USING PARENT-CHILD INTERACTION THERAPY TO DEVELOP A

PRE-PARENT EDUCATION MODULE

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USING PARENT-CHILD INTERACTION THERAPY TO DEVELOP A

PRE-PARENT EDUCATION MODULE

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USING PARENT-CHILD INTERACTION THERAPY TO DEVELOP A

PRE-PARENT EDUCATION MODULE

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Ember Lynn Lee is the daughter of Reginald C. Lee and Lynn Anita Lee of Northridge, California. Born on July 16, 1979 in Panorama City, California, Ember completed her B.A. at the University of California, Berkeley. She entered the clinical psychology doctoral program at Auburn University in 2003, where she received her M.S. in Clinical Psychology in 2006.

DISSERTATION ABSTRACT

USING PARENT-CHILD INTERACTION THERAPY TO DEVELOP A

PRE-PARENT EDUCATION MODULE

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Ineffective parenting skills, poor knowledge of child development, rigidity, and harsh physical punishment have been identified as risk factors for abuse and child disruptive behavior. Due to the long-term negative consequences of child maltreatment and behavior disorders on child functioning prevention is needed. Primary prevention program developers posit that pre-parenthood is an ideal time for training to prevent child maltreatment. Child and family-focused researchers suggest that by increasing effective parenting the likelihood of childhood disruptive behavior disorders and child maltreatment can be reduced; however no published studies have investigated the use of a pre-parent training intervention to increase parenting knowledge and use of effective parenting behaviors in undergraduate non-parents. The current study examined the

influence that exposure to a pre-parent education module based on PCIT principles has on students' knowledge and use of effective behavioral parenting skills as measured by scores on a PCIT content quiz developed by the researcher and the Dyadic Parent-Child Interaction Coding System – 3rd edition with a sample of 300 undergraduate non-parents aged 19 to 25. A subsample of students participated in an analog DPICS CDI observation that required them to play with an undergraduate research assistant role-playing a three-year-old child. Participants were instructed to follow the "child's" lead and play the role of parent during the observation. The hypothesis that exposure to the pre-parent education module would result in significant increase in scores on PCIT content quiz was supported. The hypothesis that exposure to the pre-parent education module would result in significant increase in the frequency of praise, reflection and behavior description during the role play observation was partially supported. The hypothesis that exposure to developmental psychology course material would result in significant increase in knowledge of child development was partially supported. Implications of the current study and future directions are discussed.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

In 2007, there were 794,000 victims of child maltreatment in the United States with an estimated 1,760 of those victims dying (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2007). The state of Alabama, in 2007, had over 30,000 reports of child maltreatment with 20% of the reports being substantiated; however only 16% of reports made were investigated (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2007). Social workers and other experts in the field of child maltreatment estimate that upwards of two-thirds of acts of child maltreatment go unreported (Dhooper, Royse, & Wolfe, 1991; Vieth, 2006). Of those acts that are reported, many go unsubstantiated due to lack of evidence. The prevalence of child maltreatment has detrimental effects on current as well as future functioning of its victims (Azar & Bober, 1999).

In addition to the high prevalence of child maltreatment in the United States, disruptive behavior disorders are estimated to occur in 2 to16% of children in the general population (American Psychiatric Association (APA), 2000) and in 50-61% of children in foster care (Clausen, Landsverk, Ganger, Chadwick, & Litrownik, 1998). Early childhood (birth to age 4 years) has been identified as a critical period in the development of conduct problems in children, leaving them highly vulnerable to poor parenting (Loeber, 1990). Children who exhibit disruptive behavior at age 3 will likely display similar difficulties at age 6 if no intervention is implemented (Campbell & Ewing, 1990;

1

Egeland, Kalkoske, Gottesman, & Erickson, 1990; Richman, Stevenson, & Graham, 1982). Additionally, the early development of disruptive behavior in conjunction with negative parent-child interactions and ineffective parental discipline are potent predictors of later delinquency and criminality (Loeber & Dishion, 1983; White, Moffitt, Earls, Robins, & Silva, 1990).

The cost to society of the effects of child maltreatment and poor parenting are substantial (e.g., Cohn-Donnelly, 1992; Fromm, 2001; Geerart, Van den Noortgate, Grietens, & Onghen, 2004; Kazdin, 1987; Patterson, DaBaryshe, & Ramsey, 1989; Wekerle & Wolfe, 1996). National costs of child maltreatment have been estimated at $94 billion annually in both direct and indirect costs related to child needs and long-term effects (Fromm, 2001). Additionally, the cost of treating children with disruptive behavior disorders, such as conduct disorder, through the use of public services was 10 times greater than the cost to treat children with no disruptive behavior disorders (e.g., Scott, Knapp, Henderson, & Maughan, 2001; Waldman, Rowe, Abramowitz, Kozel, Mohr, Sherman et al., 1998). Given the high prevalence of child abuse and behavior problems, as well as the high cost to society, more attention should be paid to prevention efforts. One of the first steps to prevention is identifying risk factors for child abuse and behavior problems.

Risk Factors for Child Maltreatment and Child Disruptive Behavior Problems

Many parenting factors have been identified as high risk factors for child abuse and child disruptive behavior including knowledge of child development (Rivara & Howard, 1982; Stevens, 1984) and ineffective parenting skills (Medora, Wilson, &

2

Larson, 2001). Parents with limited knowledge of child development tend to have unrealistic expectations of children's behavior and cognitive abilities (Azar, Robinson, Hekimian, & Twentyman, 1984). Parenting skills have been identified as a risk factor for child abuse because it appears that parents who have limited options for discipline tend to use harsh physical discipline more often than positive discipline techniques. Specifically, parents who have a higher abuse potential tend to be more rigid and controlling and believe in spanking (Kelley, Power, & Wimbush, 1992; Medora et al., 2001; Milner & Wimberly, 1979, 1980).

Harsh parental discipline is not only a risk factor for child abuse, but a risk factor for child behavior problems. Several studies have investigated the impact that particular discipline practices have on children's behavior. For example, punitive and inconsistent parenting practices have been linked with oppositional and aggressive behavior in children (e.g., Danforth, Barkley, Stokes, 1991; Hart, Ladd, & Burleson, 1990; Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987; Wahler & Dumas, 1986).

To a large extent, the research on parenting includes women and mothers. However, evidence suggests that men are influenced by the parenting they received as children, which in turn can influence the parenting of their children (Stein, 2003). Smith and Farrington (2004), for example, found that fathers who were poorly supervised as children tended to exhibit inconsistent discipline and to be more likely to provide inadequate supervision to their children. Specifically, fathering roles and attitudes appear to be strongly influenced by their relationship with their own father (Cowan & Cowan,

3

1987, 1992; Sagi, 1982). For example, Pleck (1997) found that fathers tend to alter their involvement with their children depending on the level of involvement that they received from their fathers. Fathers tend to compensate and increase their level of involvement with their child if they experienced little involvement from their father. Fathers influence their children's long-term adjustment, via their presence or their absence (DeKlyen, Biernbaum, Spelz, & Greenberg, 1998). Although fathers spend less time with their children than mothers, current fathers are more physically and emotionally involved with their children than in previous generations (e.g., Lamb, 1986; Thompson & Walker, 1989). Although fathers maltreat their children less frequently than mothers, the frequency with which they do maltreat their children is astounding. In 2007, fathers participated in approximately 36% of incidents of child maltreatment (either alone, with the child's mother or with another person; U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2007). There may be fewer studies examining fathers in parenting research, however fathers do play an influential role in children's development and adjustment. Therefore, prevention programs should target both mothers and fathers.

Prevention of Child Maltreatment and Child Behavior Problems

Given the prevalence and detrimental effects of child abuse, child behavior problems, and poor parenting practices on individuals, as well as society, there is a great need for prevention. Prevention programs appear to be the best way to curtail the eminent consequences for children and society if negative parenting practices continue at

current levels. Prevention can occur at three levels (primary, secondary, and tertiary),

which vary in terms of specificity of target population and intensity of intervention.

Tertiary prevention targets already identified cases of child maltreatment or child

behavior problems, and aims at preventing the recurrence of child abuse or the escalation

of child behavior problems (e.g., Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004;

Dubowitz, 2001). Tertiary preventions tend to include monitoring, supportive,

therapeutic, restrictive and/or punitive strategies (Dubowitz, 2001; Pelham, Wheeler, &

Chronis, 1998). The goals of tertiary prevention include enhancing family functioning

and reducing the likelihood for future abuse or child behavior problems and to decrease

negative family outcomes in the future (e.g., Chamberlain & Patterson, 1995; Dubowitz,

2001. Geeraert et al., 2004). An example of a tertiary level of child abuse prevention and

treatment for disruptive behavior is Parent-Child Interaction Therapy (PCIT), a family

based therapy model (Eyberg, 1988; Eyberg & Robinson, 1982; Hembree-Kigin &

McNeil, 1995; Urquiza & McNeil, 1996). In PCIT, parents are shown directly how to

implement specific behavioral skills with their children and are coached to over learn the

skill to criteria in vivo. PCIT is an empirically supported treatment (Brestan & Eyberg,

1998; Chambless & Ollendick, 2000; Eyberg, Nelson & Boggs, 2008) designed to

address disruptive behavior problems in children, it has also been deemed efficacious in

reducing rates of child physical abuse recidivism with physically abusive parents

(Chaffin et al., 2004).

Secondary prevention targets specific samples of the population deemed to be at-

risk for child abuse, poor parenting practices, or child behavior problems before the abuse

or behavior problems occur (Dubowitz, 2001; Geeraert et al., 2004; Guterman, 1997). The goals of secondary prevention are to improve parenting competence and family functioning, to increase parents' capability to care for their children, and to avoid potential child abuse or child behavior problems (Dubowitz, 2001). Secondary prevention programs, such as home visitation programs for adolescent parents, are aimed at decreasing the impact of risk factors for child abuse and child behavior problems (e.g., poor parenting practices and social isolation; Geeraert et al., 2004). Although there are no published studies of secondary prevention programs that use PCIT techniques, an intervention targeting new mothers at risk for harsh parenting could be implemented as a secondary prevention program.

