset of substance use disorder among high school students.

2.2 The Role of Parenting Practices in the Development of Externalizing Behaviors

Child-caretaker relationship is the foundation upon which later social interactions are built (Shields & Cicchetti, 2001). Therefore, the manner in which parents interact with their children is related to the development of patterns of behavior, including negative behaviors, which are expressed with parents as well as other individuals.

Several theories have been developed to clarify how parenting practices are linked to the development of conduct problems. Among those theories, the most prominent one is the coercion theory (Patterson, 1982). According to this theory, parental deficits in child management results in increasingly coercive interactions within the family. The coercive cycle begins with the parent's attempt to alter a child's ongoing activity. The child displays

an aversive behavior (e.g., whining, complaining, yelling) in response to the parent's directive. When the parent does not follow his/ her directive and gives in to the child's aversive behavior, the child is negatively reinforced for this strategy. Although the parent terminates the aversive event and receives instant relief by giving in, the probability that the child will employ aversive behaviors in the future is increased. The result is that the child continues to engage in aversive behaviors and the parent continues to respond with angry but ineffective strategies. In consequence, the parent and the child develop negative beliefs about each other which over time reinforces one another's coercive behaviors.

In addition to the coercive cycle, externalizing behaviors can be learned through modeling. A wide variety of behaviors can be acquired through observing the others performing them. Therefore, children witnessing the parental conflict, experiencing domestic violence, or observing parental anger directed to themselves are more likely to display acting-out behaviors. That is, exposure to angry exchanges between adults and being subjected to power assertive parenting practices serve as negative models of behavior and disinhibit similar behaviors in children.

Externalizing behaviors also develop and are maintained in the context of family adversity. Patterson and Dishion (1988) claim that social disadvantage (low income, low education, low levels of employment or unemployment) is associated with elevated levels of stress on part of the parents, which in turn, brings forth use of harsh discipline during confrontations with the child. Use of harsh discipline exacerbates the power struggle between the parent and the child. As a result, the increased coercive exchanges between the parent-child dyad lead to antisocial traits in children. Likewise, McLoyd (1990) suggests that poverty reduces the capacity for supportive, involved parenting with psychological distress as

the mediating variable. Accordingly, children display low levels of socio-emotional competence due the lack of positive parenting practices.

Not surprisingly, extant literature points at the link between negative parenting practices (e.g., harsh and inconsistent discipline, lack of warmth and responsiveness) and externalizing behaviors (Gershoff, 2002; Hart, Ladd & Burleson, 1990; Kuczynski, Kochanska, Radke-Yarrow & Girnius-Brown, 1987; Pettit & Dodge, 1993; Stormshak, Bierman, McMahon, Lengua & CPPRG, 2000). In a recent study, Dodge and Petit (2003) reviewed the empirical findings of various longitudinal studies and indicated that early harsh and inconsistent discipline was identified as a major risk factor for subsequent conduct problems. Moreover, when physical discipline took the form of physical abuse, it brought forth more unfavorable outcomes for the adolescents.

Despite the well-documented link between negative parenting practices and externalizing behaviors, most studies in parenting literature are vulnerable to some methodological difficulties. That is, it is hard to disentangle whether the suggested link is due to the negative parenting practices, coexisting environmental factors or genetic transmission of the parental characteristics associated with the parenting practices (e.g. power assertion) (Kazdin, Benjet, 2003). To overcome this difficulty, Lynch et al. (2006) investigated the link between harsh punishment and the child behavioral outcomes by using a sample of twins and their children. The analyses pointed at a moderate link between harsh physical punishment (e.g. kicking, punching) and the externalizing behaviors. Moreover, when the twin pairs employed different punishment styles, use of harsh punishment predicted more externalizing symptoms than did the milder forms of punishment (e.g., scolding, spanking).

2.2.1 The Variability in the Sequelae of Harsh Parenting in Different Cultural Contexts

Despite the empirical evidence pointing at the negative implications of power assertive practices, the consequences of physical discipline might vary according to the cultural context in which those practices are carried out. Deater-Deckard, Dodge, Bates and Pettit (1996) reported that the parent's use of high levels of physical discipline predicted high levels of teacher-rated externalizing behaviors for European-American children. On the other hand, a negative, yet insignificant association was found between physical discipline and teacher rated externalizing behaviors for African-American children. In a recent longitudinal study of a group of children from pre-kindergarten years to grade 11, the experience of physical discipline both in early childhood and during early adolescence was associated with elevated levels of externalizing behaviors for European-American adolescents (Lansford, Deater-Deckard, Dodge, Bates & Pettit, 2004). On the other hand, a negative, yet insignificant association was found between parents' use of physical discipline in early childhood and adolescence externalizing behaviors for African-American adolescents. Moreover, the experience of physical discipline in early adolescence was associated with lower levels of externalizing behaviors for African-American adolescents. In an effort to explore the variables associated with child behavior problems, Javo, Rønning, Heverdahl and Rudmin (2004) compared Samis - an indigenous Arctic population- to a majority Norwegian sample and found a significant positive association between physical discipline and externalizing behaviors only for the majority Norwegian children.

The variation in the outcomes associated with power assertive practices is supposed to arise from the distinct meanings ascribed to parental control in different ethnic and cultural groups. Rudy and Grusec (2006) proposed that when authoritarian parenting is considered as normative and essential for the optimal child development in a particular culture, such

practices are not expected to reflect parental negativity. Likewise, Kağıtçıbaşı (1996) stated that how children interpret authoritarian parenting depends on what is normative in a particular culture. That is, in interdependent cultures, children perceive parental control as normative and in turn, they do not infer parental hostility or rejection. On the other hand, in individualistic cultures in which autonomy and self-reliance are emphasized, children interpret parental control as hostile or rejecting.

2.3 Intervention Programs for Reducing Externalizing Behaviors

2.3.1. The Role of Intervention Programs in Reducing and/or Preventing Externalizing Behaviors among School Age Children

Intervention programs targeting the reduction of conduct problems vary in the extent to which specific risk factors are addressed throughout the process (i.e., child risk factors, parent risk factors and school-related risk factors). Parent training programs receive considerable attention due to the established role of ineffective parenting practices in the development and/or escalation of externalizing behaviors. Parent training programs bring forth positive changes in child and parent behaviors particularly when directed to the families with younger children (Webster-Stratton, 1993) and directed to at-risk populations (Rafe, 2006). That is, parent training programs are found to be effective in improving behaviors of the children, facilitating positive parenting practices, and reducing power assertive and inconsistent discipline strategies (Barlow, Parsons & Brown, 2005; Webster-Stratton & Hammond, 1998). In addition, parent training programs are reported to improve child-parent interactions, enhance the self-efficacy of parents, and to alleviate parenting distress (Feinfeld & Baker, 2004). Moreover, the positive outcomes associated with the training (i.e., more

positive parent-child interactions, reduction in child behavior problems, enhanced self-efficacy of the parents, reduced parenting stress) are reported to be sustained at the follow-up studies (Feinfeld & Baker, 2004; Webster-Stratton & Hammond, 1998, Baydar & Webster-Stratton, 2008). On the other hand, marked improvements in the teacher-rated disruptive behaviors following the training program are relatively rare or non-existent (Feinfeld & Baker, 2004; Webster-Stratton & Hammond, 1998). Therefore, it might be suggested that parent training programs have limited effectiveness in generalizing the acquired positive child behaviors beyond the home context.

A current meta-analysis of interventions conducted with universal/selected, indicated or diagnosed populations indicated that majority of the programs targeting externalizing behaviors intervened only in parents, suggesting that parent interventions were considered as a central aspect of reducing children's externalizing behaviors (Rafe, 2006). This point of view was supported by another finding of the study indicating that the effect size of the reductions in children's externalizing behaviors and parents' negative practices were consistent, suggesting that improving parenting behavior is an effective way of reducing externalizing behaviors. In the same study parent training programs were also reported to be the most viable option to reduce child conduct problems when children were at risk or had elevated levels of externalizing behaviors.

2.3.2. The Effectiveness of the Incredible Years Parent Training Program

Brestan and Eyeberg (1998) reviewed 82 psychosocial treatment programs for conduct problems by using the criteria developed by Task Force on Promotion and Dissemination of Psychological Procedures (1995). Evaluation of the studies spanning over 29 years has shown that Incredible Years Parent Training is one of the two programs meeting the stringent criteria to be qualified as a "well-established" treatment. Several randomized trials of the Incredible Years Parent Training have demonstrated that the program was effective in improving the child and parent outcomes. Moreover, these findings were replicated when the training was directed to high-risk populations such as parents with psychological risk factors (Baydar & Webster-Stratton, 2008; Baydar, Reid & Webster-Stratton, 2003). The success of the IYP is probably due to the well-established content and the training methods based on empirical findings. That is, the IYP teaches the parents effective ways to interact with and discipline their children and improving the parent-child interaction and teaching discipline strategies were found to be the most effective methods to reduce externalizing behaviors and negative parenting (Rafe, 2006).

The Incredible Years Program has been proven to reduce conduct problems, to improve parent-child interaction and to improve the psychological adjustment of the parents. A marked decline was detected in the use of corporal punishment, negative commands and criticism. Parents reported improved self-efficacy and less parenting stress. Moreover, several studies showed that the IYP In addition, the positive outcomes of the program have been maintained over a period ranging from 1-to-3 years (Baydar & Webster-Stratton, 2008; Reid, Webster-Stratton & Hammond, 2003; Webster-Stratton, 1990; Webster-Stratton & Hammond, 1998; Webster-Stratton, Kolpacoff & Hollinsworth, 1988). Moreover, the

positive change in the parenting behavior attained through the program was reported to bring forth reductions in child externalizing behaviors (Reid, Webster-Stratton & Hammond, 2003).

2.3.3. Review of the replications of the Incredible Years Program

Replication studies of the Incredible Years Parent Training Program directed to the families of indicated and diagnosed children in Norway and UK yielded similar results to those of Webster-Stratton's original work. Findings revealed that there was a significant reduction in the total intensity of behavioral problems (Gardner, Burton & Klimes, 2006; Larsson et al., 2008). Apart form the mothers' reports, significant reductions were detected in the observed negative behaviors of children (e.g., noncompliance, destructiveness, hitting, yelling) (Gardner et al., 2006). Training was associated with enhanced positive parenting practices (e.g., praise, positive discipline strategies); whereas there were marked reductions in the use of harsh and inconsistent discipline strategies (Gardner et al, 2006; Larsson et al., 2008). Moreover, the positive change in parenting behaviors was reported to mediate the change in child behaviors (Gardner et al., 2006). Nevertheless, child behavioral improvements in home were not significantly generalized to the school context. Yet, reduction in the problematic behaviors at school was much larger for preschool children as compared to school age children (Larsson et al., 2008), suggesting the need for early parent intervention before negative behaviors are established at school. Parents reported enhanced self-efficacy and reduced parenting stress after the termination of the training (Gardner et al., 2006, Larsson et al., 2008). Moreover, improvements in the child and parent behaviors associated with the training were found to be sustained 1-year after the termination of the program.

2.3.4 The Content of the IYP

In the previous sections, the theoretical background and the training methods of the IYP are briefly described. This section aims at providing an overview of the content of the IYP. The IYP starts with the play program. Play is considered as a unique opportunity to support children's creativity, imagination, vocabulary and problem-solving skills. Parents are encouraged to set regular playtimes with their children. While playing with their children, parents are reminded to follow their children's lead. This allows the parents give their children an opportunity to use control and authority in socially accepted ways. In addition, parents model compliance by following their children's ideas and hence there is an increased likelihood that the children would comply with parental requests outside the play context. Play also reduces the tension between parents and children and helps build warm relationships between family members as parents and children laugh and have fun together during the daily playtimes.

Play program is followed by the praise and rewards program. During this phase, the group leader helps parents identify behaviors they want to promote and encourages the parents to praise the desired behaviors every time they occur. Parents are reminded to specifically describe their children's positive behaviors when giving praise. Thus, children better understand what is expected of them and are more likely to act accordingly in the future. However, there are some instances in which praise is not sufficient in managing children's behaviors. For this reason parents are also taught to develop and implement incentive programs to encourage positive behaviors in their children. Incentives are always used along with social rewards and finally phased out when children learn the targeted behavior.

The first two programs of the IYP focus on the positive aspects of parent-child relationship. Regular playtimes and use of praise and rewards for positive behaviors give credit to parents when they need to discipline their children. The third program focuses on establishing firm limits for child behavior. For this purpose, parents are taught to set few household rules and follow through with predetermined consequences when those rules are broken. Using consistent follow-through, children gradually stop testing their parents and learn what is expected of them. In addition to follow-through, parents are also asked to praise and reward children each time they comply with parental commands and requests.