The broadest level of intervention is deemed primary. Programs at this level target the entire population before maltreatment, poor parenting, or child behavior problems occur (Dubowitz, 2001; MacMillan, MacMillan, Offord, Griffith, & MacMillan, 1994). Primary prevention is aimed at preventing new cases of child maltreatment or disruptive behavior disorders and serves to help children indirectly (Dubowitz, 2001; Forgays, 1983) by addressing identified risk factors with parents having no history of abuse or poor parenting practices (Geeraert et al., 2004). Given that limited knowledge of child development is a risk factor for child abuse and child behavior problems, primary prevention programs are aimed at increasing knowledge of child development (Fetsch, Schultz, & Wahler, 1999; Institute for Mental Health Initiatives, 1990). The idea is that if knowledge of child development increases, the potential for child abuse or ineffective parenting may be reduced (Institute for Mental

Health Initiatives, 1990). Most research reports that early efforts to increase family functioning may be more effective than interventions after abuse has already occurred (Dubowitz, 2001). The current study was designed as a primary prevention project that would give all participants instructions on parenting--before they become parents--in order to prevent future parenting problems.

Primary Prevention for Non-Parents

Many primary prevention program developers and implementers believe that pre-parenthood is an ideal time to prevent child maltreatment (Starr & Wolfe, 1991; Wolfe, 1993). Although parenting skills are of interest to child-focused researchers, the attitudes of young adults towards parenting practices have received relatively little empirical attention. Previous studies using non-parent samples have examined undergraduate perceptions of their parent's child-rearing (Kroger, 1983), undergraduate non-parents' expectations of themselves as parents and their future children (Silverman & Dubow, 1991), adolescent non-parents' perceptions of parenthood (Calvert & Stanton, 1992; Groom, 1998), and the effect of a parent education curriculum on adolescent attitudes toward parenting (Sasso & Williams, 2002; Stapen, 2005). However, no published studies have investigated the use of a pre-parent training intervention to increase parenting knowledge and develop effective parenting behaviors in undergraduate non-parents. Undergraduate non-parents serve as a unique and interesting sample population because they are at the cusp of two developmental stages: They have recently been parented and are entering a developmental phase during which they could soon become parents. Thus, undergraduate non-parents are an ideal sample population to use to test

7

the use of PCIT principles as a means to increase the knowledge and use of effective

parenting strategies.

A preliminary study conducted by the primary investigator evaluated

undergraduate attitudes towards parental discipline (Lee, 2006). Participants were 248

undergraduate non-parents between the ages of 18 and 25 (M = 20.19, SD = 1.51),

including 194 females and 51 males, all recruited from Auburn University psychology

courses. Participants completed paper and pencil demographic measures and answered

questions about their prior experiences with children, what discipline strategies their

parents used with them, how effective they believed particular discipline strategies are,

and what discipline strategies they would use if faced with raising a 6-year-old child

tomorrow. Participants' responses indicated that how they were parented were

significantly related to how they would parent in the future; participants' reported high

likelihood of continuing to use parenting behaviors that were used by their parents

whether they were considered by researchers to be "positive" or "negative." Participants'

beliefs about which parenting behaviors were effective in changing child behavior was

significantly related to reporting that their parents used those specific behaviors with

them. Participants also reported no difference in the types of discipline used with them

by their parents and what they planned to use when they parent in the future. The results

of this study provided evidence that attitudes related to parenting exist prior to

parenthood and that experiences of being parented as well as particular aspects of

experience with children are related to those attitudes.

<u>What is PCIT?</u>

Parent-Child Interaction Therapy (PCIT) is an empirically supported treatment (Brestan & Eyberg, 1998; Chambless & Ollendick, 2000, Eyberg, Nelson & Boggs, 2008) designed to address child disruptive behavior problems by training parents to use specific behavioral management skills. The specific goals of PCIT are to increase parent-child attachment, warmth, effective parental discipline, and child compliance. PCIT (Eyberg, 1988; Eyberg & Robinson, 1982; Hembree-Kigin & McNeil, 1995) was originally developed to be administered in an individual format, but has recently been evaluated for use in a group format (e.g., Niec, Hemme, Yopp, & Brestan, 2005).

<u>Structure of PCIT</u>

PCIT is divided into two treatment stages: Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI). Therapists deliver didactic training in the CDI and PDI skills to parents via interactive techniques, such as modeling, role-playing, coaching, and behavior rehearsal. Families continue treatment until parents master parenting skills at a predetermined criterion level and children display compliance.

<u>Structure of PCIT: Child-Directed Interaction (CDI)</u>

Parents first receive instruction in the use of CDI skills, which are intended to increase the positive to negative ratio of parent-child interactions. During the CDI phase of the program, therapists teach behavior therapy play skills and specialized parenting strategies intended to evoke positive behavior change and enhance the parent-child relationship. The primary goals of this initial stage are to increase appropriate child behavior (e.g., sharing, constructive play, polite requests) and promote positive parent-

child interactions. Confrontational discipline strategies and consequences for child noncompliance are not introduced until the PDI component of therapy.

The CDI phase involves having the parent and child engage in "special playtime," while the therapist coaches the parent in appropriate use of the CDI parenting skills. During CDI, therapists tell parents to allow their child to lead the play sessions and to avoid asking questions, giving commands, or making criticisms. Instead, parents practice using the following five skills at an extremely high rate during special playtime: Praise, Reflection, Imitation, Description, and Enthusiasm (the acronym "PRIDE" is used to facilitate recall of these skills). More specifically, parents learn to: (a) provide a labeled or specific, praise in response to appropriate child behavior; (b) reflect child concerns and prosocial verbalizations; (c) imitate appropriate play; (d) describe desirable child behavior; and (e) use these play therapy skills with enthusiasm. In addition to learning the PRIDE skills, parents are taught to ignore and redirect inappropriate behavior unless the behavior is potentially dangerous or destructive.

To facilitate the over learning of the PRIDE skills, therapists assign daily homework assignments (i.e., 5 minutes of special playtime every day). Before child discipline is taught in the PDI phase of treatment, parents complete CDI homework assignments and achieve "mastery criteria" in the use of the PRIDE skills (e.g., 10 labeled praises, 10 behavior descriptions, and 10 reflections in 5 minutes).

Structure of PCIT: Parent-Directed Interaction (PDI)

The PDI phase targets child noncompliance for treatment. During this component, therapists teach parents to give clearly-stated instructions and to deliver a

consequence following every instance of child compliance or noncompliance. Specifically, therapists coach parents to provide a labeled (i.e., specific) praise following child compliance, such as, "Thank you for listening. Because you listened to daddy, you don't have to go to timeout. We may keep playing."

If a child disobeys a directive, parents administer a highly-specialized and effective time-out procedure in which time-out does not end until the child complies with the parent's original command. By requiring children to comply with the original directive, the possible problem of time-out serving as an escape from aversive tasks is avoided. Finally, a back-up for time-out is utilized to eliminate the occurrence of unacceptable time-out behavior, such as escape from time-out or standing in the time-out chair. Several back-up procedures exist (e.g., Greco, Sorrell, & McNeil, 2001; McNeil, Herschell, Gurwitch, & Clemens-Mowrer, 2005) all of which punish inappropriate time-out behavior by implementing a less stimulating and more aversive approach. It is essential that, even if children receive a back-up procedure, that they *still* sit in the time-out chair and obey the original command before the procedure ends and special playtime is resumed.

Structure of PCIT: Length of Treatment

For families who participate in individual treatment, a full course of treatment is conducted in 14 weekly, 1-hour, clinic-based sessions. Treatment includes a pretreatment assessment of child and family functioning and feedback, teaching behavior therapy skills to the parents, coaching discipline skills, post treatment assessment of child and family functioning and feedback, and booster sessions as needed.

11

The strong initial empirical support for PCIT has drawn researchers and clinicians to use this intervention to treat a variety of child and family problems and populations including: children with developmental disabilities (e.g., Bagner & Eyberg, 2006; Solomon, Ono, Timmer, & Goodlin-Jones, 2008), separation anxiety disorder (e.g., Choate, Pincus, & Eyberg, 2005), physically abusive families (e.g., Chaffin et al., 2004; Timmer, Urquiza, Zebell, & McGrath, 2005), foster parent families (e.g., McNeil et al., 2005), and a variety of culturally diverse families (e.g., Bigfoot, Funderburk, & Gurwitch, 2006; Fernandez & Eyberg, 2004; Matos, Jurado, Torres, & Rodreguez, 2006; Leung, Tsang, Heung, & Yiu, 2009). PCIT has been implemented in a variety of settings, including clinical settings (e.g., hospitals, mental health facilities), laboratory settings (e.g., universities, colleges), community settings (e.g., homes, community outreach centers), and schools (e.g., Bjorseth & Wormdal, 2005; Filcheck, McNeil, & Greco, 2004; McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991). The alternative formats of implementing PCIT includes variations in the length of treatment, including two-day intensive workshops (McNeil et al., 2005); 12-week time limited groups (Niec et al., 2005; Auerbach, Nixon, Forrest, Gooley, & Gemke, 1999); abbreviated forms of PCIT (Nixon, Sweeney, Erickson, & Touyz, 2003); and standard PCIT that ranges from 10 to 14 weeks (Greco et al., 2001; McNeil et al., 2005).

Core Features of PCIT

Given the brief overview of PCIT (see Hembree-Kigin & McNeil, 1995 for a more detailed description of the program), it is important to discuss the core behavioral principles on which PCIT treatment strategies are based. An important part of being a

12

PCIT therapist is to have a comprehensive understanding of the contingencies of reinforcement. The ability to understand and apply basic behavioral principles to initiate change and increase appropriate and decrease inappropriate client behavior is integral to maximizing treatment benefits (Greco et al., 2001). The core behavioral principles comprising PCIT include positive reinforcement, negative reinforcement, stimulus control, shaping, positive punishment, negative punishment, extinction, overcorrection, and differential reinforcement of other behavior. The following is a brief discussion of the core behavioral principles that comprise PCIT (see Greco et al. (2001) for a more detailed review).

Core Features of PCIT: Principles Used to Increase Appropriate Behavior

Positive Reinforcement. Positive reinforcement is the principle in which a stimulus or event (i.e., positive reinforcer) is presented contingent on a behavior resulting in an increased frequency or likelihood of that behavior occurring in the future. PCIT uses positive reinforcement in several ways, for example parent attention is used strategically to increase the frequency of appropriate child behavior (Hembree-Kigin & McNeil, 1995). Therapists train parents to identify appropriate child behavior and to provide specific or labeled praise that is contingent on the occurrence of such behavior (Greco et al., 2001). Therapists also use praise as a positive reinforcer of appropriate parent behavior to increase the frequency of appropriate in session and out of session parent behavior (Greco et al., 2001).

Negative Reinforcement. Negative reinforcement is a principle involving the removal, reduction, postponement, or prevention of stimulation, thus strengthening the

response on which the operations are contingent (e.g., Hineline, 1977). When a behavior

occurs and removes or reduces an aversive stimulus, it is termed "escape," and behavior

that results in the postponement and prevention of an aversive stimulus is called

"avoidance." Negative reinforcement works similarly to positive reinforcement in that

negatively reinforced behavior occurs with increased frequency and likelihood. PCIT

uses negative reinforcement when a child behaves appropriately in time-out. The child's

removal from the time-out situation is contingent on appropriate behavior (e.g., seated

quietly in time-out chair), and the removal from the aversive situation (i.e., escape from

time-out) sustains appropriate child behavior. Additionally, behavior that prevents the

child from entering time-out, such as compliance with parental commands, is partially

sustained by avoiding the aversive time-out situation (Greco et al., 2001).

 Stimulus Control. Stimulus control is one component of the three-term operant

contingency of reinforcement (i.e., discriminative stimulus, response, and consequence).

The discriminative stimulus (S^D) functions as an antecedent control; a particular response

is strengthened and more likely to occur in the presence of that stimulus compared to

behavior exhibited in its absence. The stimulus operating as an S^D does so as a function

of the organism's behavioral history with that stimulus and the stimulus' relation to

reinforcement and punishment. PCIT uses stimulus control in many ways, particularly

during PDI. For example, if a child does not comply with a parent's command the first

time, the parent gives the child "two choices" (i.e., comply with the command or go to

time-out), and clearly displays two fingers for the child to see. If the child still does not

14

comply, then they go to time-out and learn that, "In the presence of the two fingers (S^D), I will go to time-out if I do not comply" (Greco et al., 2001).

Shaping. Shaping is a behavioral method that involves the use of extinction and differential reinforcement of other responding (DRO) to evoke the desired, target behavior. PCIT therapists often use shaping to teach children to sit (and stay) in time-out. Shaping is also used by PCIT therapists to help parents gain the appropriate skills or identify the appropriate use of enthusiasm (Greco et al., 2001).

Core Principles Used to Decrease Inappropriate Behavior

Positive Punishment. Positive punishment is a principle defined as the response-dependent presentation or delivery of a noxious, aversive, or otherwise annoying stimulus which leads to the reduction of the punished response (e.g., Azrin & Holz, 1966; Martin & Pear, 1996). Back-up procedures used to reduce the frequency of time-out escape (e.g., McNeil, Clemens-Mowrer, Gurwitch, & Funderburk, 1994) are examples of the use of positive punishment in PCIT. PCIT therapists often experience noncompliance from parents during coaching sessions, the therapists often punish the noncompliance by repeating the directive to the parent over and over, which is likely annoying, until the parent complies (Greco et al., 2001).

Negative Punishment. Negative punishment is a process that is used to eliminate or suppress responding, and involves the short-term, response-dependent removal of reinforcement (e.g., Baron, 1991). Negative punishment involves a signaled removal of reinforcement (i.e., the presence of a particular stimulus signals the removal of the positive reinforcer). Negative punishment is used in PCIT contingent on undesirable

15

behavior of either the parent or the child. It is used most often to decrease aggressive and

noncompliant child behavior throughout both phases of treatment. Beginning in CDI and

continuing through PDI, parents are instructed to "turn and ignore" undesirable child

behavior (i.e., out of their seat or rough play). Additionally, time-out in PCIT involves

the immediate removal from "special playtime" and parental attention in order to

decrease child misbehavior, while also increasing appropriate compliant child behavior

via negative reinforcement (Greco et al., 2001).

     Extinction. Extinction involves the long-term removal of reinforcement following

a previously reinforced response; extinction is different from negative punishment in that

it is neither signaled nor time-limited (e.g., Baron, 1991). An example of the use of

extinction in PCIT would be the consistent and indefinite removal of parental attention in

response to child whining. Removal of parental attention (i.e., reinforcement), in this

case, is neither time-limited nor signaled. Parents are to ignore the behavior each time it

occurs and for the duration of its occurrence (Greco et al., 2001).

     Overcorrection. Overcorrection is a standard punishment technique used

occasionally and involves having an individual engage in appropriate behavior related to

the misbehavior (Foxx & Azrin, 1972). Parents in the PDI phase of PCIT are instructed

in the positive use of overcorrection to teach child compliance. Examples of the use of

overcorrection in PCIT include specialized time-out procedures and giving the child

another command immediately after complying with the command that sent the child to

time-out. The second command, if complied with is given an enthusiastic labeled praise.

If a child exhibits an undesired behavior, the parents are also taught that they can have

16

them do it again correctly. Overcorrection is used in PDI to "over-teach" compliance;

over-teaching compliance is likely to increase compliance to a real-life parental

command (Greco et al., 2001).

There are several learning principles at work in PCIT and most behavioral parent

training programs, however most parents do not know these principles and they need

assistance applying them to their parent-child relationships. Given that most parents do

not know these behavioral parenting strategies, most people who are not yet parents do

not know these strategies either.

Exposure to Parent Education Material Prior to Parenthood

There is ample evidence to suggest that when parents are given the tools to parent

and discipline effectively, their children's behavior improves (e.g., Arnold & O'Leary,

1997; Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Hood & Eyberg,

2003). Given that various studies have found relationships between parenting practices

and child behavior problems, many clinicians focus on parenting practices in the course

of treatment of child behavior problems. There are many parent training interventions in

existence, many of those found to be effective have focused on teaching parents to use

more consistent, moderate and firm discipline strategies (e.g., Brestan & Eyberg, 1998;

Chambless & Ollendick, 2000; Forehand, Wells, & Griest, 1980; Webster-Stratton,

Kolpacoff, & Hollinsworth, 1988). However, these programs are not typically used for

primary prevention. Parent training programs intervene after a problem exists and is

identified by either the parent or an external observer such as a social worker, a teacher,

or an extended family member. The primary investigator argues that teaching the

17

behavioral principles of parent training programs to individuals who are not yet parents could serve as a mechanism for primary prevention of child abuse and disruptive behavior disorders.

Why Use a Developmental Psychology Class?

Developmental psychology courses have become requirements for a broad range of undergraduate majors in most 4-year colleges, universities, and 2-year colleges in the United States. Students enrolled in developmental psychology courses thus represent a variety of disciplines such as nursing, communication disorders, elementary education, social work, criminology, and health sciences. Infusing a parent-education module into a class with such a diverse set of students will likely allow for a wider spread of knowledge outside of the classroom. Although some students may view the information in the module as tangential, most students enjoy thinking about how to link the theory covered in lecture or the text to "real life" examples (Knight & Lee, 2008). Additionally, because child maltreatment involves several disciplines (law enforcement, the legal system, medical personnel, school officials, social services, and psychotherapists) and individuals from different stages of the lifespan, providing this type of pre-parent education module could be attractive to a variety of undergraduate majors. Students enrolled in developmental psychology courses are often interested in the preschool age period of development because they either hope to be parents in the future, they will be parents in the very near future, or because they have an interest in working with children in their future careers (Brestan & Lee, 2007). Developmental psychology classes teach about different stages of child development as well as adult development. By using a

developmental psychology class, the researcher can gain information about how knowledge of child development is influenced by the course material and what that knowledge of child development contributes to knowledge about parenting.

Developmental psychology classes serve as an ideal arena to provide pre-parent education because it is in line with recent trends of improving service delivery. Clinic-based PCIT can be viewed as a time- and cost-intensive treatment to provide (McNeil et al., 2005) and is often provided to families who seek help once problems have gotten too severe to manage (Eyberg & Calzada, 1998; Hembree-Kigin & McNeil, 1995). The primary investigator posits that exposing students in a developmental psychology class to PCIT principles prior to parenthood will increase individual's parenting repertoire when they do face parenthood and may help the future parent identify potential child problems quite early. Developmental psychology classes are similar to community-based groups which have been suggested to increase treatment accessibility, availability, and cost effectiveness while also minimizing social bias toward mental health treatment (McNeil et al., 2005). However, because the present study is not longitudinal, the primary investigator will not be able to measure actual parenting outcomes. Although actual parenting outcomes and the effect of the pre-parent education module on the prevention of child maltreatment cannot be determined, the study does provide a unique way to evaluate classroom/teaching outcomes in a multi-method format. Specifically, the study provides a measure of change in student behavior and understanding of child development and parenting that is separate from the final exam.

19

Hypotheses

The primary objective of the study was to determine whether exposing undergraduate non-parents enrolled in a developmental psychology class to a pre-parent education module based on Parent-Child Interaction Therapy didactic information would increase their knowledge and use of effective parenting behaviors. A secondary objective was to determine if exposure to a developmental psychology course would increase an individual's knowledge of child development. A long-range goal of this study is to use the results to facilitate the future implementation of more formal intervention programs for non-parents, particularly those more at-risk for child maltreatment (i.e., development of a secondary prevention program). The short-range goals of the current research project were to examine (a) the influence that exposure to the pre-test experimental measures had on post-test measurement; (b) the influence that exposure to the pre-parent education module had on students' knowledge of effective behavioral parenting skills; (c) the influence that exposure to the pre-parent education module had on students' application of effective behavioral parenting skills during an observation of a parent-child analog role play; (d) the influence that exposure to a developmental psychology course material had on students' knowledge of child development; and (e) the ability to predict group membership from scores on post-test measures.

The current study tested the following specific hypotheses:

1. There will be no impact of pre-test measure exposure on post-test scores.

2. Exposure to the pre-parent education module will result in a significant increase in students' knowledge of behavioral parenting skills as measured by the PCIT Content Quiz scores.

3. Exposure to the pre-parent education module will produce significant increases in students' application of behavioral parenting skills (e.g. Praise, Reflection, Behavior Descriptions) during observed analog role play.

4. Exposure to developmental psychology course material will significantly increase students' knowledge of child development.