Following the limit setting program, nonviolent discipline strategies for handling misbehaviors are presented. Those strategies include ignoring, time-out, natural and logical consequences and loss of privileges. Although those techniques necessitate a great deal of effort by parents, they provide invaluable benefits in the long term. First, parents explain the consequences of negative behaviors to their children in advance. Children make the choice of either behaving in desired ways or suffer the consequences of the inappropriate behaviors. Therefore, children assume responsibility for their own actions, and, gradually develop self-control. Second, non-violent discipline strategies are not humiliating for children and hence, do not result in anger or resentment towards the parent. Moreover, using these techniques, parents refrain from entering into heated debates with their children in conflict situations and do not reinforce such negative behaviors as whining, yelling, arguing or pleading. Third, by using the aforementioned discipline strategies, parents model use of non-violent solutions to interpersonal conflicts.

Chapter 3

METHOD

In this section, the methods adopted in this evaluation of the effectiveness of the pilot implementation of the IYP in the Turkish context are presented. The evaluation used a pre-post intervention-control design. The pilot study targeted parents of children between the ages of 6 and 8 years. This age range was targeted because of two reasons. First, parent training programs are reported to yield particularly positive outcomes when directed to the families of young children (Webster- Stratton, 1993). Second, empirical evidence indicates that early externalizing behaviors fuel serious adjustment problems in the future when left untreated (Hinshaw & Lee, 2004; Webster-Stratton & Taylor, 2001; Lewinsohn, Gotlib & Seeley, 1995). Thus, early intervention is deemed more beneficial than intervening in middle childhood or later.

The study participants were recruited from two state schools with kindergarten grades in Istanbul. The parents at the intervention and the control schools who had children within the predetermined age range and volunteered to participate in the study were included in the study. The pilot implementation of the Turkish adaptation of the IYP had a quasi experimental design because a random assignment of parents to intervention and control groups was not feasible.

The first subsection focuses on the design and the procedures of the present evaluation study. Next, an overview of the study participants and measures is provided. The last subsection presents the methods of data analyses.

3.1. Design and Procedure

The Turkish adaptation of the IYP was pilot tested and evaluated using a pre-post intervention-control design. Because the evaluation study targeted parents of kindergarten and early school-age children, state schools which had kindergarten grade were sought. With this consideration, an inspector of the Board of Education was contacted and a few potential sites were identified. The administrators of two of the nominated schools were contacted. Following the initial contact, each principal was visited at their schools and a detailed account of the study was provided to them. Both principals responded positively and were willing to work with us.

After the consent of the administrators was obtained, brochures of the training program were sent to parents of children at K-2 grades. These brochures briefly described the study and elicited the participation of the parents with a form that was on the brochure. The forms were collected back and the parents who volunteered to participate in the study were identified. A meeting was organized with interested parents for the pre intervention assessments. Pre intervention assessments of the intervention group were carried out two weeks prior to the training program at the lecture hall of the intervention school. The same procedure was followed with the control group one week after those assessments. Pre intervention assessments measured child and parenting behaviors during the past six months. Brief instructions were given to the respondents for filling the self-administered forms. Nevertheless, if parents had difficulty in filling out the forms on their own, two research assistants read the items to them and recorded their responses. At the end of the pre intervention assessments, small presents were given to the parents in the control group in order to encourage their participation in the post-test.

Following the pre intervention assessments, parents in the intervention group were given a choice of attending one of the two training groups that were conducted twice a week. The rationale for this decision was to facilitate scheduling of the training for the parents and to provide optimal conditions to the participants by keeping the group size small. Members of both groups received 15 sessions of training at the lecture hall of the intervention school, each lasting 2 hours. The meetings were scheduled during the hours when children were at school. During the meetings, the group leader presented information on the basic principles of child directed play, giving praise and rewards to children, effective limit setting and handling misbehavior. A series of 133 videotaped vignettes covering the aforementioned topics were presented throughout the training. Videotaped vignettes were followed by group discussions on child-rearing concepts and participants practiced new skills through role-playing. A coffee break was taken halfway through the sessions and the parents were offered refreshments. At the end of each session, participants were assigned home activities in order to help transfer what is learned in group meetings to daily practice. Each week parents evaluated the usefulness of the past week's content, the videotaped vignettes, the mode of instruction and the group discussions.

The time constraints made it impossible for the group leader to arrange make-up sessions for the parents who missed a group meeting. However, these parents were given a brief overview of the previous session during the coffee break. If the parents missed two consecutive meetings, the group leader called these parents and encouraged their attendance to the following meeting.

One week after the training program a celebration party was arranged for the participants. The participants shared their views about the group process and were asked to

discuss the ways in which they would get support as a parent in the future. Then the parents filled the same assessments as they did in the pre test. Yet, this time they were asked to evaluate both their own behaviors and their child's behaviors within the past two months. In addition, the participants were asked to evaluate the entire training program. After the post intervention assessments, certificates were given to parents who completed the training program.

An attempt was made to reach the parents in the intervention group who participated in the pre test, yet either left the program or never attended the training. Evaluation forms were submitted to kindergarten, first and second grade teachers who gave the forms to the attrited parents. Of the 23 parents who received the assessment forms 21.7% (n = 5) responded to our call and filled out the forms.

Two weeks after the training program, post intervention assessments of the parents in the control group were carried out. No contact was made with the control group between the pre-and post tests. The list of the parents who were expected to participate in the assessment was given to teachers in the control school and the teachers announced the date of the post intervention assessment to the parents. The parents were reminded to evaluate both their child's and their own behavior during the past two months. After the assessments parents in the control group were given small presents as a token of our gratitude for their contribution to the study.

3.2 Participants

The characteristics of the participants are provided in Table 3.1. The initial intervention sample consisted of 44 parents with children ranging in age from 5 to 8 (M = 7 years; SD = 0.9 years). The control sample consisted of 78 parents with children ranging in age from 5 to 9 (M = 6.7 years; SD = 0.7 years). Of the study children in intervention and control groups, 59.1% (n = 26) and 60.3% (n = 47) were boys, respectively. The mean ages of the parents in the intervention and the control groups were 36.6 (SD = 7.5) and 32.7 (SD = 5.8) years, respectively. Of the 44 parents in the intervention group, 4.5% (n = 4) had no schooling or dropped out from the elementary school; 18.2% (n= 8) were elementary school graduates; 15.9% (n = 7) were middle school graduates; 45.5% (n = 20) were high school graduates and 15.9% (n = 7) were college graduates. As for the parents in the control group, 3.8% (n = 3) had no schooling or dropped out from elementary school; 43.6% (n = 34) graduated from elementary school; 20.5% (n = 16) graduated from middle school; 26.9% (n = 21) graduated from high school; and 5.1% (n = 4) graduated from college. On average, the parents in the intervention and control groups had 1.4 (SD = 0.5) and 1.7 (SD = 0.7) children younger than 12 years of age, respectively.

As indicated in Table 3.1, there were several significant differences in the baseline characteristics of the intervention and the control groups. Specifically, both the parents and the children in the intervention group were older than the participants in the control group ($t(114) = 3.1$, $p = .00$, $t(120) = 2.4$, $p = .02$, respectively). A chi-square test of independence revealed that the participants in the intervention and the control groups differed in their level of education, χ^2 (4) = 12.1, $p = .02$. On average, the parents in the intervention group had fewer children who were younger than 12 years of age as compared to the parents in the control group, $t(120) = 2.0$, $p = .05$.

Table 3.1. Characteristics of the Study Sample

Characteristic	Control Group (N = 78)	Intervention Group (N = 44)	Total (N= 122)
Age of the study child*	6.7	7.0	6.8
Male study children (%)	60.3%	59.1%	57.9 %
Age of the study parent*	32.7	36.6	34.1
Parents' level of education*			
Had no schooling or left elementary school (%)	3.8%	4.5%	4.1%
Graduated from elementary school (%)	43.6%	18.2%	34.4%
Graduated from middle school (%)	20.5%	15.9%	18.9%
Graduated from high school (%)	26.9%	45.5%	33.6%
Graduated from college (%)	5.1%	15.9%	9.0%
Number of children at the household younger than 12 years of age *	1.6	1.3	1.6

* A significant difference of means (*t* test, two tailed) or percentages (chi-square test) of the intervention and control groups at $p<.05$.

3.3. Measures

Parent-report measures were used to assess children's negative and prosocial behaviors within the past six and past two months at pre- and post intervention assessments, respectively. Additionally, participants completed a parenting questionnaire in which they evaluated different aspects of their own parenting behavior. Several child behavior and parenting behavior scales were constructed for the purposes of evaluation of the effectiveness of the IYP. For the ease of interpretation, all scale scores were expressed as percentile scores.

In the present study, the major concern was to test the effectiveness of the IYP in the Turkish context. In addition, the variability in the intervention effects by level of parental education and child age was also addressed. Of the 44 intervention parents, 10 (22.7%) had less than junior high school education, 17 (38.6%) had less than high school education and 37 (84.1%) had less than college education. Of the 78 parents in the control group, 37 (47.4%) had less than junior high school education, 53 (67.9%) had less than high school education and 74 (94.9%) had less than college education. Of the children in the intervention group, 15 (34.1%) were younger than 7 years of age and 29 (65.9%) were 7 years of age or older. As for the children in the control group, 33 (42.3%) were younger than 7 years of age; whereas 45 (57.7%) were 7 years of age or older. Accordingly, high school education was specified as the cut off point to differentiate parents with high levels of education from the parents with low levels of education. Seven years of age was specified as the cut off point which differentiated young children from the older ones.

3.3.1 Eyberg Child Behavior Inventory (ECBI)

The ECBI (Eyberg & Robinson, 1983) is a 36-item parent rating scale of conduct problems for children between the ages of 2 and 17. Parents rate how often each behavior occurs on a 7-point scale ranging from never (1) to always (7). The item ratings are summed to yield the Intensity scores. The parents also indicate if they consider each behavior as a current problem on a yes-or-no format. The responses are coded as dummy variables (0-1) and multiplied with the corresponding item rating. The sum of multiplications of problem and frequency ratings for all items in the ECBI yields a total problem score.

The internal consistencies of the Intensity and the Total Problem scales were found to be .95 and .86 respectively (Robinson, Eyberg & Ross, 1980). The scale has been found to differentiate between non-clinical and clinically referred populations (Burns & Patterson, 1990). The scale has also been found to correlate well with Child Behavior Checklist (CBCL), a widely used measure to assess the externalizing problems of children (Boggs, Eyeberg & Reynolds, 1990).

The Turkish version of the ECBI was adapted by Baydar et al. (2007). In the adaptation study, the original 7-point Likert scale was converted into 5-point Likert scale. The data gathered from 51 Turkish parents who participated in the pilot study of the Early Childhood Development Ecologies in Turkey (Baydar et al., 2007) yielded three factors which were aggression (9 items), demand for attention (5 items) and behavior problems (20 items). The internal consistencies of the aggression (e.g., “Fights with the peers.”, “Has temper tantrums.”), demand for attention (“Whines.”, “Easily cries.”), and behavior problems (“Dawdles when getting dressed.”, “Argues with the parents about rules.”) scales were found to be .83, .56, and .87 respectively.

In the present study, the adapted version of the ECBI (Baydar et al., 2007) was used. The analysis of the data gathered from the pre intervention assessments of 122 parents yielded Cronbach's alpha values of .77 for the aggression, .48 and for the demand for attention and .85 and for the behavior problems scales.

3.3.2 Parenting Questionnaire (PQ)

PQ (Sanson, 1994) is a 30-item self-report measure of parenting practices. Parents rate the frequency of their own parenting behaviors on a 5-point scale ranging from never (1) to always (5). PQ consists of four subscales: demand for compliance (e.g., "I expect unquestioning obedience from my child."); punishment (e.g., "When my child misbehaves, I use physical punishment."); parental warmth (e.g., "There are moments in which my child and I are so close.") and reasoning (e.g., "I discuss reasons for rules with my child."). The internal consistencies of the demand for compliance, punishment, parental warmth, and reasoning subscales were found to be .75, .91, .76, and .80 respectively (Sanson, 1994).

The Turkish version of PQ was adapted by Baydar et al. (2007) and data gathered from 51 Turkish parents yielded the Cronbach's alpha values of .73 .83, .77, and .72 for the demand for compliance, punishment, parental warmth and reasoning subscales respectively.

In the current study, the internal consistencies of all subscales except for the parental warmth were found to be lower than those of Sanson's and Baydar et al.'s studies. The data gathered from the parents (n=122) at the pre test assessments yielded the Cronbach's alpha values of .66, .73, .89, and .69 for the demand for compliance, the punishment, the parental warmth and the reasoning subscales respectively.