5. Post-test scores on the PCIT Content Quiz, KCDI Total Score, and DPICS-III codes (praise, reflective statements, and behavior descriptions) will significantly predict participant membership in intervention vs. no intervention and developmental psychology vs. no developmental psychology groups.

II. METHODS

<u>Participants</u>

An undergraduate non-parent group was recruited for the present study. This sample consisted of 300 Auburn University undergraduate students between the ages of 19 and 23 ($M = 19.79$, $SD = .997$), including 225 females and 75 males. Participants were 82% Caucasian (n = 246). Participants' average year in college was 2nd ($SD =$ 1.02). Approximately 96 percent of the participants (n = 287) were from the United States with 90% of them (n = 270) raised in the South Eastern United States. Approximately 40 percent of the participants (n = 119) reported that their parents' combined income was $100,000 or more annually. The participants represented 51 different majors, with 13.7% of the participants indicating that they were psychology majors (n = 41).

Participants were recruited from psychology courses at Auburn University during two consecutive semesters in order to maximize the sample size. Participants were excluded if they were under 19 years of age, had children and/or were not proficient with the English language so as to fill out the questionnaires. All participants were provided with extra credit from participating professors.

Measures

Demographic Questionnaire. The demographic questionnaire included questions about each participant's marital status, parental status, age, ethnicity, level of education, major of study, country of origin, region of the U.S. in which he or she was raised, number of siblings, birth order, parent's income level, and whether they have ever helped to raise children (See Appendix A).

Knowledge of Child Development Inventory (Larsen & Juhasz, 1986). The Knowledge of Child Development Inventory (KCDI) is a 56-item multiple-choice test of knowledge of child development from birth to age three. Test items are based on the cognitive, physical, emotional, and social development of young children. The reported internal consistency is .93 for the total scale and the reported criterion validity is .80 (Hamilton & Orme, 1990; Larsen & Juhaz, 1986). The criterion validity was established by comparing 24 master's students' scores on the KCDI with their scores on sample true-false test questions from an instructor's manual for the textbook, *Children, Development and Relationships* (Smart & Smart, 1977). Larsen and Juhaz did not report the internal consistency of the subscales in previous publications, however Cronbach's alpha for the subscales and total scale in the current study are: .67 (Emotional Development), .70 (Cognitive Development), .37 (Physical Development), .53 (Social Development), and .83 (Total). The test-retest reliability (Pearson Correlations for all control participants) of the subscales and total for this study are: .53 (n=33; $p=.001$; Emotional Development), .56 (n=33; $p=.001$; Cognitive Development), .63 (n=33; $p=.001$; Physical Development),

.25 (n=33; *p*=.153, Social Development), and .50 (n=33; *p*=.003; Total). Scores can range from 0 to 14 for each subscale and 0 to 56 for the total score.

Parent-Child Interaction Therapy Content Quizzes- CDI and PDI. The primary investigator created two 14-item multiple-choice quizzes, with input from Elizabeth Brestan Knight, PhD, and graduate student peers all versed in PCIT, to test participant knowledge of PCIT principles relevant to the two phases of instruction (See Appendix B). The content quizzes appeared to be face valid but because they were created for the current study, there were no data suggesting their reliability and validity prior to conducting the study. However, analyses of the data collected in this study indicate internal consistencies (Cronbach's alpha) of: .62 (CDI); .55 (PDI), and .73 (for all 28 items). The test-retest reliabilities (Pearson Correlation for all control participants) of the individual quizzes and their combined scores are: .11(n=24; *p*=.610; CDI); .73 (n=24; *p*=.001; PDI); and .63 (n=24; *p*=.001; all 28 items). Scores can range from 0 to 14 for each of the CDI and PDI quiz and from 0 to 28 on combined total scores.

Dyadic Parent-Child Interaction Coding System-III (Eyberg, Nelson, Duke, & Boggs, 2004). The DPICS-III is a behavioral coding system designed to assess the quality of parent-child social interactions during structured play situations. The previous version of the coding system, the DPICS II, consisted of 25 categories for child behavior and 27 categories for parent behavior (Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994). In DPICS III, Eyberg and colleagues (2004) combined some of the categories from the DPICS II to create new categories. Only eight parent categories of verbalizations were coded in the current study: neutral talk, behavior description,

reflective statement, labeled praise, unlabeled praise, question, negative talk, and command (See Appendix C for descriptions of the codes). The coding of undergraduate non-parents in an analog role play observation is a new application of the DPICS codes, thus no norms are available. For this study, undergraduate and graduate research assistants coded video recorded pre- and post-module DPICS III observations.

Coder training is aided by use of "The Workbook" (Eyberg et al., 2004), a coder training manual that accompanies the coding manual. Coders were trained to 80% agreement with criterion tapes prior to coding participant interactions for this project. A pair of coders coded the recorded observations simultaneously in "real time," reviewed their codes at the end, calculated their percent agreement, and if agreement was 80 percent or above they entered the codes into a spreadsheet. If percent agreement was less than 80 percent, coders recoded the observation until 80 percent agreement was met. Coder training involved weekly meetings and 3 hours of weekly homework/practice for approximately 12 weeks.

Reliability for the DPICS III is drawn from the standardization studies conducted on the DPICS II categories. The results of these studies indicate adequate to strong inter-observer reliabilities (Cohen's kappa) for all categories except child Negative Touch, which occurred infrequently (Eyberg et al., 2004). Test-retest reliability also has been demonstrated to be moderately stable in a study that examined retest at 1 week (Brinkmeyer, 2005). Multiple studies have demonstrated the validity of the original DPICS categories, and most of those categories have been retained in later editions of DPICS (Eyberg et al., 2004). Discriminative validity was established in the first

standardization of DPICS (Robinson & Eyberg, 1981) and has been demonstrated more recently (Bessmer, Brestan, & Eyberg, 2009). The treatment sensitivity of the DPICS has been demonstrated in several studies (Eyberg, 1980; Eyberg, 1982; Schumann, Foote, Eyberg, Boggs, & Algina, 1998; Webster-Stratton & Hammond, 1990).

Procedure

Recruitment. Three hundred participants were recruited through undergraduate psychology courses at Auburn University during two consecutive semesters. The study was designed as an extension of a Solomon Four Group Design; instead of four groups, however, there were six groups. Specifically, three samples of participants were recruited, two samples of students enrolled in developmental psychology classes and a third sample of students who had never taken developmental psychology before. Participants were invited to participate via announcements in the developmental psychology sections offered in the Psychology Department. During the first semester of data collection, two developmental psychology courses were offered; each meeting twice a week for 75 minutes. During the second semester, three sections of developmental psychology were offered. Two of the sections were scheduled for twice weekly 75-minute meetings while the third met three times weekly for 50 minutes. One section per semester was assigned to the experimental condition and the other section(s) were assigned to a control condition (Developmental Psychology Control). The participants who had never taken a developmental psychology class were also assigned to a control condition (True Control). The sections were randomly assigned to experimental and control conditions by the graduate research assistant implementing the module. Each

26

section assigned to the experimental group happened to be a section that met twice weekly for 75 minutes. Course instructors were blind to the sections' conditions until after the data collection was completed.

Participants were randomly assigned to six groups (see Figure 1): (a) Experimental condition completing pre- and post-measures; (b) Developmental Psychology Control condition completing pre-and post-measures; (c) True Control condition completing pre- and post-measures; (d) Experimental condition completing post-measures only; (e) Developmental Psychology Control condition completing post-measures only; and (f) True Control condition completing post-measures only. Additionally, sub-samples of participants from each of the six groups were invited to participate in a structured analog play task.

Figure 1. Extended Solomon Four Group Design
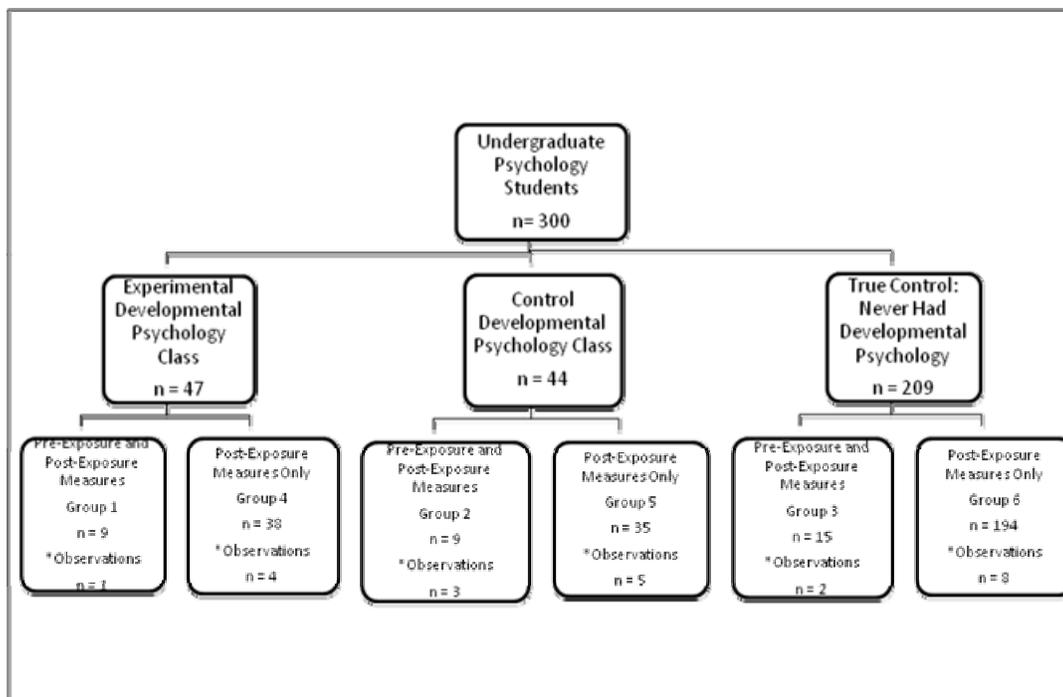
A Solomon Four Group design attempts to control for sensitization to treatment by exposure to pre-test assessment. The assumption is that by having groups that are randomly assigned to treatment as well as pre-test and post-test or post-test only, researchers will be able to isolate causal events that affect the outcome. The current study extended the four-group design to include two additional groups to isolate the effects of exposure to developmental psychology material, pre-parent education material, pre-test measures, and extraneous variables on the outcome measures. The six group design allowed for multiple pair-wise comparisons to evaluate the effects of exposure to the various information as well as possible additive effects of exposure to the information.

Questionnaire data were collected on-line via SONA Systems. Participants were sent e-mail invitations and were provided passwords to access the Web-based questionnaires. Undergraduate research assistants scheduled, conducted, video recorded, and coded observations. The research assistants gained course credit for their involvement. Participants received extra credit for their psychology course in return for their participation.

In addition to undergraduate research assistants, one graduate student well versed in PCIT taught the pre-parent education module to one of the sections of developmental psychology each of two consecutive semesters. This graduate student followed scripts created by the primary investigator. The same graduate student also taught the "control" lectures which were standard lectures about early adulthood. The use of a graduate student in the teaching of the module and reinforcing students for in-class practice

allowed the primary investigator and course instructors to be blind to treatment conditions.

        <u>Pre-exposure Measures</u>**.** All individuals who participated during the pre-exposure data collection phase (which ended the day before teaching the in-class module) completed the demographic questionnaire on-line and were sorted into three samples by responses indicating the developmental section in which they were enrolled or that they had never taken developmental psychology. After participants completed the demographic questionnaire they were e-mailed a password. Some of the participants received a password that allowed them to access the remaining experimental measures (KCDI and PCIT content quizzes) while others received a password that allowed them access to additional parenting measures that were collected for a different research project investigation.

        The sorting of participants by developmental psychology section allowed all participants the opportunity to gain extra credit while also creating the post-only groups. The sorting also allowed for the sampling and randomization of both the experimental and control groups while the research assistant also remained blind to their conditions. Randomly determined sub-samples of participants (approximately 25% of participants per group) from each of the six groups who completed the on-line measures were invited to participate in a structured analog play task via an email invitation that included a second password to access the on-line scheduling for the play task session. Participants who had been invited to participate in the play task then scheduled convenient times to participate in the task. Participants received extra credit regardless of whether they

completed all of the measures. Participants had the opportunity to earn 1-1.5 hours of extra credit for the pre-exposure measures.

Pre-Parent Education Module. The module was implemented on 2 consecutive class days of the developmental psychology course during the early adulthood portion; the module was taught at the same point in the class both semesters. The graduate student "teacher" taught the module within a 75-minute class period. The first class period was designated to the CDI portion of the module. The teacher delivered a modified version of the CDI didactic to all students in attendance (see Appendix D for script). After the didactic portion, the teacher demonstrated the CDI skills with a student volunteer. Students were encouraged to practice their CDI skills with a partner for 10-15 minutes (with each student role-playing the parent and the child). Dyads were provided paper and crayons to use during their role-plays. The teacher provided positive reinforcement to students and guidance in using their CDI skills appropriately. All students received handouts at the end of the class period related to CDI skills. The course instructors were blind to the conditions of their classes so students were not tested on the module material presented in class. The teacher told students that the information provided in class was not going to be tested directly, however topics mentioned in the class period did relate to reading material that would be tested, so they would still benefit from paying attention during the pre-parent education module.

The second class period was designated to the PDI portion of the module. The teacher delivered a modified version of the PDI didactic to all students in attendance (see Appendix E for script). Although the teacher briefly discussed the principles behind the

time-out procedure, students were not taught explicitly how to implement the time-out procedure because the students did not have children and their use of the procedure could not be monitored. After the didactic portion, the teacher demonstrated PDI skills with a student volunteer. Students were encouraged to practice their CDI and PDI skills with a partner for 10-15 minutes (with each student to role-playing the parent and the child). Dyads were provided paper and crayons to use during their role-plays. The teacher provided positive reinforcement to students and guidance in using their CDI and PDI skills appropriately. All students received handouts at the end of the class period related to PDI skills. The teacher reminded students that the information provided in class was not going to be tested directly, however topics mentioned in the class period did relate to reading material that would be tested, so they would still benefit from paying attention to the pre-parent education module material.

The graduate student teacher collected index cards with the names of students who attended class written on them, regardless of whether the pre-parent education module was taught or the control lecture was taught. The course instructors used the index cards to provide in-class extra credit to students who attended lecture. The primary investigator's undergraduate research assistants used the list of names of individuals who attended class for both study modules to screen post-module participants and to control for full exposure to the module.

Post-Module Measures. All individuals who participated during the post-module data collection phase (which began when the classes began to discuss middle adulthood) completed the demographic questionnaire on-line and were sorted into three samples by

responses indicating which developmental section in which they were enrolled or that

they had never taken developmental psychology. After participants completed the

demographic questionnaire and they were eligible to participate in the post-module data

collection, they were e-mailed a password that allowed them to access the remaining

experimental measures (KCDI and PCIT content quizzes). Participant responses were

linked by email addresses so that pre- and post-module measures were linked. Randomly

determined sub-samples of participants (approximately 25 percent of participants per

group) from each of the six groups who completed the on-line measures were invited to

participate in the structured analog play task via an e-mail invitation that included a

fourth password to access the on-line scheduling for a play task session. Participants who

had been invited to participate in the play task then scheduled convenient times for the

play task. Participants received their extra credit regardless of whether they completed

all of the post-module measures. Participants had the opportunity to earn 1-1.5 hours of

extra credit for the post-module measures.

Data Analyses

The researcher conducted various preliminary analyses to evaluate the study

measures, including a factor analysis of the PCIT content quizzes to explore their factor

structure. Correlational analyses identified the internal consistency of the PCIT Quiz and

the KCDI subscales and KCDI Total score. Additional correlational analyses determined

the test-retest reliability of the PCIT Quiz and the KCDI Total score. Prior to entering

DPICS codes from the video recorded role play observation into the database, coders

calculated percent agreement between the primary and reliability coder for each observation and entered frequency counts for the DPICS code into the database.

The researcher conducted analyses of variances (ANOVAs) on demographic variables, PCIT Quiz scores, DPICS codes, and KCDI scores to examine between group differences at pre-test. Additional ANOVAs conducted on PCIT Quiz scores, DPICS codes, and KCDI scores examined between group differences at post-test. Prior to conducting the ANOVAs, the researcher ran bivariate correlations between demographic variables and outcome variables to determine if any relationships existed between them. Where significant correlations existed, the researcher entered demographic variables into the ANOVA as covariates to remove their potential confounding effects from the analysis. Additionally, analyses of covariances (ANCOVAs) conducted on the PCIT Quiz and the KCDI examined the effect of pre-test scores on post-test scores and determined pre-test sensitivity.

The investigator conducted independent sample t-tests on the PCIT Quiz, the DPICS III codes, and the KCDI to examine between group differences in pre-test and post-test scores. Paired sample t-tests conducted on the PCIT Quiz and the KCDI for groups 1, 2, and 3 examined differences in scores from pre- to post-test. Paired sample t-tests investigated the within-group effects of the pre-parent education module and exposure to the developmental psychology material on knowledge of behavioral parenting strategies (PCIT Quiz) and knowledge of child development (KCDI). The researcher did not use this analysis to investigate treatment effects on application of behavioral parenting strategies, as measured by the DPICS-III frequency counts because

33

there was only one participant who participated in the observation play task at pre- and post-test.

Binary logistic regression analyses conducted on the PCIT Quiz and KCDI post-test scores examined whether scores could predict group membership with respect to membership in intervention vs. no intervention groups and developmental class vs. no developmental class groups.

Finally, a Reliable Change Index (RCI) analysis conducted examined further changes in participant's knowledge of behavioral parenting strategies and knowledge of child development over time. The researcher conducted an RCI analysis for all measures that demonstrated statistically significant change in the paired sample t-test analyses. RCI analyses determine how many participants in a given sample achieved a level of change on study outcome measures that is unlikely to be due to the unreliability of the measures themselves (Jacobson, Roberts, Berns, & McGlinchey, 1999).

III. RESULTS

<u>Preliminary Analyses</u>

       Prior to conducting primary study analyses, preliminary analyses examined characteristics of study measures to understand the data better. The researcher excluded participants who completed the demographic questionnaire but no experimental measures at any point in either semester from demographic data entered into the final database. Additionally, the researcher excluded the data from participants who only participated at pre-test from the final database resulting in 300 participants. The investigator used casewise deletion to manage the data for all analyses such that she excluded the data from any participant who was missing data for a given analysis prior to conducting that analysis.

<u>Analyses of study measures</u>

       <u>PCIT content quizzes.</u> The researcher conducted a principal component analysis (PCA) on the post-test measurement of the participants who were not taught the pre-parent education module of the 28 items of the Parent-Child Interaction Therapy content quizzes (Child Directed Interaction and Parent Directed Interaction quizzes combined) in order to examine their factor structure.   Prior to performing PCA, the investigator assessed the suitability of the data for factor analysis. Inspection of the correlation matrix revealed the presence of coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .680, exceeding the recommended value of .6 (Kaiser, 1970, 1974) and the Bartlett's Test

of Sphericity (Bartlett, 1954) reached statistical significance, supporting the factorability of the correlation matrix.

PCA revealed the presence of 10 components with eigenvalues exceeding 1, explaining 12.27%, 6.16%, 5.37%, 5.07%, 4.81%, 4.62%, 4.34%, 4.09%, 3.93%, and 3.66% of the variance respectively. An inspection of the scree plot revealed a break after the second component (See Figure 2). Using Catell's (1966) scree test, the investigator decided to retain the two components for further evaluation. However, the results of Parallel Analysis showed three components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (28 variables x 253 respondents; see Table 1).