3.3.3 Adaptive Social Behavior Inventory (ASBI)

The ASBI (Hogan, Scott & Bauer, 1992) is a 30-item parent rating scale of preschool children's social behavior. The parents rate the frequency of each behavior on a 3-point scale ranging from rarely or never (1) to always (3). The ASBI consists of three subscales which are express (e.g., "Is open about what s/he wants."), comply (e.g., "Cooperates with your request."), and disrupt (e.g., "Prevents other children from carrying out routines.").

In the current study, the version of the ASBI adapted by Baydar et al. (2007) for Turkish parents was used. The original 3-point Likert scale was converted into 5-point Likert scale in this adaptation of the ASBI. The analysis of the data gathered from 51 Turkish parents who participated in the pilot study of the Early Childhood Development Ecologies in Turkey (Baydar et al., 2007) yielded a subscale labeled the adaptive behaviors in negative situations (9 items). The internal consistency of the adaptive behaviors in a negative situation subscale (e.g., "Is worried about not getting enough.", "Gets upset when you don't pay enough attention.") was found to be .79. In addition, a total score of the overall adaptive behaviors was calculated by reverse coding the items in the disrupt subscale. The internal consistency of the Turkish adaptation of the ASBI total score scale was .86 (Baydar et al., 2007).

In the current study, pre intervention assessments of 122 parents yielded the Cronbach's alpha values of .62, and .83 for the adaptive behaviors in a negative situation and the total scales respectively.

3.3.4 Incredible Years Parent Program Satisfaction Questionnaire (PSQ)

PSQ is a 44-item parent rating scale to evaluate the training program. Parents were asked to evaluate the usefulness of the overall program (e.g., general view about the program); the usefulness of the teaching format (e.g., role playing, video modeling) and the specific parenting skills (e.g., timeout, ignoring); the difficulty of the teaching format and the parenting skills; the satisfaction with group leader (e.g., level of preparation for the sessions) on a 7-point scale ranging from very extremely negative (1) to extremely positive (7). Nine summary scores were calculated and the Cronbach alphas were found to be .61 for the overall value of the program, .63 for satisfaction with the group leader, .40 for the usefulness of teaching format, .58 for the usefulness of parenting techniques, .70 for the total usefulness (i.e. usefulness of parenting techniques and teaching format combined), .13 for the ease of teaching format, .78 for the ease of parenting techniques, .80 for the total ease (i.e. ease of parenting techniques and teaching format combined) and .77 for the total score. Total score and the overall value of the program score were the two summary scores that were used in the analyses of the program satisfaction.

3.4. Methods of Data Analyses

Data analyses were carried out in four stages. First, groups were compared on the basis of the treatment status. The baseline scores of the intervention and the control groups were compared using two-tailed *t*-tests. Following the t-test comparisons, the correlations among the pre intervention measures were analyzed in order to investigate the associations between pre intervention scores and establish construct validity. Next, a set of analyses addressing the nature of intervention attrition were conducted. The baseline scores of the participants who completed the pre intervention assessments and dropped out of the study were compared to

those who completed the study in the control and intervention groups separately with two-tailed *t*-tests.

Following these analyses validating the study design, the second set of analysis addressing the effectiveness of the IYP was conducted. With this purpose, the effects of the intervention status, level of parental education and child age on the outcome measures were tested. In addition to exploring the main effects of these three variables, the variability in the intervention effectiveness by the level of parental education and child age were also examined. The interactions of the intervention status with the level of parental education and the child age were tested one at a time because of the concern for the statistical power due to the small sample size. The intervention effects were estimated by analyses of covariance (ANCOVA). The reason for using ANCOVA was to control for the differences in the baseline scores by using each baseline score as a covariate for comparing the corresponding post intervention scores of the intervention and control groups. The effect size for the effectiveness of the intervention for outcome measures was calculated using the following formula:

$$\text{Effect Size } (\delta) = \frac{\overline{X}^{e}_{post} - \overline{X}^{e}_{pre}}{S_{pooled}} - \frac{\overline{X}^{c}_{post} - \overline{X}^{c}_{pre}}{S_{pooled}}$$

In this formula, $\overline{X}^{e}s$ and $\overline{X}^{c}s$ stand for the mean scores of the intervention and control groups, respectively. A subscript of S_{pooled} indicates the pooled standard error and was calculated using the following formula:

$$S_{pooled} = \sqrt{\frac{(N_e - 1)(S_e)^2 + (N_c - 1)(S_c)^2}{N_e + N_c - 2}}$$

In the above formula, N_e and N_c stand for the number of participants in the intervention and control groups; whereas S_e and S_c stand for the pre test standard deviations of the intervention and control groups, respectively. In calculating the pooled standard deviation, pre test standard deviations were used because they are not affected by the intervention (Morris & DeShon, 2002).

The third set of analyses investigated whether the level of attendance to program was associated with its effectiveness. For this purpose, pre intervention profiles of the study families (i.e. demographic characteristics and baseline levels of child and parenting behaviors) with different attendance levels were compared using chi-square tests for categorical variables and t-tests for continuous variables. Next, the effects of program attendance on intervention outcomes were analyzed. ANCOVAs were conducted to investigate the significant group differences among control, low-and high-attending groups on post intervention measures. The effects of the level of attendance to program on outcome measures were examined after controlling for the pre test scores, child age, and level of parental education.

The fourth set of analyses focused on parental satisfaction with the program. Initially, correlation analyses were conducted to examine whether pre-existing family characteristics were associated with program satisfaction. Next, the effects of program satisfaction on intervention outcomes were explored. Linear regression analyses were used in order to estimate the extent to which intervention outcomes were predicted by various aspects of program satisfaction. These analyses indicated whether those participants who were more satisfied with the program achieved greater change in their behaviors.

Chapter 4

RESULTS

The findings of the present study are presented in four sections. First, analyses to establish the validity of the design, the measures, and the sample are presented. Second, the intervention effects on outcomes of interest are investigated. Third, the profiles of the intervention groups with two different attendance levels are presented. Following this, the variability in the intervention outcomes with respect to the level of attendance to program is discussed. Fourth, analyses addressing program satisfaction, its predictors and its association with program effectiveness are presented.

4.1 Behavior Problems and Parenting Behaviors of the Sample Prior to the Intervention

This section starts with the examination of pre-existing differences in child and parenting behaviors of the intervention and control groups. Following the group comparisons by treatment status, the associations between the pre intervention scores are described. The section ends with the examination of the differences between the participants who dropped out of and completed the study.

4.1.1 Comparison of the Intervention and Control Group Participants

The means and standard deviations of the pre intervention assessments are provided in Table 4.1. When baseline levels of negative child behaviors are examined, it is seen that the study children had initially low levels of aggression; whereas the level of demand for

attention was high. Overall, intensity score was higher than the total problem score, indicating that some negative child behaviors were not viewed as problematic by parents. The examination of the table also showed that study children had high baseline levels of both overall social competence and adaptive social behaviors in negative situations. As for the initial levels of the parenting behaviors, it is seen that punishment was low; whereas demand for compliance, warmth and reasoning were high for the study sample.

The control and the intervention groups had comparable scores for most of the parent-report measures except for the demand for attention and the total problem scales of ECBI (see Figures 4.1, 4.2, and 4.3). In terms of negative child behaviors, the intervention parents reported their children as being more demanding for attention (M = 51.4, SD = 14.6) than did the parents in the control group (M = 45.3, SD =16.5), $t(120) = 2.0$, $p = .04$. Likewise, the intervention mothers rated their child's behaviors as being more problematic (M= 34.1, SD =16.3) than did the mothers in the control group (M = 26.8, SD = 14.8), $t(119) = 2.5$, $p = .01$).

Figure 4.1. Baseline levels of negative child behaviors

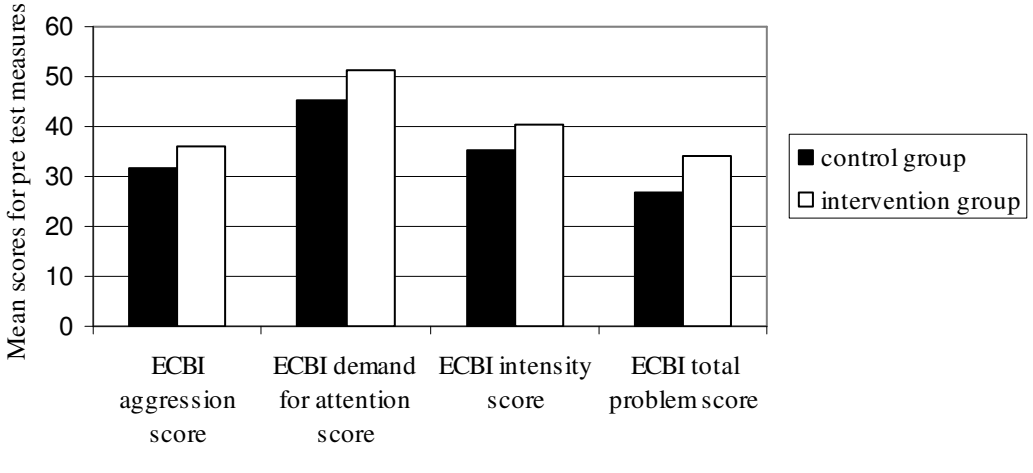


Figure 4.2. Baseline levels of prosocial child behaviors

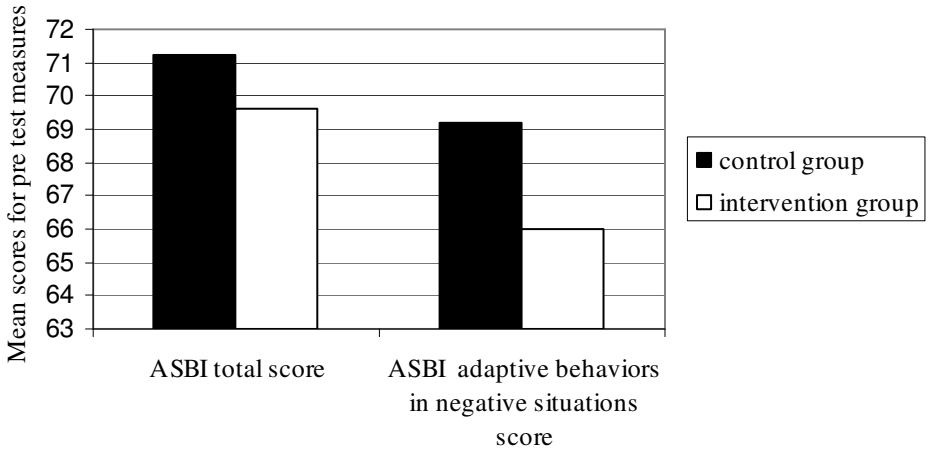


Figure 4.3. Baseline levels of parenting behaviors

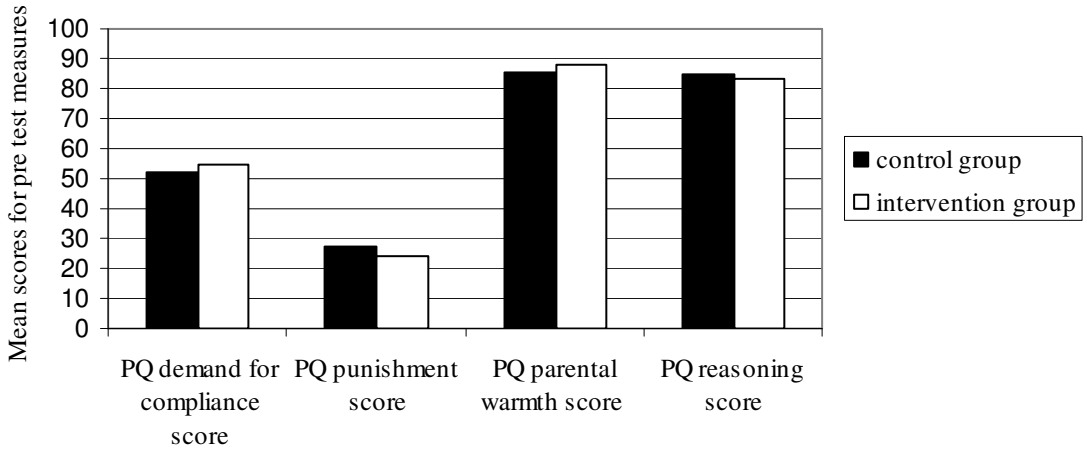


Table 4.1. Means and standard deviations of the pre intervention assessments.