Figure 2. PCIT Quiz Principle Components Analysis Scree Plot

Scree Plot
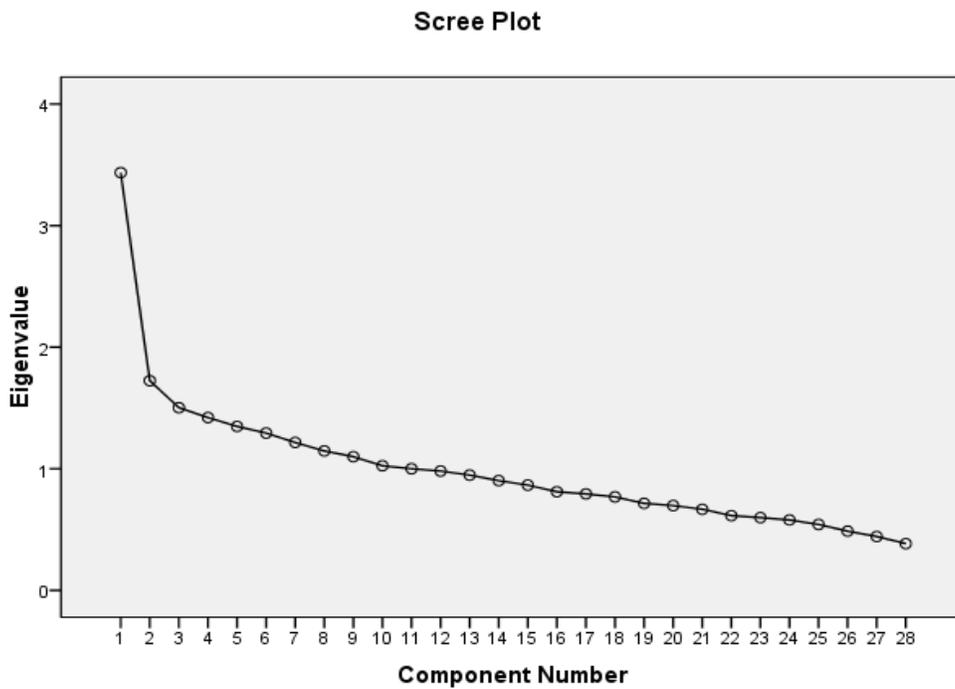
Table 1. Comparison of eigenvalues from principal components and parallel analyses

Component Number	Actual Eigenvalue from PCA	Criterion value from parallel analysis	Decision
1	3.436	1.675	accept
2	1.724	1.575	accept
3	1.502	1.498	accept
4	1.421	1.431	reject
5	1.348	1.373	reject

To aid in the interpretation of the components, the researcher performed a Varimax rotation. The Varimax rotation of three components revealed multiple items that cross loaded on two or more components; the Varimax rotation of two components was the best fit with no items cross loading. The researcher's initial decision to retain two components was supported by examination of the Varimax rotations (see Table 2 for details of Varimax rotation of two factors). The rotated solution indicated that both components exhibited a number of strong loadings. The two component solution explained a total of 18.43% of the variance, with Component 1 contributing 12.14% and Component 2 contributing 6.29%.

The interpretation of the two components was consistent with the intent of the researcher in creating the quizzes with items related to "Children leading the play" loading strongly on Component 1 and items related to "Parents leading the interaction" loading strongly on Component 2, however a number of the items were part of a quiz that was not intended to measure that skill (e.g., PDI items loading on Component 1 and CDI items loading on Component 2). The results of this analysis do not support the use of the CDI items and the PDI items as separate scales, the remainder of analyses using the PCIT content quizzes will use a PCIT Quiz total score.

Table 2. Varimax Rotation of Two Factor Solution for PCIT Content Quiz

Item	Component 1 Child Leading	Component 2 Parent Leading
CDI13	0.641	-0.097
PDI13	0.621	-0.087
CDI1	0.604	-0.027
PDI8	0.598	-0.097
PDI11	0.598	-0.070
CDI 2	0.554	-0.006
CDI 11	0.530	0.139
CDI 7	0.436	-0.145
CDI 6	0.392	0.183
PDI 12	0.329	0.143
CDI 8	0.326	0.294
CDI 12	0.243	0.130
CDI 5	0.217	-0.074
CDI 9	-0.204	0.195
PDI 10	0.130	0.033
PDI 5	0.103	0.021
PDI 4	0.247	0.534
PDI 9	0.226	0.476
PDI 7	-0.004	0.456
CDI 14	-0.016	0.427
PDI 3	0.254	0.382
CD I4	-0.025	0.381
PDI 14	0.135	-0.335
PDI 2	0.034	0.245
PDI 6	-0.012	-0.199
CDI 10	-0.019	-0.190
PDI 1	-0.029	0.186
CDI 3	0.045	-0.103
% of variance explained	12.140%	6.290%

Dyadic Parent-Child Interaction Coding System (3rd edition; DPICS III). All

observation data entered in the database had at least 80 percent agreement between the

two coders. Only two observations had to be recoded, and each was only recoded one

additional time to achieve 80 percent agreement. The average percent agreement for the

observations of this study was 90 (n = 30).

<u>Analyses of group differences at pre-test</u>

Prior to conducting primary study analyses, the investigator conducted analyses of

the three groups at pre-test (Group 1: Experimental Developmental Psychology pre-post,

Group 2: Control Developmental Psychology pre-post, and Group 3: True Control pre-

post) to evaluate the differences that existed prior to presentation of the pre-parent

education module or developmental psychology material.

A one-way analysis of variance (ANOVA) conducted on several demographic

variables determined if any between group differences existed on demographic

information. Variables entered into the ANOVA included age, gender, year in college,

ethnicity, country of origin, region of the United States in which participants were raised,

income, rigidity. There were statistically significant differences at the $p<.05$ level in age,

$F (2, 30) =4.37$, $p=.02$, gender, $F (2, 30) =3.97$, $p=.03$, and year in college,

$F (2, 30) =3.57$, $p=.04$ for the three groups. Despite reaching statistical significance, the

actual difference in mean scores between groups was small. The effect size, calculated

using eta squared, was .23 for age, .21 for gender, and .19 for year in college. Post-hoc

comparisons conducted using the Tukey-HSD test revealed that developmental

psychology students who were taught the pre-parent education module (Group 1) were

significantly older and more advanced in school than psychology students who have

never taken developmental psychology (Group 3). Although results of the ANOVA

indicated significant between group differences with regard to gender, post-hoc

comparisons failed to reveal any statistically significant differences (see Table 3 for

between group comparisons).

Table 3. Post-hoc Comparisons of Pre-module Between Group Differences in

Demographic Variables

			Multiple Comparisons		
Tukey HSD					
Dependent Variable	(I) GROUP	(J) GROUP	Mean Difference (I-J)	Std. Error	Sig.
Age	1	2	0.33	0.48	0.77
		3	1.20*	0.43	0.03
	2	1	-0.33	0.48	0.77
		3	0.87	0.43	0.13
	3	1	1.20*	0.43	0.03
		2	-0.87	0.43	0.13
Gender	1	2	0.00	0.20	1.00
		3	0.42	0.18	0.07
	2	1	0.00	0.20	1.00
		3	0.42	0.18	0.07
	3	1	-0.42	0.18	0.07
		2	-0.42	0.18	0.07
YearCollege	1	2	0.44	0.48	0.63
		3	1.11*	0.43	0.04
	2	1	-0.44	0.48	0.63
		3	0.67	0.43	0.28
	3	1	1.11*	0.43	0.04
		2	-0.67	0.43	0.28

*. The mean difference is significant at the 0.05 level.
Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)

A one-way analysis of variance (ANOVA) conducted on pre-module PCIT Quiz

scores determined whether between groups differences existed. The analyses revealed no

statistically significant differences, $F(2, 30) = 2.62$, $p=.09$ (See Table 4 for descriptive

statistics of PCIT pre-module scores).

Table 4. Description of Group Performances on Pre-module PCIT Quiz

Descriptives

PCIT Quiz Total Scores

Group	N	Mean	Std.	Std. Error	Mean % Correct
1	9	15.56	3.36	1.12	55.57
2	9	14.22	2.95	0.98	50.78
3	15	12.53	3.23	0.83	44.75
Total	33	13.82	3.35	0.58	49.35

Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)

An additional ANOVA conducted on pre-module DPICS III codes evaluated

between group differences. No statistically significant differences existed for any of the

eight DPICS codes (neutral talk, behavior description, reflective statement, labeled

praise, unlabeled praise, question, negative talk, and command) included in the ANOVA

(See Table 5 for descriptive statistics of pre-module DPICS III frequencies).

Table 5. Description of Group Performances on Pre-module DPICS III Codes

	Group	N	Mean	Std. Deviation	Std. Error
		Descriptives			
Neutral Talk	1	1	24.00	.	.
	2	3	31.33	3.21	1.86
	3	2	21.00	1.41	1.00
	Total	6	26.67	5.65	2.30
Behavior	1	1	1.00	.	.
Description	2	3	0.00	0.00	0.00
	3	2	0.00	0.00	0.00
	Total	6	0.17	0.41	0.17
Reflection	1	1	1.00	.	.
	2	3	2.67	4.62	2.67
	3	2	0.00	0.00	0.00
	Total	6	1.50	3.21	1.31
Labeled Praise	1	1	0.00	.	.
	2	3	0.33	0.58	0.33
	3	2	0.00	0.00	0.00
	Total	6	0.17	0.41	0.17
Unlabeled Praise	1	1	0.00	.	.
	2	3	2.67	3.06	1.76
	3	2	4.00	5.66	4.00
	Total	6	2.67	3.50	1.43
Question	1	1	10.00	.	.
	2	3	9.67	6.66	3.84
	3	2	9.00	4.24	3.00
	Total	6	9.50	4.64	1.89
Negative Talk	1	1	5.00	.	.
	2	3	3.33	3.21	1.86
	3	2	1.50	2.12	1.50
	Total	6	3.00	2.61	1.06
Direct Command	1	1	3.00	.	.
	2	3	1.33	1.53	0.88
	3	2	3.00	4.24	3.00
	Total	6	2.17	2.32	0.95
Direct Command	1	1	0.00	.	.
No Opportunity to Comply	2	3	0.33	0.58	0.33
	3	2	0.00	0.00	0.00
	Total	6	0.17	0.41	0.17
Indirect Command	1	1	4.00	.	.
	2	3	0.33	0.58	0.33
	3	2	4.50	6.36	4.50
	Total	6	2.33	3.61	1.48
Indirect Command	1	1	1.00	.	.
No Opportunity to Comply	2	3	5.67	5.13	2.96
	3	2	3.50	4.95	3.50
	Total	6	4.17	4.36	1.78

Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)

A one-way ANOVA conducted on pre-test scores of the KCDI determined the presence of between group differences. Given the relative instability of the individual subscales, the ANOVA only investigated differences in the KCDI Total Score. Statistically significant differences emerged at the $p<.05$ level for the KCDI total score, $F(2, 30) =4.96, p=.01$, for the three groups. Despite reaching statistical significance, the actual difference in mean KCDI scores between groups was small. The effect size, calculated using eta squared, was .25 for the KCDI total score. Post-hoc comparisons conducted using the Tukey-HSD test revealed that developmental psychology students who were not taught the pre-parent education module (Group 2) performed significantly better than psychology students who had not taken developmental psychology (Group 3) on the KCDI (see Table 6 for descriptive statistics of pre-module KCDI Total scores and Table 7 for between group comparisons).