Measures	Pre-intervention assessments		
	Control group (N = 78)	Intervention Group (N = 44)	Total (N =122)
ECBI aggression score	31.8	36.2	33.4
	(16.8)	(15.1)	(16.3)
ECBI demand for attention score	45.3*	51.4	47.5
	(16.5)	(14.6)	(16.1)
ECBI intensity score	35.4	40.6	37.3
	(13.6)	(15.2)	(14.3)
ECBI total problem score	26.8*	34.1	29.5
	(14.8)	(16.3)	(15.7)
PQ demand for compliance score	51.9	54.9	53.0
	(19.2)	(19.1)	(19.1)
PQ punishment score	27.3	24.1	26.1
	(13.2)	(13.4)	(13.3)
PQ parental warmth score	85.6	87.9	86.5
	(19.0)	(10.1)	(16.4)
PQ reasoning score	84.8	83.5	84.4
	(13.9)	(11.2)	(13.0)
ASBI total score	71.3	69.6	70.7
	(10.5)	(9.5)	(10.1)
ASBI adaptive behaviors in negative situations score	69.2	66.0	68.1
	(12.5)	(11.3)	(12.1)

Note. ECBI= Eyberg Child Behavior Inventory; PQ= Parenting Questionnaire for 3-7 year olds ASBI= Adaptive Social Behavior Inventory.
* Significant difference of means of the intervention and control groups at $p<.05$, two-tailed t-test.

4.1.2 Correlations among the Pre test Measures of the Study Sample

The correlations among pre test parent report measures appear in Table 4.2. The table points to a strong correlation between the ECBI intensity and total problem scores (r = .85, p< .05) suggesting that the study parents were consistent both in reporting their child's various negative behaviors and in the way how they perceived (i.e., problematic or non-problematic) those behaviors.

The parenting behaviors which were significantly associated with children's negative behaviors were demand for compliance and physical punishment. The former was moderately associated with aggression (r = 0.28, p< .05), demand for attention (r = 0.28, p< .05) the ECBI intensity score (r = .24, p< .05) and the ECBI total problem score (r = .29, p< 05). Physical punishment was strongly associated with aggression (r = .53, p< .05), moderately associated with demand for attention (r = .23, p<.05), and substantially associated with both the ECBI intensity (r = .40, p<.05) and problem scores (r = .41, p<.05). In addition, the ECBI intensity score was negatively associated with parental warmth (r = -.24, p<.05) and reasoning (r = -.21, p<.001); whereas the ECBI total problem score was modestly and negatively associated with reasoning (r = -.19, p<.001). All associations between children's negative and social adaptive behaviors were significant and negative. In particular, aggression was associated with low overall social competence (r = -.49, p< .05) and strongly associated with adaptive behaviors in negative situations (r = -.58, p< .05). Demand for attention was moderately associated with low overall social competence (r = - .34, p< .05) and substantially associated with a lack of adaptive behaviors in a negative situation (r = - .45, p< .05). The ECBI intensity score was strongly and negatively associated both with overall

Table 4.2. Inter-correlations between the pre test measures for the study sample.

	2	3	4	5	6	7	8	9	10
1. ECBI aggression	0.50**	0.69**	0.74**	0.28**	0.53**	-0.12	-0.14	-0.49**	-0.58**
2. ECBI demand for attention		0.58**	0.66**	0.28**	0.23**	0.03	-0.02	-0.34**	-0.45**
3. ECBI intensity score			0.85**	0.24**	0.40**	-0.24**	-0.21*	-0.53**	-0.55**
4. ECBI total problem score				0.29**	0.41**	-0.12	-0.19*	-0.51**	-0.56**
5. PQ demand for compliance score					0.38**	0.07	-0.01	-0.14	-0.26**
6. PQ punishment score						-0.20*	-0.19*	-0.29**	-0.35**
7. PQ parental warmth score							0.62**	0.41**	0.23*
8. PQ reasoning score								0.31**	0.21*
9. ASBI total score									0.73**
10. ASBI adaptive behaviors in negative situations score									

Note. * $p < .05$, ** $p < .01$

social competence (r = - .53, p< .05) and adaptive behaviors in a negative situation (r = - .55, p<.05). Likewise, the ECBI total problem score was strongly and negatively associated both with overall social competence (r = - .51, p< .05) and adaptive behaviors in a negative situation (r = - .56, p< .05).

With regard to parenting behaviors, physical punishment was negatively and modestly associated with parental warmth (r = -.20, p< .001) and reasoning (r = -.19, p< .001); whereas positively and substantially associated with demand for compliance (r = .38, p< .05). A strong association was found between parental warmth and reasoning (r = .62, p< .05). All parenting behaviors except for demand for compliance were significantly associated with children's overall social competence (r = - .14, p = .12). Specifically, parental warmth (r = .41, p< .05) and reasoning (r = .31, p< .05) were found to be substantially associated with children's overall social competence; whereas physical punishment was negatively and moderately associated with the children's overall social competence (r = -.29, p< .05). Children's adaptive behaviors in a negative situation were significantly associated with all parenting behaviors. The former was negatively associated with demand for compliance (r = -.26, p< .05) and physical punishment (r = -.35, p< .05). On the other hand, children's adaptive behaviors in a negative situation were found to be modestly associated both with parental warmth (r = .23, p< .001) and reasoning (r = .21, p< .001). Finally, there was a strong association between children's overall social competence and adaptive social behaviors in negative situations (r = .73, p< .05).

4.1.3 Comparison of Attrited and Non-Attrited Participants

Pre intervention assessments were collected from 44 intervention and 78 control parents. Of the parents in the intervention group, 59.1% (n = 26) were present at both pre and post intervention assessments. The attrition rate of the parents in the control group was lower and 64.1% (n = 50) of the parents in the control group participated in both pre and post tests. A chi-square test of independence revealed no significant differences in the attrition rates of the intervention and the control groups, χ^2 (1, N = 122) = 0.3, p = .58.

The pre test scores of the attrited and non-attrited parents in the intervention and control groups are provided in Table 4.3. The two-tailed *t*-test comparisons of the pre test scores revealed no significant differences between the attrited and the non-attrited intervention parents in any outcome measure. Likewise, no significant differences were found between the pre test scores of the attrited and non-attrited parents in the control group.

Table 4.3 The comparison of pre test scores by attrition status in the control and intervention groups.

Measures	Control Group		Intervention Group	
	Attriters (N=28)	Non-attriters (N=50)	Attriters (N=18)	Non-attriters (N=26)
ECBI aggression score	31.5 (16.0)	31.9 (17.5)	34.4 (15.7)	37.4 (14.9)
ECBI demand for attention score	43.4 (18.3)	46.3 (15.5)	48.3 (12.2)	53.5 (16.0)
ECBI intensity score	33.7 (15.8)	36.4 (12.2)	38.1 (14.2)	42.4 (15.9)
ECBI total problem score	26.3 (16.9)	27.1 (13.6)	33.0 (17.2)	34.9. (15.8)
ASBI total score	72.1 (11.1)	70.9 (10.2)	66.8 (9.7)	71.6 (9.0)
ASBI adaptive behaviors in negative situations score	70.3 (13.8)	68.6 (11.9)	63.3 (13.5)	67.9 (9.4)
PQ demand for compliance score	50.6 (20.4)	52.7 (18.6)	55.3 (23.4)	54.6 (16.0)
PQ punishment score	26.0 (10.2)	28.0 (14.6)	25.0 (15.0)	23.6 (12.5)
PQ warmth score	85.7 (20.3)	85.6 (18.5)	86.3 (10.0)	89.1 (10.2)
PQ reasoning score	81.9 (15.7)	86.5 (12.7)	81.9 (12.0)	84.6 (10.7)

Note. The values are the means with the standard deviations in parenthesis.

4.2 Intervention Effects

Comparisons of the post intervention assessments of the intervention and the control groups are provided in Table 4.4. ANCOVA analyses indicated no significant intervention effects on the parenting behaviors; whereas significant intervention effects were found on children's negative and prosocial behaviors. Specifically, a large intervention effect was found on the ECBI aggression score, $F(1, 71) = 23.4$, $p = .00$, $\delta = 0.76$. Likewise, there were large intervention effects on the ECBI demand for attention ($F(1, 71) = 8.1$, $p = .01$, $\delta = 0.80$) and total problem scores ($F(1, 70) = 17.5$, $p = .00$, $\delta = 1.07$). There was a larger effect of the intervention on the ECBI intensity score and the children in the intervention group were reported to display behavior problems less frequently than did the children in the control group, ($F(1, 71) = 15.5$, $p = .00$, $\delta = 1.08$). As for the prosocial behaviors, moderate to large intervention effects were detected both on children's overall social competence ($F(1,70) = 7.9$, $p = .01$, $\delta = 0.63$) and adaptive social behaviors in negative situations ($F(1,70) = 8.2$, $p = .01$, $\delta = 0.73$). In summary children in the intervention group showed significant improvements in all behavioral measures as compared to children in the control group (see Figures 4.4 and 4.5).

Figure 4.4 The levels of negative child behaviors after the training program

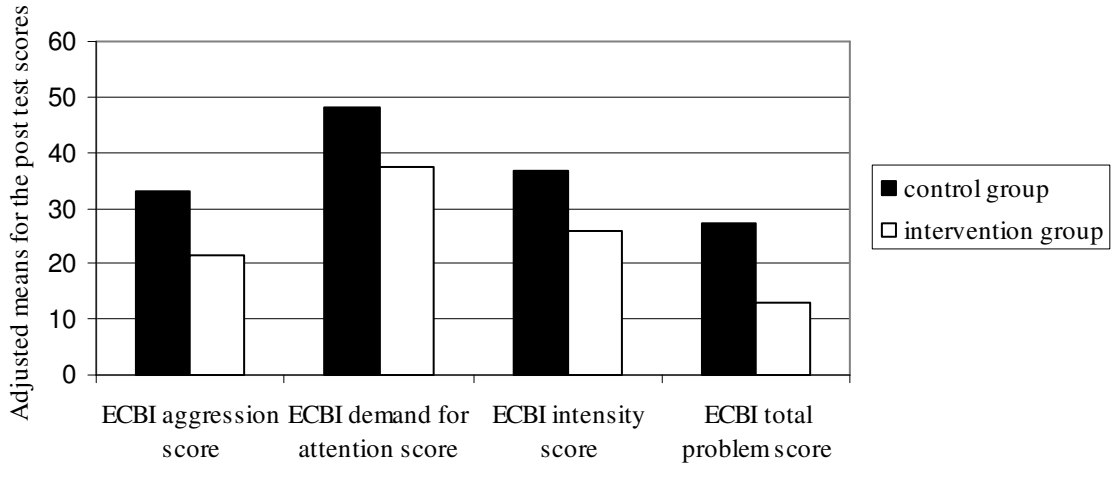
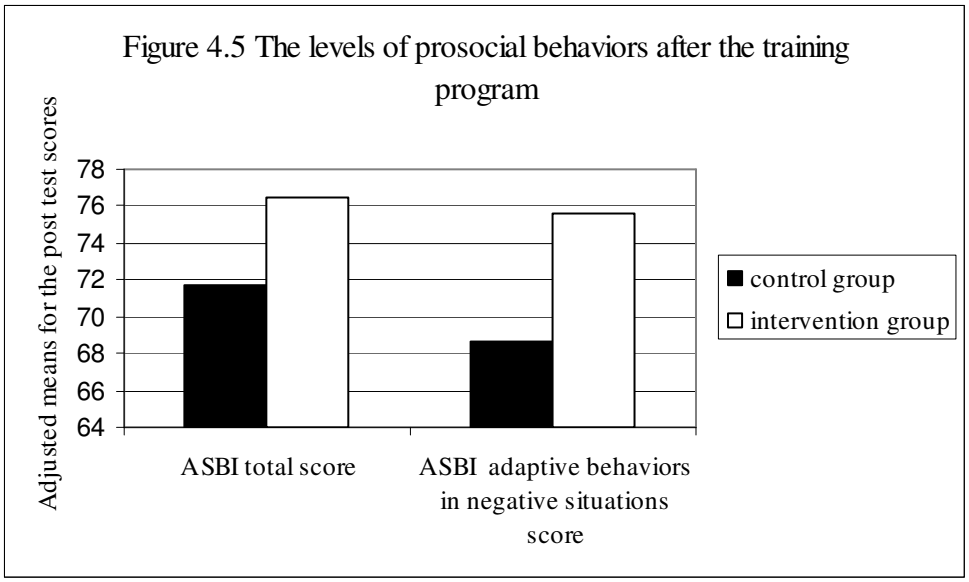


Table 4.4. The comparison of the post-test measures.

Post Intervention Measures	Control group (N = 50)	Intervention Group (N = 26)	*F*	*P*
ECBI aggression score	33.1 (9.5)	21.4 (10.2)	23.4	.00
ECBI demand for attention score	48.1 (14.8)	37.3 (15.9)	8.1	.01
ECBI intensity score	36.5 (10.5)	25.9 (11.3)	15.5	.00
ECBI total problem score	27.3 (13.2)	12.8 (14.3)	17.5	.00
ASBI total score	71.7 (6.7)	76.5 (7.1)	7.9	.01
ASBI adaptive behaviors in negative situations score	68.7 (9.1)	75.6 (9.9)	8.5	.01
PQ demand for compliance score	48.0 (12.7)	50.7 (13.6)	0.7	.40
PQ punishment score	23.5 (9.3)	20.2 (9.8)	2.1	.16
PQ parental warmth score	87.3 (10.3)	91.2 (11.1)	2.2	.15
PQ reasoning score	84.5 (11.1)	83.5 (11.9)	0.1	.72

Note. The post-intervention scores are listed as the adjusted means and the standard deviations in parenthesis after controlling for the pre-test scores, level of parental education and child age.

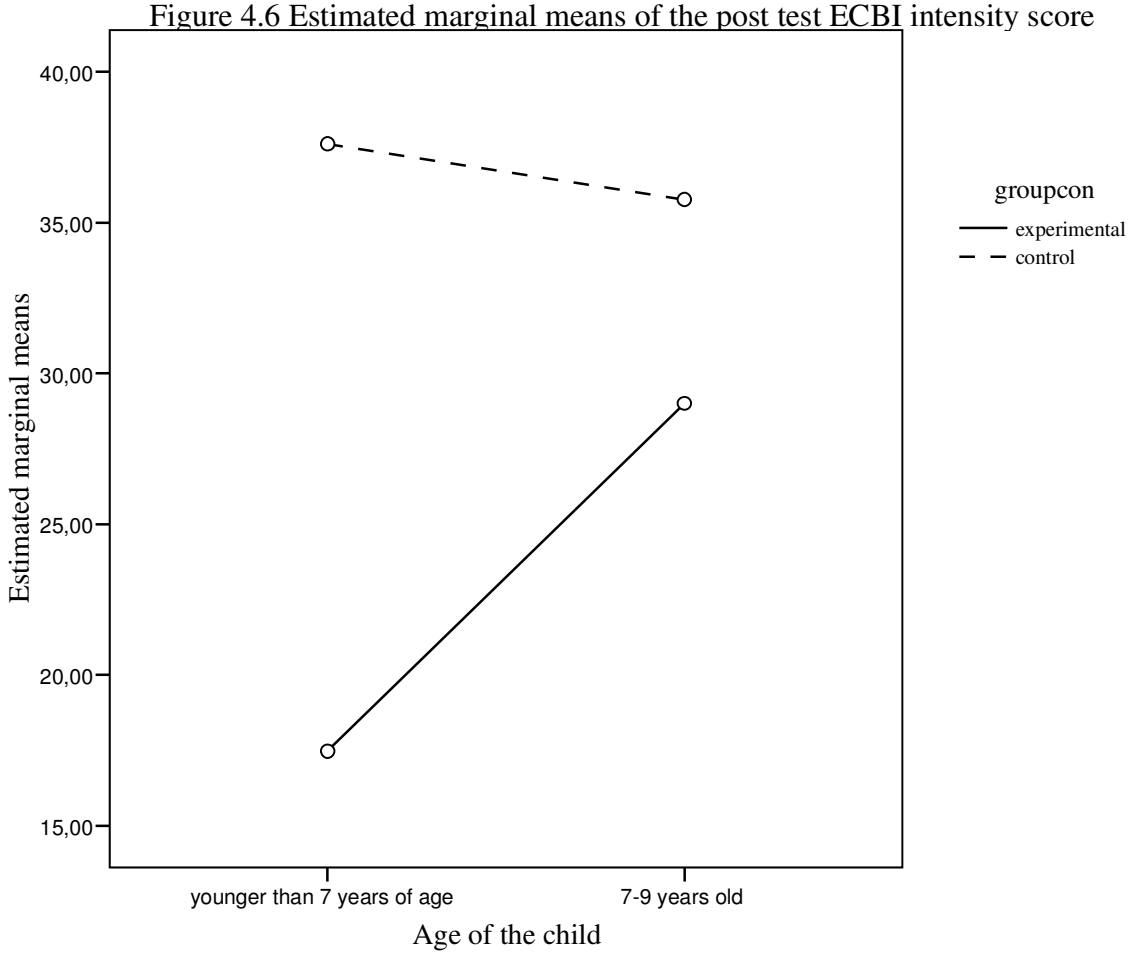


In addition to exploring the effects of the intervention status on outcome measures, the effects of the level of parental education and the child age on post intervention scores were also tested. Analyses of covariance yielded no main effects neither for the level of parental education nor the child age. However, there was a significant interaction between the intervention status and the child age in relation to the ECBI intensity score, $F(1,70) = 5.8$, $p = .02$, indicating that the intervention brought for greater reductions in the intensity of behavior problems for children younger than 7 years of age as compared to older children (see Figure 4.6).

Although no other significant interaction effects were detected, several findings suggested increased effectiveness of the intervention for families with particular characteristics. In particular, the average post intervention ECBI aggression score of the intervention children younger than 7 years of age ($M = 16.8$, $SD = 9.6$) was 0.8 SD below that of the older intervention children ($M = 23.1$, $SD = 9.4$). There were negligible differences between the post intervention PQ punishment scores of the intervention and control parents with high education ($M = 21.5$, $SD = 9.1$, $M = 21.3$, $SD = 8.9$, respectively); whereas the intervention

parents with low education scored 0.9 SD below the control parents with low education on the PQ punishment scale (*M* = 16.8 SD = 9.3, *M* = 25.1, *SD* = 8.8, respectively). Likewise, the average post intervention PQ warmth score of the intervention parents with low education was (*M* = 94.2, *SD* = 11.1) was 0.8 SD above the average punishment score of the control parents with low education (*M* = 87.4, *SD* = 10.4).

Figure 4.6 Estimated marginal means of the post test ECBI intensity score



4.3 The Variability of the Intervention Effects by Program Attendance

Further analyses were conducted in order to identify the differences in intervention outcomes by the level of attendance to the program. With this consideration, the distribution of the total number of sessions attended by the intervention parents was examined. 2 participants (7.7%) did not attend any meetings, 5 (19.2%) attended 3 or less meetings, 1 (3.8%) attended 4-6 meetings, 2 (7.7%) attended 7-9 meetings and 18 (69.2%) attended 10 or more meetings. Accordingly, a cut-off point of 10 sessions was specified in order to differentiate high-attending parents from low attending ones. On average, low-and high-attending parents followed 3.5 (SD = 3.7) and 12.6 (SD = 1.1) sessions, respectively. The investigation of the demographic characteristics of the low- and high-attending yielded no significant group differences with regard to level of parental education (χ^2 (4) = 5.9, p = .21), sex of the child (χ^2 (1) = 1.5, p = .23) and the number of children in the household younger than 12 years of age (t(42) = 0.4, p = .67).

Of the 122 parents who participated in the pre intervention assessment, 63.9% (n = 78) was in the control group, 23.8% (n = 29) was in the low-attending intervention group and 12.3% (n = 15) was in the high-attending intervention group. Post-test data were collected from 76 parents and of these parents, 65.8% (n = 50) were in the control group, 14.5% (n = 11) were in the low-attending intervention group, and 19.7% (n = 15) were in the high attending-intervention group.

In order to understand the pre-existing differences in low- and high-attending participants, high- and low-attending participants were compared (Table 4.5). T-test comparisons indicated no significant group differences between the low- and the high-attending group on any pre intervention measures.

Program attendance was found to have a significant effect on the ECBI post test scores that measured various aspects of children's negative behaviors. Program attendance had a significant effect on children's aggression at post intervention, $F(2,72) = 14.8$, $p = .00$. After controlling for the pre intervention aggression scores, the children in the control group were found to be significantly more aggressive than did the children both in the low- ($p = .00$, $\delta = 0.45$) and the high-attending groups ($p = .00$, $\delta = 0.85$). No significant difference was found between the post-test aggression scores of the children in the low- and high attending groups. Given the small number of participants within these two groups, the statistical power of the latter comparison is low. Nevertheless, average ECBI aggression score of the children in the high-attending group ($M = 19.8$, SD = 9.3) was found to be 0.4 standard deviation below the average ECBI aggression score of the children in the low attending group ($M = 23.2$, $SD = 9.6$, $p = .37$).

Program attendance had a significant effect on children's demand for attention, $F(2,72) = 4.9$, $p = .01$. After controlling for the corresponding pre test scores, children of the high-attending parents were reported to be significantly less demanding for attention than did the children of the control group, $p = .01$, $\delta = 0.89$. Group contrasts revealed no significant differences in ECBI demand for attention scores between neither high-attending vs. low-attending groups nor low-attending vs. control groups. However, on average, children in the high-attending group (M= 36.0, $SD = 14.3$) scored 0.4 standard deviation below the children in the low-attending group ($M = 38.9$, $SD = 14.7$) in ECBI demand for attention scale ($p = .62$). Likewise, the average post-test demand for attention score of the children in the low attending group was found to be 0.33 *SD* below the average score of the children in the control group ($M = 48.0$, $SD = 14.4$).

Table 4.5. The comparison of the pre and post-test intervention by program attendance

Measures	Control group		Low-attending intervention group		High-attending intervention group		*F*	*p*
	Pre-Intervention (N = 78)	Post-Intervention (N = 50)	Pre-Intervention (N = 29)	Post-Intervention (N = 11)	Pre-Intervention (N = 15)	Post-Intervention (N = 15)		
ECBI aggression score	31.8 (16.8)	33.4[a] (9.4)	38.2 (15.9)	23.2[b] (9.6)	32.2 (13.2)	19.8[b] (9.3)	14.8	.00
ECBI demand for attention score	45.3 (16.5)	48.0[a] (14.4)	52.4 (15.0)	38.9 (14.7)	49.3 (14.3)	36.0[b] (14.3)	4.9	.01
ECBI intensity score	35.4 (13.6)	36.6[a] (10.3)	42.1 (16.9)	27.6[b] (10.6)	37.7 (11.5)	25.4[b] (10.2)	8.6	.00
ECBI total problem score	26.8 (14.8)	26.8[a] (15.2)	34.9 (18.1)	20.8 (15.7)	32.5 (12.5)	10.2[b] (15.2)	6.7	.00
ASBI total score	71.3 (10.5)	71.8[a] (6.5)	68.3 (10.7)	75.7 (6.5)	72.1 (5.9)	76.5[b] (6.5)	3.9	.03
ASBI adaptive behavior in a negative situation score	69.2 (12.5)	68.6[a] (9.0)	64.7 (13.0)	73.1 (9.0)	68.7 (6.5)	76.1[b] (9.0)	4.4	.01
PQ demand for compliance score	51.9 (19.2)	47.8 (12.3)	55.9 (21.7)	47.8 (12.3)	53.1 (13.2)	52.6 (12.3)	0.9	.40
PQ punishment score	27.3 (13.2)	23.6 (9.1)	25.7 (14.7)	20.8 (9.0)	21.0 (10.2)	19.3 (9.2)	1.5	.24

Table 4.5. The comparison of the post-test scores by the attendance status (cont'd)

Measures	Control group		Low-attending intervention group		High-attending intervention group			
	Pre-Intervention (N = 78)	Post-Intervention (N = 50)	Pre-Intervention (N = 29)	Post-Intervention (N = 11)	Pre-Intervention (N = 15)	Post-Intervention (N = 15)	*F*	*P*
PQ parental warmth score	85.6 (19.0)	87.5 (10.1)	88.4 (9.6)	90.4 (10.2)	87.04 (11.34)	91.6 (10.1)	1.1	.33
PQ reasoning score	84.8 (13.9)	84.7 (11.0)	83.7 (11.3)	84.7 (11.0)	83.09 (11.49)	84.7 (11.1)	.00	1.00

Note. The post-intervention scores are listed as the adjusted means and the standard deviations in parenthesis after controlling for the pre test scores.

a,b indicate a significant difference of means, based on post-hoc comparisons.

Program attendance also had a significant effect on the ECBI intensity score, $F(2,72) = 8.6$, $p = .00$. Significant differences were found between the post-test ECBI intensity scores of both control and high-attending groups and control and low-attending the groups. On average, the post-test ECBI intensity score of the children in the high-attending group ($M = 25.4$, $SD = 10.2$) was 0.9 standard deviation lower than that of the children in the control group (M= 36.6, $SD = 10.3$, $p = .00$). Likewise, the average post-test ECBI intensity score of the children in the low-attending group ($M = 27.6$, $SD = 10.6$) was 0.5 *SD* below the average post-test ECBI intensity score of the children in the control group ($p = .01$). There was not a significant difference between the post-test ECBI intensity scores of the low- and the high-attending groups. However, on average, the children in the high-attending group scored 0.4 standard deviation below the children in the low-attending group.