Table 6. Description of Group Performances on Pre-module KCDI Scores

| | | | Descriptives | | | |
KCDI	Group	N	Mean	Std. Deviation	Std. Error	Mean %
Total Score	1	9	43.44	3.05	1.02	77.57
	2	9	44.22	2.86	0.95	78.96
	3	15	39.27	5.24	1.35	70.13
	Total	33	41.76	4.67	0.81	74.57

Note: KCDI pre-module data were collected after early childhood section of developmenta
Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)

Table 7. Post-hoc comparisons of between group differences in KCDI at pre-test

Tukey HSD KCDI Scores	(I) GROUP	(J) GROUP	Mean Difference (I-J)	Std. Error	Sig.
		Multiple Comparisons			
Total Score	1	2	-0.78	1.97	0.92
		3	4.18	1.76	0.06
	2	1	0.78	1.97	0.92
		3	4.96*	1.76	0.02
	3	1	-4.18	1.76	0.06
		2	4.96*	1.76	0.02

*. The mean difference is significant at the 0.05 level.
Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)

Identification of covariates

Correlational analyses conducted identified demographic variables with significant relationships with dependent variables. Age and year in college demonstrated moderate and significant relationships with the KCDI Total Score at the pre-module time point, however at post-module no significant relationship existed between age and KCDI Total Score and the relationship between year in college and KCDI Total Score was significant but small (see Table 8 for detailed information about the relationships). Age and year in college were correlated significantly with each other, $r=.837$ (n=300; $p=.000$), thus age was dropped as a possible covariate. The relationships between the KCDI and the researcher graphed potential covariates for each group to evaluate the linearity of the relationships and the strength of those relationships via the R squared values (See Figure 2 for graph of linear relationship). The investigator then assessed

these relationships to determine if statistically significant interactions existed between

year in college and the KCDI Total Score. No significant interaction existed,

$F(2, 27) = 1.885$, $p = .171$, the researcher determined that year in college covaried with the

KCDI Total Score.

Table 8. Correlations between potential covariates and KCDI Total Scores

| | | Correlations | | |
		Year in College	Age	KCDI Total Score
Year in College	Pearson Correlation	1.000	0.837**	0.568**
	Sig. (2-tailed)		0.000	0.001
	N	300	300	33
Age	Pearson Correlation	0.837**	1.000	0.480**
	Sig. (2-tailed)	0.000		0.005
	N	300	300	33
KCDI Total Score	Pearson Correlation	0.568**	0.480**	1.000
	Sig. (2-tailed)	0.001	0.005	
	N	33	33	33
KCDI Total Score Post	Pearson Correlation	0.135*	0.051	0.502**
	Sig. (2-tailed)	0.019	0.376	0.003
	N	300	300	33

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Figure 3. Graph of linear relationships between KCDI Total Score and Year in College
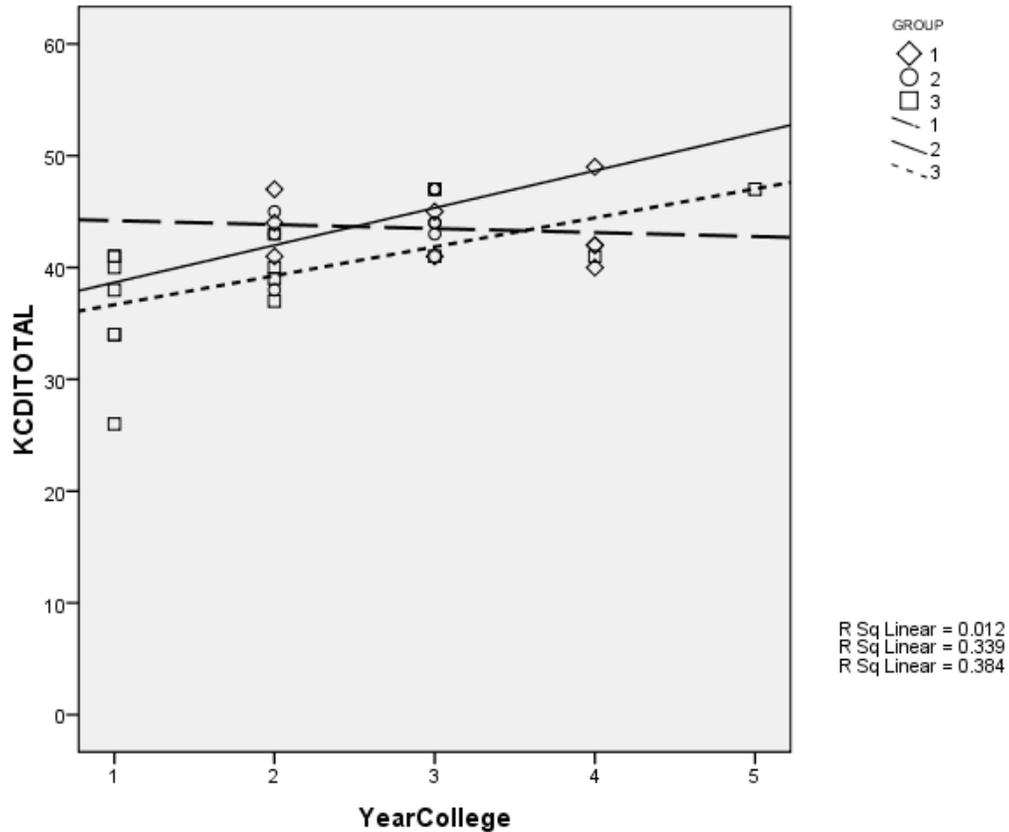
Primary study analyses: Hypothesis testing

Hypothesis 1. There will be no impact of pre-test measure exposure on post-test scores. In order to assess the impact of exposure to experimental measures at pre-test on post-test scores, the researcher conducted independent sample *t*-tests to identify any significant differences in post-test scores between the pre- and post-test groups versus the post-test only groups for each sample on each experimental measure. The independent sample *t*-tests conducted on the PCIT Quiz revealed significant differences in the post-

46

test scores of the developmental psychology students who were taught the pre-parent education module between those who completed the measure at pre- and post-test (Group 1) and those who only completed the measure at post-test (Group 4; see Table 9 for complete between group comparisons). These differences indicate a possible priming effect of the pre-test quiz for module information and increased learning on post-test. These results are consistent with teaching research which suggests that quizzing students about material before lecturing serves as a signaling device to cue attention to important lecture material (Nevid & Mahon, 2009). The independent sample t-tests conducted on the KCDI Total Score revealed no significant between group differences in the post-test scores (see Table 10 for complete between group comparisons). Independent sample t-tests could only be conducted on Groups 1 and 4 for the DPICS III codes because only one participant completed the observation task at pre- and post-test. The results of the independent sample t-test conducted on the DPICS III codes are limited, but indicate a significant between group differences in the post-test observation. Group 1 and Group 4 differed on their post-test frequencies of Negative Talk (see Table 11 for complete between group comparisons).

Table 9. Comparison of Between Group Differences on Post-test PCIT Quiz Total Scores

PCIT Total Post Scores			Independent Samples Test t-test for Equality of Means				
GROUPS	N	Mean	Standard Deviation	t	Sig. (2-tailed)	Mean % Correct	eta squared
Group 1	9	22.00	4.00	2.49	0.02	78.57	0.12
Group 4	38	18.16	4.20			64.86	
Group 2	9	14.78	3.73	0.35	0.73	52.79	0.00
Group 5	35	14.29	3.72			51.03	
Group 3	15	12.67	3.44	-0.05	0.96	45.25	0.00
Group 6	194	12.71	3.58			45.39	

Group 1 = Experimental Developmental Psychology Class (taught module) Pre and Post
Group 2 = Control Developmental Class (not taught module) Pre and Post
Group 3 = True Control (never had developmental and not taught module) Pre and Post
Group 4 = Experimental Developmental Psychology Class (taught module) Post only
Group 5 = Control Developmental Class (not taught module) Post only
Group 6 = True Control (never had developmental and not taught module) Post only

Table 10. Comparison of Between Group Differences on Post-test KCDI Total Scores

KCDI Total Post Scores			Independent Samples Test t-test for Equality of Means				
GROUPS	N	Mean	Standard Deviation	t	Sig. (2-tailed)	Mean % Correct	eta squared
Group 1	9	42.22	4.79	0.64	0.53	75.39	0.01
Group 4	38	40.84	6.04			72.93	
Group 2	9	42.78	7.69	0.52	0.60	76.39	0.01
Group 5	35	41.77	4.33			74.59	
Group 3	15	36.73	9.18	-0.65	0.52	65.59	0.00
Group 6	194	37.99	7.10			67.84	

Group 1 = Experimental Developmental Psychology Class (taught module) Pre and Post
Group 2 = Control Developmental Class (not taught module) Pre and Post
Group 3 = True Control (never had developmental and not taught module) Pre and Post
Group 4 = Experimental Developmental Psychology Class (taught module) Post only
Group 5 = Control Developmental Class (not taught module) Post only
Group 6 = True Control (never had developmental and not taught module) Post only

Table 11. Comparison of Between Group Differences on Post-test DPICS III Codes for

Child Directed Interaction

| | | | Independent Samples Test t-test for Equality of Means | | | | |
DPICS III Post Frequencies Codes	GROUPS	N	Mean	Standard Deviation	t	Sig. (2-tailed)	eta squared
Neutral Talk	Group 1	1	9.00	.	-1.65	0.20	0.47
	Group 4	4	28.25	10.44			
Behavior Description	Group 1	1	2.00	.	.	.	.
	Group 4	4	0.00	0.00			
Reflective Statement	Group 1	1	0.00	.	-0.91	0.43	0.22
	Group 4	4	2.25	2.22			
Labeled Praise	Group 1	1	3.00	.	0.15	0.89	0.01
	Group 4	4	2.75	1.50			
Unlabeled Praise	Group 1	1	2.00	.	-1.81	0.17	0.52
	Group 4	4	5.50	1.73			
Question	Group 1	1	10.00	.	-0.56	0.61	0.10
	Group 4	4	13.00	4.76			
Negative Talk	Group 1	1	4.00	.	6.71	0.01	0.94
	Group 4	4	0.25	0.50			
Direct Command	Group 1	1	4.00	.	.	.	.
	Group 4	4	0.00	0.00			
Direct Command No Opportunity To Comply	Group 1	1	0.00	.	.	.	.
	Group 4	4	0.00	0.00			
Indirect Command	Group 1	1	1.00	.	0.00	1.00	.
	Group 4	4	1.00	0.82			
Indirect Command No Opportunity to Comply	Group 1	1	2.00	.	.	.	.
	Group 4	4	0.00	0.00			