The effect of program attendance on the ECBI total problem scores was also significant, $F(2,71) = 13.3$, $p = .00$. Group contrasts pointed at a significant difference only between the control and the high- attending groups. There was a very large difference between the post-test ECBI total problem scores of these two groups and on average, children in the high-attending group ($M = 10.2$, $SD = 15.2$) scored 1.51 *SD* below the children in the control group ($M = 26.8$, $SD = 15.2$, $p = .00$). No significant differences were found between either high- vs. low-attending groups or low-attending vs. the control groups. However, on average, the post-test ECBI total problem score of the children in the low-attending group ($M = 20.8$, $SD = 15.7$) was 0.8 *SD* higher than that of the children in high attending group; whereas 0.5 *SD* lower than that of the children in the control group (both post-hoc tests $p<.10$).

Program attendance had a significant effect on both subscales of the ASBI which assessed children's prosocial behaviors ($F(2,71) = 3.9$, $p = .03$ and $F(2,72) = 4.4$, $p = .01$,

respectively). The group contrasts in children's overall social competence revealed a significant difference of means only between the control and the high-attending groups. On average, children's overall social competence score in the high-attending group (M = 76.5, SD = 6.5) was 0.5 SD higher than that of the children in the control group (M = 71.8, SD = 6.5, p = .02). Similarly, children in the high-attending group had ASBI adaptive behaviors in negative situations scores that were 0.7 SD above (M = 76.1, SD = 9.0) that of the children in the control group (M = 68.6, SD = 9.0).

There were no significant effects of the program attendance on any measure of the parenting behaviors. Furthermore, contrary to our expectation, high-attending parents asked for more compliance from their children than did the parents in the low-attending and the control groups.

Additional analyses were carried out in order to explore the effects of program attendance on the post-test scores after controlling for the level of parental education and child age in addition to the corresponding pre test scores. The comparisons of the adjusted post-test mean scores are provided in Table 4.6.

Analyses of covariance indicated that all significant group differences in post-test outcome measures in relation to children's negative and social behaviors persisted after controlling for the demographic characteristics as well as the corresponding pre test scores. Group contrasts revealed that children in the control group were more aggressive than the children in the high- and the low-attending groups (p = .00). Children in the high-attending group was found to be less demanding for attention as compared to children in the control

Table 4.6. The comparisons of the adjusted post-test mean scores by program attendance.

Post Intervention Measures	Control group (N = 50)	Low-attending intervention group (N = 11)	High-attending intervention group (N = 15)	*F*	*p*
ECBI aggression score	33.3[a] (9.9)	22.1[b] (9.9)	20.5[b] (9.7)	11.8	.00
ECBI demand for attention score	48.0[a] (14.8)	39.1 (15.3)	36.0[b] (14.7)	4.1	.02
ECBI intensity score	36.7[a] (10.6)	27.5[b] (10.9)	25.4[b] (10.5)	7.7	.00
ECBI total problem score	27.6[a] (13.4)	18.8 (13.3)	9.0[b] (13.1)	10.8	.00
ASBI total score	71.7[a] (7.0)	75.9 (7.0)	76.8[b] (6.6)	4.0	.02
ASBI adaptive behaviors in a negative situation score	68.4[a] (9.1)	73.8 (9.6)	76.3[b] (9.3)	4.4	.01
PQ demand for compliance score	47.9 (12.7)	48.0 (12.9)	52.5 (12.8)	0.7	.47
PQ punishment score	23.5 (9.2)	21.0 (9.3)	19.6 (9.7)	1.1	.34
PQ parental warmth score	87.4 (10.6)	90.3 (10.6)	91.9 (10.5)	1.1	.32
PQ reasoning score	85.0 (11.3)	83.5 (11.3)	84.4 (11.2)	0.1	.92

Note. The post-test scores are listed as adjusted means and standard deviations in parenthesis after controlling for the pre test scores, level of parental education and child age.

a,b indicate a significant difference of means, based on post-hoc comparisons.

group (p = .01). Children in the control group displayed behavior problems more frequently than did the children in the high- (p = .00) and the low-attending groups (p = .01). In addition, children of the high-attending parents were reported to have fewer problematic behaviors than did the children in the control group (p = .00).

Attendance status had a significant effect on both children's overall social competence (F(2,69) = 4.0, p = .02) and the adaptive social behaviors in negative situations (F(2,69) = 4.4, p = .01). Children in the control group had lower overall social competence (p = .01) and displayed fewer adaptive behaviors in a negative situation (p = .01) than the children in the high-attending group.

In summary, as compared to the children in the control group, children of the high-attending parents did show significant improvements in all behavioral measures, regardless of age and level of parental education. There were no significant improvements in prosocial behaviors of children of the low-attending parents as compared to children in the control group. On the other hand, regardless of age and level of parental education, children of low-attending parents were reported to display less aggression and behavior problems than did the children in the control group.

4.4. The Variability of the Intervention Effects by Parental Satisfaction

At the end of the training program, parents were asked to evaluate the usefulness of the overall program, ease and usefulness of both the teaching format and newly acquired parenting techniques and the effectiveness of the group leader. Nine summary scores were calculated: (1) total score, (2) satisfaction with the group leader, (3) total ease (i.e. ease of

parenting techniques and teaching format combined), (4) ease of parenting techniques (5) ease of teaching format, (6) value of the overall program, (7) total usefulness (i.e. usefulness of parenting techniques and teaching format combined), (8) usefulness of parenting techniques and (9) usefulness of teaching format. The means of the satisfaction summary scores are provided in the left panel of Table 4.7. The perception of ease of parenting techniques score was lower than the means of the other aspects of program satisfaction. This finding suggested that the participants did not perceive the parenting techniques as easy to understand and apply. Satisfaction with the group leader was high with an extremely low variance, rendering this non-amenable to analysis.

Because of the large number of different satisfaction measures, and the relatively small sample size, it was not feasible to include all of these measures in models. Furthermore, many of these measures were highly correlated (see Table 4.7, right hand side panel). Satisfaction measures that were both substantively different and weakly inter-correlated were sought in order to allow parsimonious modeling. Total score, value of the overall program score and satisfaction with the group leader score were relatively weakly correlated. Because of the lack of variability in the latter satisfaction score the analyses included only two satisfaction measures.

Two sets of analyses addressing satisfaction were conducted. First, in order to investigate the effects of pre-existing characteristics on program satisfaction, correlation analyses were conducted to test if initial levels of child and parenting behaviors were associated with satisfaction. Next, the effects of the parental satisfaction with the program on selected child outcomes were investigated.

Table 4.7. Correlations among the satisfaction summary scores.

	M	*SD*	N	2	3	4	5	6	7	8	9
1. PSQ total score	86.7	4.6	21	0.11	0.86**	0.83**	0.77**	0.30	0.71**	0.67**	0.58**
2. PSQ satisfaction with the group leader	97.8	3.5	21		0.33	0.31	-0.23	0.33	-0.16	-0.31	0.15
3. PSQ total ease score	74.5	12.3	21			0.98**	0.78**	-0.17	0.41	0.45*	0.23
4. PSQ ease of parenting techniques score	71.8	15.6	21				0.66**	0.23	0.40	0.44*	0.22
5. PSQ ease of teaching format score	80.2	8.4	21					0.12	0.41	0.44*	0.27
6. PSQ value of the overall program score	89.5	5.1	21						0.37	0.25	0.49*
7. PSQ total usefulness score	92.6	4.1	21							0.95**	0.83**
8. PSQ usefulness of parenting techniques score	92.6	4.5	21								0.61**
9. PSQ usefulness of teaching format score	92.7	4.5	21								

Note. * $p < .05$, ** $p < .01$

The correlations between pre test measures and the selected satisfaction summary scores are provided in Table 4.8. The total score strongly and negatively associated with the ECBI aggression ($r = -.52$, $p<.05$) and demand for attention ($r = -.57$, $p<.001$) scores; and strongly and positively associated with the ASBI adaptive behaviors in negative situations score ($r = .54$, $p<.05$). On the other hand, no significant associations were found between value of the overall program score and any of the pre intervention measures. Therefore, program satisfaction was associated with adjustment: Parents with well functioning children tended to be more satisfied with the program than the others.

Table 4.8 The correlations between pre intervention measures and the selected measures of satisfaction.

Pre Intervention scores	Total satisfaction score	Value of the overall program
ECBI aggression score	- .52*	.12
ECBI demand for attention score	- .57*	- .05
ECBI intensity score	- .41	- .01
ECBI total problem score	- .31	.09
ASBI total score	.39	.36
ASBI adaptive behaviors in a negative situation score	.54*	.35
PQ demand for compliance score	.33	.11
PQ punishment score	- .24	.09
PQ parental warmth score	.11	- .11
PQ reasoning score	.09	- .09

Note. * $p< .05$, ** $p<.01$

In order to examine the effects of satisfaction on program effectiveness, several outcome measures were regressed on corresponding pre test scores and the selected parental satisfaction measures one at a time. The results of these analyses are provided in Table 4.9. Neither total satisfaction (β = - .10, p = .66) nor value of the overall program scores (β = .21, p = .27) had significant effects on post intervention ECBI aggression score, controlling for the effects of the pre intervention aggression score. Similarly, neither total satisfaction (β = - .30, p = .06) nor value of the overall program (β = .03, p = .87) scores had significant effects on post-test ECBI intensity score. However, total satisfaction (β = .43, p = .02) had a significant effect on post-test ASBI total score, but not the value of the overall program (β = .10, p = .61). Thus, there is weak evidence that the participants' satisfaction with the program influences the program effectiveness such that higher levels of satisfaction results in a non-significant decrease in behavior problems and a significant increase in prosocial behaviors of the children of participating parents.

Table 4.9. Regression analyses for estimating the effects of the selected satisfaction measures on several outcome measures.

Outcomes	Total satisfaction	Value of the overall program
ECBI aggression score	- .20	.38
	(- .10)	(.21)
ECBI intensity score	- .79	.08
	(- .30)	(.03)
ASBI total score	.52*	.11
	(.43)	(.10)

Note. The values are unstandardized coefficients and standardized coefficients in parentheses.
* p< .05.

Chapter 5

DISCUSSION

The main purpose of the present study was to translate the content of an empirically validated preventive intervention targeting externalizing behaviors in early childhood and then to conduct a pilot implementation of the training program in the Turkish context. The pilot implementation was evaluated by using a pre/post experimental/control design. In this way, preliminary data were gathered to investigate the effectiveness of the training program in the Turkish context.

In the light of the previous evaluation studies of the IYP, it was hypothesized that the training would be associated with improvements in child and parent behaviors. Specifically, a marked decline was expected in children's aggressive and problematic behaviors. On the other hand, it was hypothesized that the training would be associated with elevated levels of social competence. As for the parenting behaviors, it was predicted that both power assertive parenting practices and parents' demand for compliance from their children would be significantly reduced after the training. On the other hand, it was hypothesized that the training would significantly enhance parental warmth and use of reasoning with children. Furthermore, the level of attendance to the training program would be related to intervention outcomes such that the effects of the training program would be more pronounced for the children of parents who had a higher attendance rate. Lastly, it was hypothesized that parental satisfaction would be associated with program effectiveness.

5.1 Summary of Findings

The study sample consisted of 122 parents who had children at K-2 grades of the selected intervention and control schools in Istanbul. Of these parents, 36.1% (n = 44) were in the intervention group and 63.9% (n = 78) were in the control group. Although the pilot implementation and evaluation were of small scale, the validity of the design was demonstrated. Regardless of several significant demographic differences in the intervention and the control groups, only two of the ten outcome measures differed between the two groups prior to the intervention. The intervention and the control groups did not differ on any pre-test measures assessing prosocial child behaviors and parenting behaviors. Only two baseline measures of negative child behaviors (demand for attention and total problem scores) differed between the intervention and control groups.

Consistent with previous research (Gershoff, 2002; Mahommney, Dennely, Lewis & Maynard, 2000; Stormshak et al, 2000), prior to the intervention, authoritarian and physically punitive parenting practices were associated with elevated levels of aggression and behavior problems for the study children. Likewise, lack of parental warmth and reasoning were associated with the intensity of behavior problems. The investigation of baseline levels of child and parenting behaviors revealed that demand for attention and demand for compliance was high in this sample. According to the coercion theory (Patterson, 1982), parents and children display negative behaviors with the intent of gaining control over each other's behaviors. Over time, both parties escalate their own negative behaviors in order to repress the unwanted behaviors of the other. Participating children might have escalated acting out behaviors in response to negative parenting practices. It is also possible that children's difficult behaviors might have resulted in high levels of negative parenting practices. Whatever the reason was, it seemed necessary to break that negative cycle and change the

ways in which children and parents responded to each other. However, as assumed by the premises of the IYP, it was not realistic to expect children to initiate the required change in interaction patterns. For that reason, it might be suggested that the study parents needed help to initiate more positive interactions with their children in order to reduce their children's negative behaviors.

Attrition is an important problem threatening the validity of interventions because of its potential to change the composition of the control and intervention groups. The attrition rate in this study sample was high: 40.9% and 35.9% for the intervention and control groups, respectively. The comparisons of the pre-existing characteristics of the attrited and non-attrited families both in the intervention and the control groups did not yield any significant differences in the baseline levels of child and parenting behaviors. However, despite non-significant, the differences between the non-attritied and attrited intervention groups on prosocial behaviors suggested that parents of children with particularly low levels of prosocial behaviors tended to attrit. It is possible that these families were experiencing some stress prior to the study.

The intervention program was found to be effective on all of the child outcomes investigated in the pilot evaluation. The effect sizes were large for children's negative behaviors and moderate to large for children's prosocial behaviors. The effects of the intervention on negative behaviors of children were larger than the replication studies conducted in Norway (Larsson et al., 2008) and the UK (Gardner et al., 2006).

The current pilot implementation indicated no significant intervention effects on parenting behaviors. The reason why the present study failed to find significant improvements in parenting behavior might be twofold. The training might have actually helped parents employ more effective practices to reduce their children's negative behaviors, but the parents might not been able to detect these changes in self-reported parenting practices because they could be holding deep-seated opinions about their own behaviors. Indeed, Reid, Webster-Stratton and Baydar (2004) found that observational measures were more sensitive for detecting intervention effects than parent self-report measures. In other words, some intervention effects might be undetected in the absence of direct observations. Second, the examination of the baseline levels of parenting behaviors pointed to already high levels of warmth and reasoning and low levels of physical punishment for the study sample. For the sake of social desirability, respondents might have reported use of more ideal practices rather than actual ones prior to the training and this situation might have masked the improvements in parenting behaviors between pre and post intervention assessments.

The examination of the intervention effects provided support for the higher effectiveness of the program when the behavior problems were addressed at relatively younger ages than older ages. There were no indications of differential intervention effects for children at different ages when non-violent acting-out behaviors (e.g., whining, dawdling, distractibility) were involved. However, the findings suggested that the aggressive or destructive behaviors might have been well established at the age of seven and harder to change from then on. The study also provided promising results for the greater benefits of the program for parents with low levels of education. Despite the non-significant interactions between the level of parental education and the intervention status, the differences between the scores of the intervention and control parents with low levels of education were always larger than the differences

between the intervention and control parents with high levels of education. However, these findings need to be tested with larger samples in the future in order to validate the variability in the intervention effectiveness in the Turkish context.

The level of attendance to the program was expected to result in the variability in program effectiveness in a dose-response fashion. Along with our expectation, children of the high-attending parents outperformed the children in the control group on all measures. Children of the low-attending parents displayed significantly less aggression and behavior problems than the children in the control group after initial differences between the groups were accounted for. The previous finding was particularly promising given the fact that on average, low-attending parents participated only in 3.5 sessions. Thus, receiving even a relatively low dose of the intervention resulted in substantial reductions in aggression and intensity of behavior problems. Although, no significant differences were found between the high- and low-attending families on any child outcome measures, the differences between the groups indicated a dose-response in effectiveness. The lack of statistical significance was probably due to the lack of power due to the small group sizes.

There were no significant effects of program attendance on any parenting outcome considered here. Furthermore, the intervention program appeared to increase the parents' demand for compliance, contrary to our expectation. The IYP teaches the parents to issue fewer commands and to establish a few clearly communicated rules, yet to expect total compliance with these commands and rules. Therefore, high attending parents might have asked for compliance more firmly from their children than did the parents in the low-attending and control groups while diminishing the range of behaviors that they attempted to control. The measure of compliance used in this study unfortunately did not elicit

information about the frequency of demands for compliance, but rather just the strength of the demand for compliance.

The investigation of the relation between pre test scores and overall program satisfaction indicated that parents of children with more negative behaviors and less prosocial behaviors were satisfied with the IYP less than other parents. In other words, parents with more problematic children were less satisfied with the training program than the parents with well-adjusted children. This finding suggests that the material that was presented to the parents could have been difficult to apply for the parents who had established patterns of maladaptive interactions with their children. The implication of this finding for the IYP is discussed in section 5.4.

The examination of the relation between program satisfaction and intervention outcomes provided weak evidence for the pronounced effects of the training program for the participants with higher program satisfaction. Parents who were more satisfied with the program achieved a greater increase in their children's prosocial behaviors; whereas a comparable difference in children's negative behaviors was not evident.

The main findings of the present study are summarized as follows: (1) the training was associated with improvements in child behaviors; whereas no significant improvements were detected in any self-reported parenting behaviors; (2) the training yielded more positive outcomes for younger children and parents with low levels of education; (3) the level of attendance to program was significantly associated with program effectiveness on child outcomes; (3) the parents of children with milder behavior problems and more adaptive social behaviors were more satisfied with the training program; and, (4) the parents who were

more satisfied with the program enjoyed greater benefits in terms of increase in their children's prosocial behaviors.

5. 2 Contributions

Despite the negative outcomes associated with externalizing behaviors in the short and the long term, the large scale implementations of empirically validated behavioral intervention programs are lacking in Turkey. Behavior problems are mostly addressed at private counseling centers and families without adequate financial resources cannot generally afford the services provided at those centers. This is particularly unfortunate, since poverty is related to a reduced capacity for supportive and involved parenting (McLoyd, 1990; Patterson & Dishion, 1988).

The major contribution of the present study was to translate and adapt the content of an empirically validated parent training program targeting externalizing behaviors in early childhood and then to conduct a pilot implementation of the training program. In this way, the preliminary data were gathered on the effectiveness of the intervention program in the Turkish context. Moreover, the pilot study laid the groundwork for a conclusive evaluation of the training program in the future. Following the conclusive evaluation study, the training program will be ready for use of professionals working with the parents of kindergarten and early school age children.

5.3 Limitations

Despite important contributions, the present study had a number of limitations. First, the present study relied solely on parent report measures as the source of information for evaluating the effectiveness of parent training program. As discussed earlier, some intervention effects might be difficult to detect in the absence of direct observational measures. In addition, since the parents were the sole informants, no information was available whether the reported improvements in child behavior at home were generalized to school. Second, the limited sample size, hence the limited statistical power, impeded analyses of variability of program effectiveness. Information on variability of program effectiveness is especially valuable for universal prevention programs such as the IYP studied here. Third, the present study mostly included mothers who were homemakers. As it was not possible to offer child care for the families, the meetings were scheduled during the times when children were at school. This situation prevented mothers with younger children, working mothers and most fathers from attending to the training. The latter is of special concern because participation in the program with the spouse may increase consistency in parenting practices at home, contribute to increased program effectiveness. Fourth, due to time constraints, an implementation choice was made to arrange the group meetings twice a week. This situation might lead to an information overload for the participants and allow less time to practice the newly acquired skills between the consecutive sessions. Fifth, despite the attempts to arrange the meetings according to the availability of participants, attrition and the non-attendance rates were high in the present study.

5.4 Future Studies

The present study was the first step towards establishing a parent training program for use with Turkish parents of young children. The content of an empirically validated parent training program was translated into Turkish and preliminary information on the effectiveness of the training program in the Turkish context was presented. The present study suggests ways to improve the implementation and the evaluation of the IYP in Turkey.

In the present implementation of the IYP parent meetings were held twice a week. This situation might have resulted in presentation of the learning materials at a relatively fast rate, and might have undermined the practice and mastery of more effective parenting skills. Therefore, weekly delivery of the training program in the future may enhance the effectiveness the program. This might be particularly helpful for parents of children with more difficult behaviors. It might be expected that the interactions between these parents and their children are more maladaptive, requiring much effort and time on part of the parents to break this negative cycle. The weekly sessions would allow more time to these parents to exercise the required skills to respond more effectively to their children's specific behaviors.

As it was stated before, the participants in the present study had the option of attending to one of the two morning sessions. This situation prevented working parents' attendance to the training program. The future implementations of the IYP may need to provide alternative hours for the meetings. If there are sufficient financial resources to provide child care, scheduling the parent meetings in the evenings or at weekends may be an effective way of ensuring the participation of the working parent to the training program.

The present implementation of the IYP indicated a high attrition rate, yet no differential attrition patterns for the intervention and control groups. The future implementation studies should give priority to identify the factors leading to attrition. In this way, the barriers that prevent Turkish parents from attending to training programs may be identified and eliminated.

Findings of the present study provided support for the effectiveness of the training program in improving behavior problems of children. The most immediate future study would be a conclusive evaluation of this training program. Specifically, a replication study should be conducted with an adequately large sample in order to detect small or moderate effects of the program on child and parenting behaviors, as well as to allow a detailed study of the variability in program effectiveness. Future studies should employ multi-method approach to measure child and parenting behaviors. In this way, intervention effectiveness can be validated and the generalizability of findings outside the home context can be addressed.

A comprehensive evaluation of the IYP should include a follow-up study. Previous evaluation studies of the IYP showed that the positive outcomes of the program have been maintained over a period ranging from 1-to-3 years (Baydar & Webster-Stratton, 2008; Gardner et al., 2006, Webster-Stratton, Kolpacoff & Hollinsworth, 1988; Webster-Stratton, 1990; Webster-Stratton & Hammond, 1998; Reid, Webster-Stratton & Hammond, 2003). By conducting a follow-up, it would be possible to determine if the IYP also resulted in sustained beneficial changes in the parent-child ecology in the Turkish context. In addition, follow-up studies may provide information on whether there are any delayed effects of the training program on parenting behaviors.

A parent training program that cultivates positive parenting practices is considered to be the key to reduce children's negative behaviors because of the well-documented link between maladaptive parenting practices and child behavior problems. However, school age children spend considerable time outside of their home. Children's interactions at school also play an important role in the acquisition and maintenance of behavioral problems. Harsh and ineffective strategies employed by the teachers may be associated with the development and/or escalation of behavior problems. Parents participating in the present training program frequently complained about the use of harsh discipline strategies by the teachers. During the group discussions several parents remarked that the teachers were the ones who were in need of such training more than themselves. Therefore, improving the ways in which teachers respond to particular child behaviors might be another effective way of improving children's behaviors. Despite the lack of evidence of added benefits of teacher training in the U.S. studies (Rafe, 2006; Webster-Stratton & Reid, 2003), this approach may need to be tested in the Turkish context. For this purpose, empirically validated teacher training programs such as the Incredible Years Teacher Training Programs may be translated and adapted.

REFERENCES

Arnold, D. H. (1997). Co-occurrence of externalizing behavior problems and emergent academic difficulties in young high-risk boys: A preliminary evaluation of patterns and mechanisms. *Journal of Applied Developmental Psychology, 18,* 317-330.

Barlow, J., Parsons, J. & Stewart-Brown, S. (2005). Preventing emotional and behavioural problems: The effectiveness of parenting programmes with children less than 3 years of age. *Child: Care, Health and Development, 31,* 33-42.

Baydar, N., Reid, M.J. & Webster-Stratton, C. (2003). The role of mental health factors and program engagement in the effectiveness of a preventive parenting program for Head Start mothers. *Child Development, 74(5),* 1433-1453.

Blair, C. (2001). The early identification of risk for grade retention among African American children at risk for school difficulty. *Applied Developmental Science, 5,* 37-50.

Boratav, A. B. (2003). The role of child temperament, sociocognitive abilities, parenting and social context in the development of prosocial behavior. Unpublished doctoral dissertation, University of Melbourne, Victoria, Australia.

Bornstein, M. H. & Suess, P. E. (2000). Child and mother cardiac vagal tone: Continuity, stability, and concordance across the first 5 years. *Developmental Psychology, 36,* 54-65.

Brestan, E. V. & Eyeberg, S. M. (1998). Effective psychosocial treatment programs for conduct-disordered children and adolescents: 29 years, 82 studies, 5287 kids. *Journal of Clinical Child Psychology, 27,* 180-189.

Boggs, S. R., Eyberg, S. & Reynolds, L. A. (1990). Concurrent validity of the Eyberg Child Behavior Inventory. *Journal of Clinical Child Psychology, 19,* 75-78.

Bohon, C., Garber, J. & Horowitz, J.L. (2007). Predicting school drop-out and adolescent sexual behavior in offspring of depressed and non-depressed mothers. *Journal of American Academy of Child and Adolescent Psychiatry, 46(1),* 15-24.

Burns, G. L. & Patterson, D. R. (1990). Conduct problems in a stratified random sample of children and adolescents: New standardization data on the Eyberg Child Behavior Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psycholgy, 2,* 391-397.

Campbell, S. B. (1995). Behavior problems in preschool children: A review of recent research. *Journal of Child Psychology and Psychiatry, 36,* 113–149.

Campbell, S. B., Shaw, D. S. & Gilliom, M. (2000). Early externalizing behavior problems: Toddlers and preschoolers at risk for later maladjustment. *Development and Psychopathology, 12,* 467-488.

Cauce, A. M., Domenech-Rodriguez, M., Paradise, M., Shea, M., Cochran, B. N., Srebnik, D., & Baydar, N. (2002). Cultural and contextual influences in mental health help seeking: A focus on ethnic minority youth. *Journal of Consulting and Clinical Psychology, 70*, 44-55.

Deater-Deckard, K., Dodge, K. A., Bates, J. E. & Pettit, G. S. (1996). Physical discipline among African American and European American mothers: Links to children's externalizing behaviors. *Developmental Psychology, 32,* 1065, 1072.

Dodge, K. A & Pettit, G. S. (2003). A biopsychosocial model of the development of chronic conduct problems in adolescence. *Developmental Psychology, 39,* 349–371.

Erhardt, D. & Hinshaw, S. P. (1994). Initial sociometric impressions of attention-deficit hyperactivity disorder and comparison boys: Predictions from social behaviors and from nonbehavioral variables. *Journal of Consulting and Clinical Child Psychology, 62,* 833-842.

Eyberg, S. & Robinson, E. A. (1983). Conduct problem behavior: Standardization of a behavioral scale with adolescents. *Journal of Clinical Child Psychology, 12,* 347-354.

Feinfield, K. A. & Baker, B. L. (2004). Empirical support for a treatment program for families of young children with externalizing problems. *Joumal of Clinical Child and Adolescent Psychology, 33,* 182-195.

Gardner, F., Burton, J. & Klimes, I. (2006). Randomized controlled trial of a parenting intervention in the voluntary sector for reducing conduct problems in children: Outcomes and mechanisms of change. *Journal of Child Psychology and Psychiatry, 47,* 1123-1132.

Gershoff, E. T. (2002). Parental corporal punishment and associated child behaviors and experiences: A meta-analytic and theoretical review. *Psychological Bulletin, 128,* 539–579.

Greenberg, M. T., Lengua, L. J., Coie, J. D., Pinderhughes, E. E. (1999). Predicting developmental outcomes at school entry using a multiple-risk model: Four American communities. *Developmental Psychology, 35,* 403-417.

Hart, C. H., Ladd, G. W. & Burleson, B. R. (1990). Children's expectations of outcomes of social strategies: Relations with sociometric status and maternal disciplinary styles. *Child Development, 61,* 127-137.

Hinshaw, S.P. (1992). Externalizing behavior problems and academic underachievement in childhood and adolescence: Casual relationships underlying mechanisms. Psychological Bulletin, 111, 127–155.

Heller, T. L., Baker, B. L, Henker, B. & Hinshaw, S. P. (1996). Externalizing behavior and cognitive functioning from preschool to first grade: Stability and predictors. *Journal of Clinical Child Psychology, 25,* 376-387.

Hofstra, M. B., van der Ende, J. & Verhulst, F. C. (2000). Continuity and change of psychopathology from childhood into adulthood: A 14-year follow-up study. *Journal of American Academy of Child and Adolescent Psychiatry 39*, 850–858.

Javo, C., Rønning, J. A., Heyerdahl, S., Rudmin, F. W. (2004). Parenting correlates of child behavior problems in a multiethnic community sample of preschool children in northern Norway. *European Child & Adolescent Psychiatry, 13,* 8-18.

Jenson, W. R., Olympia, D, Farley, M. & Clark, E. (2004). Positive psychology and externalizing students in a sea of negativity (2004). *Psychology in the Schools*, *41,* 67-79.

Kağıtçibası, C. (1996). *Family and human development across cultures: A view from the other side.* Mahwah, NJ: Erlbaum.

Kalb, L. M. & Loeber, R. (2003). Child disobedience and noncompliance: A review. *Pediatrics, 111,* 641-652.

Kazdin, A. E. & Benjet, C. (2003). Spanking children: Evidence and issues. *Clinical Child and Family Psychology Review, 12,* 99–103.

Kuczynski, L., Kochanska, G., Radke-Yarrow, M. & Girnius-Brown, O. (1987). A developmental interpretation of young children's noncompliance. *Developmental Psychology, 23,* 799-806.

Laird, R. D., Jordan, K. Y., Dodge, K. A., Pettit, G. S. & Bates, J. E. (2001). Peer rejection in childhood, involvement with antisocial peers in early adolescence, and the development of externalizing behavior problems. *Development and Psychopathology, 13,* 337-354.

Lansford, J. E., Deater-Deckard, K., Dodge, K. A., Bates, J. E. & and Pettit, G. S. (2004). Ethnic differences in the link between physical discipline and later adolescent externalizing behaviour. *Journal of Child Psychology and Psychiatry*, 45, 801–812.

Larsson, B., Fossum, S., Clifford, G., Drugli, M. B., Handegard, B. H. & Mørch, W. T. (2008). Treatment of oppositional defiant and conduct problems in young Norwegian children: Results of a randomized controlled trial. *European Child and Adolescent Psychiatry, 17(4).*

Lee, S. S. & Hinshaw, S. P. (2004).Severity of adolescent delinquency among boys with and without attention deficit hyperactivity disorder: Predictions from early antisocial behavior and peer status. *Journal of Clinical Child and Adolescent Psychology, 33,* 705-716.

Lewinsohn, P. M., Gotlib, I. H. & Seeley, J. R. (1995). Adolescent psychopathology: Specificity of psychosocial risk factors for depression and substance abuse in older adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 1221-1229.

Lynch, S. K., Turkheimer, E., D'Onofrio, B. M., Mendle, J., Emery, R. E, Slutske, W. S. & Martin, N. G. (2006). A genetically informed study of the association between harsh punishment and offspring behavioral problems. *Journal of Family Psychology, 20,* 90-98.

Mahoney, A., Donnelly, W. O., Lewis, T. & Mynard, C. (2000). Mother and father self-reports of corporal punishment and severe physical aggression toward clinic-referred youth. *Journal of Clinical Child Psychology, 29,* 266-281.

McLoyd, V. C. (1990). The impact of economic hardship on black families and children. Psychological distress, parenting and socioemotional development. *Child Development, 61,* 311-346.

Morris, S.B. & DeShon, R.P. (2002). Combining effect size estimates in meta-analysis with repeated measures and independent-groups designs. *Psychological Methods, 7*, 105–125.

Newcomb, A. F., Bukowski, W. M. & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113,* 99-128.

Olympia, D., Farley, M., Christiansen, E., Pettersson, H., Jenson, W. & Clark, E. (2004). Social maladjustment and students with behavioral and emotional disorders: Revisiting basic assumptions and assessment issues. *Psychology in the Schools, 41,* 835-847.

Patterson, G. R. (1982). *Coercive family process.* Eugene, OR: Castalia.

Patterson, G. R. & Dishion, T. J. (1988). Multilevel family process models: Traits, interactions and relationships. In R. A. Hinde & J. Hinde (Eds.), *Relationships within families* (pp. 283-310). Oxford, England: Clarendon.

Pettit, G. S. & Dodge, K. A. (1993). Family interaction patterns and children's conduct problems at home and school: A longitudinal perspective. *School Psychology Review, 22*, 403-420.

Rafe, E. (2006*). A Meta-analysis of the interventions targeting preschool children with externalizing behaviors and an intervention program for Turkish preschool children.* Unpublished M. A. thesis. Koc University, Istanbul, Turkey.

Reid, M. J., Webster-Stratton, C. & Baydar, N. (2004). Halting the development of conduct problems in Head Start children: The effects of parent training. *Journal of Clinical Child and Adolescent Psychology, 33(2),* 279-291.

Reid, M. J., Webster-Stratton, C. & Hammond, M. (2003). Follow-up of children who received the Incredible Years intervention for oppositional defiant disorder: Maintenance and prediction of 2-year outcome**.** *Behavior Therapy, 34,* 471-491.

Robinson, E. A. & Eyberg, S. M. (1981). The dyadic parent-child interactive coding system: Standardization and validation. *Journal of Consulting and Clinical Child Psychology, 49,* 245-250.

Rothbaum, F. & Weisz, J. R. (1994). Parental caregiving and child externalizing behavior in nonclinical samples: A meta-analysis. *Psychological Bulletin, 116,* 55-74.

Rubin, K. H., Burgess, K. B., Dwyer, K. M. & Hastings, P. D. (2003). Predicting preschoolers' externalizing behaviors from toddler temperament, conflict, and maternal negativity. *Developmental Psychology, 39,*164–176.

Rudy, D. & and Grusec, J. E. (2006). Authoritarian parenting in individualist and collectivist groups: Associations with maternal emotion and cognition and children's self-esteem. *Journal of Family Psychology, 20,* 68-78.

Sanson, A. (1994). Parenting questionnaire for 3-7 year olds. Unpublished Manuscrript. Melbourne: University of Melbourne.

Shields, A. & Cicchetti, D. (2001). Parental maltreatment and emotion dysregulation as risk factors for bullying and victimization in middle childhood. *Journal of Clinical Child Psychology, 30,* 349-363.

Smith, C. L., Calkins, S. D., Keane, S. P., Anastopoulos, A. D. & Shelton, T. L. (2004). Predicting stability and change in toddler behavior problems: Contributions of maternal behavior and child gender. *Developmental Psychology, 40,* 29-42.

Stormshak, E. A., Bierman, K. L., McMahon, R. J., Lengua, L. J. & Conduct Problems Prevention Research Group. (2001). Parenting practices and child disruptive behavior problems in early elementary school. *Journal of Clinical Child Psychology, 29,* 17-29.

Task Force on Promotion and Dissemination of Psychological Procedures (1995). Trainin in and dissemination of empirically validated psychological treatments: Report and recommendations. *The Clinic Psychologist, 48,* 3-23.

The Incredible Years Program: Awards. Retrieved January 25, 2006, from http://www.incredibleyears.com/

van Lier, P. A. C., Vitaro, F., Wanner, B., Wuijk, P. & Crijnen, A. A. M. (2005). Gender differences in developmental links among antisocial behavior, friends' antisocial behavior, and peer rejection in childhood: results from two cultures. *Child Development, 76,* 841-855.

Vaughn, S., Hogan, A, Lancelotta, G., Shapiro, S. & Walker, J. (1992). Subgroups of children with severe and mild behavior problems: Social competence and reading achievement. *Journal of Clinical Child Psychology,21,* 98-106.

Verhulst, F., and van der Ende, J. (1995). The eight-year stability of problem behavior in an epidemiologic sample. *Pediatric Research, 38*, 612–617.

Waas, G. A. & Graczyk, P. A. (1999). Child behaviors leading to peer rejection: A view from the peer group. *Child Study Journal, 29,*291-306.

Webster-Stratton, C. (1985). Dyadic parent-child interactive coding system-revised (DPICS-R); Manual. Unpublished manual. University of Washington.

Webster-Stratton, C. (1990). Long-term follow-up of families with young conduct-problem children: From preschool to grade school. *Journal of Clinical Child Psychology, 19,* 144-149.

Webster-Stratton, C. (1993). Strategies for helping early school-aged children with oppositional defiant and conduct disorders: The importance of home-school partnerships. *School Psychology Review, 22,* 437- 457.

Webster-Stratton, C. & Hammond, M. (1998). Treating children with early-onset conduct problems: A comparison of child and parent training interventions. *Journal of Consulting and Clinical Psychology, 65,* 93-109.

Webster-Stratton, C., Reid, J. M. (2003). The incredible years parents, teachers and children training series: A multi-faceted treatment approach for young children with conduct problems. In: A. E. Kazdin & J. R. Weisz (Eds.), *Evidence-based Psychotherapies for Children and Adolescents.* (pp. 224-240). New York: The Guilford Press.

Webster-Stratton, C., Kolpacoff, M. & Hollinsworth, T. (1988). Self-administered videotape therapy for families with conduct-problem children: Comparison with two cost-effective treatments and a control group. *Journal of Consulting and Clinical Psychology, 56,* 558-566.

Webster-Stratton, C. & Taylor, T. (2001). Nipping early risk factors in the bud: Preventing substance abuse, delinquency, and violence in adolescence through interventions targeted at young children (0–8 years). *Prevention Science, 2,* 165-192.

Wood, J. J., Cowan, P. A. & Baker, B. L. (2002). Behavior problems and peer rejection in preschool boys and girls. *The Journal of Genetic Psychology, 163,* 72-88.