Group 1 = Experimental Developmental Psychology Class (taught module) Pre and Post
Group 4 = Experimental Developmental Psychology Class (taught module) Post only

Hypothesis 2. Exposure to the pre-parent education module will result in a

significant increase in students' knowledge of behavioral parenting skills as measured by

the PCIT Content Quiz scores. In order to assess the impact of the pre-parent education

module on students' knowledge of behavioral parenting skills, the researcher conducted a

one-way analysis of variance (ANOVA) on post-module PCIT Quiz scores to determine

whether between groups differences existed. Analyses revealed statistically significant

differences, F (5, 294) =23.32, p<.001 (See Table 12 for descriptive statistics of PCIT

post-module scores). Post-hoc analyses indicated that the PCIT Quiz scores of

developmental psychology students who were taught the pre-parent education module

(Groups 1 and 4) at post-test were significantly different from the other psychology

students who were not taught the education module (Groups 2, 3, 5, and 6). Additionally,

Groups 1 and 4 were not significantly different from each other on post-test PCIT Quiz

scores nor were Groups 2 and 4 (see Table 13 and Figure 3 for complete between group

comparisons).

Table 12. Description of Group Performances on Post-module PCIT Quiz

Descriptives

PCIT Quiz Total Scores

Group	N	Mean	Std. Deviation	Std. Error	Mean % Correct
1	9	22.00	4.00	1.33	78.57
2	9	14.78	3.73	1.24	52.78
3	15	12.67	3.44	0.89	45.24
4	38	18.16	4.20	0.68	64.85
5	35	14.29	3.72	0.63	51.02
6	194	12.71	3.58	0.26	45.40
Total	300	13.92	4.33	0.25	49.73

Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)
Group 4 = Experimental Developmental Psychology Class (taught module) Post only
Group 5 = Control Developmental Class (not taught module) Post only
Group 6 = True Control (never had developmental and not taught module) Post only

In addition, paired sample t-tests were conducted on PCIT Quiz scores between

the pre- and post-test groups from each sample and revealed a statistically significant

increase in PCIT Quiz Total Score from pre-test (M=15.56, SD=3.36) to post-test

(M=22.00, SD=4.00, $t(8)$= -5.82, p<.001) for the developmental psychology students who

were taught the pre-parent education module (Group 1). The eta squared statistic (.81)

indicated a large effect size. No statistically significant differences were found for the

control groups who were not taught the pre-parent education module (Groups 2 and 3; see

Table 14 for complete t-test comparisons of changes in group scores from pre- to post-

test).

Table 13. Comparisons of Between Group Differences in PCIT Quiz Scores at Post-test

		Multiple Comparisons		
PCITTOTALPOST	Tukey HSD			
(I) GROUP	(J) GROUP	Mean Difference | I-J|	Std. Error	Sig.
1	2	7.22*	1.74	0.00
	3	9.33*	1.56	0.00
	4	3.84	1.37	0.06
	5	7.71*	1.38	0.00
	6	9.29*	1.26	0.00
2	1	7.22*	1.74	0.00
	3	2.11	1.56	0.75
	4	3.38	1.37	0.14
	5	0.49	1.38	1.00
	6	2.07	1.26	0.57
3	1	9.33*	1.56	0.00
	2	2.11	1.56	0.75
	4	5.49*	1.13	0.00
	5	1.62	1.14	0.71
	6	0.04	0.99	1.00
4	1	3.84	1.37	0.06
	2	3.38	1.37	0.14
	3	5.49*	1.13	0.00
	5	3.87*	0.86	0.00
	6	5.45*	0.65	0.00
5	1	7.71*	1.38	0.00
	2	0.49	1.38	1.00
	3	1.62	1.14	0.71
	4	3.87*	0.86	0.00
	6	1.57	0.68	0.19
6	1	9.29*	1.26	0.00
	2	2.07	1.26	0.57
	3	0.04	0.99	1.00
	4	5.45*	0.65	0.00
	5	1.57	0.68	0.19

*. The mean difference is significant at the 0.05 level.
Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)
Group 4 = Experimental Developmental Psychology Class (taught module) Post only
Group 5 = Control Developmental Class (not taught module) Post only
Group 6 = True Control (never had developmental and not taught module) Post only

Figure 4. Graph of Between-Group Changes in PCIT Quiz Scores from Pre- to Post-test

Estimated Marginal Means of PCITQUIZ
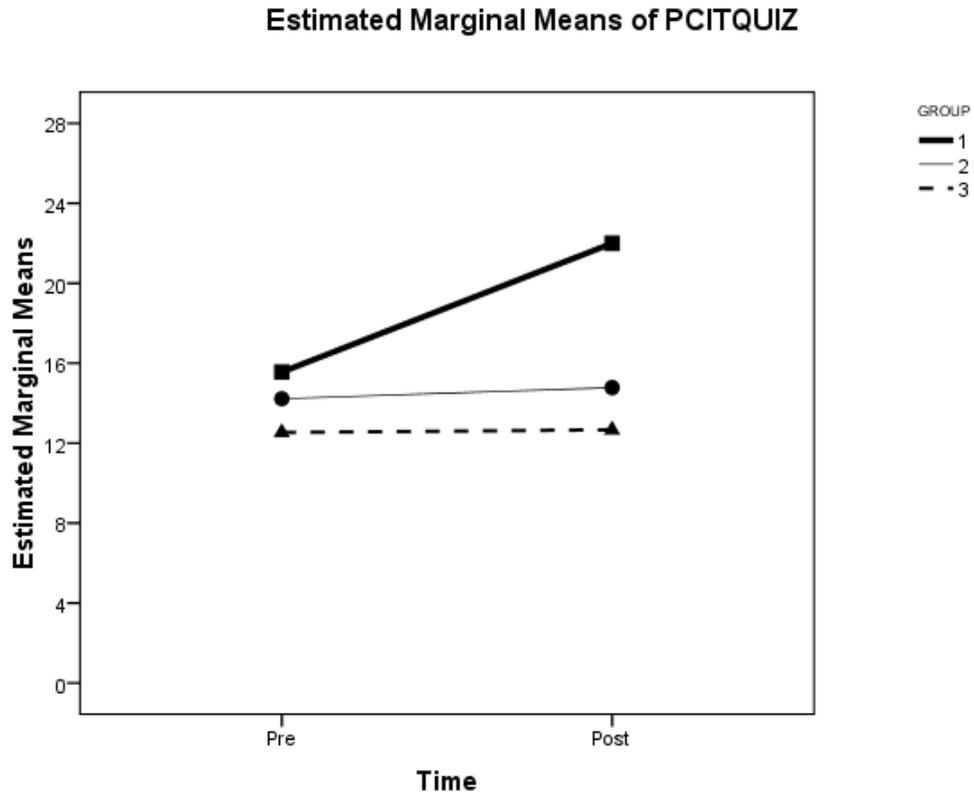
Table 14. Paired Sample t-test Comparison of Changes in PCIT Quiz Scores from Pre- to Post-test

PCIT Quiz Scores			Paired Sample t-test			
GROUPS	N	Mean	Standard Deviation	t	p	eta squared
Group 1 – Pre	9	15.56	3.36	-5.82	0.00	0.81
Group 1 – Post	9	22.00	4.00			
Group 2 – Pre	9	14.22	2.95	0.921	0.38	0.10
Group 2 – Post	9	14.78	3.73			
Group 3 – Pre	15	12.53	3.23	0.147	0.89	0.00
Group 3 – Post	15	12.67	3.44			

To assess further the impact of the pre-parent education module on the changes in PCIT Quiz scores, the researcher conducted an analysis of covariance (ANCOVA) to evaluate whether the PCIT pre-test scores were covariates with the post-test scores. The independent variable was the group (which signified whether participants were taught the education module or not) and the dependent variable consisted of the scores on the PCIT Quiz at post-test. The investigator used the participants' scores on the PCIT Quiz at pre-test as the covariate in the analysis. Preliminary checks conducted ensured that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate.   After adjusting for pre-test scores, there was still a significant difference between the three groups on post-test scores on the PCIT Quiz [F (2, 29) =15.60, $p<.001$, partial eta squared=.52]. There was also a modest relationship between the pre-test and post-test scores on the PCIT Quiz, as indicated by a partial eta squared of .36.

Hypothesis 3. Exposure to the pre-parent education module will produce significant increases in students' application of behavioral parenting skills (e.g. Praise, Reflection, and Behavior Descriptions) during observed analog role play. To assess the impact of the pre-parent education module on students' knowledge of behavioral parenting skills, the researcher conducted another ANOVA on post-test scores to identify significant group differences in frequencies of observed codes after the pre-parent education module was taught to a select group of students. Because no group differences existed at pre-test, the researcher collapsed all post-test scores together per sample to increase power.   Results of the ANOVA revealed significant differences in labeled praise

54

[$F_{(2, 17)} = 16.60$, $p < .001$, eta squared $= .69$] and unlabeled praise [$F_{(2, 17)} = 6.19$, $p = .01$, eta squared $= .45$] (See Table 15 for descriptive statistics of DPICS Codes post-module frequencies). The researcher also conducted post hoc analyses to examine the nature of the significant differences, results indicated that students who were taught the pre-parent education module (Groups 1 and 4) used labeled and unlabeled praise significantly more frequently than students who were not taught the module (Groups 2, 3, 5, and 6; see Table 16 for between group comparisons of codes with significant differences). No additional within-group analyses were conducted on the DPICS codes because only one participant completed both pre- and post-module observation tasks.

Table 15. Description of Group Performances on Post-module DPICS Codes

DPICS III Codes Post		N	Mean	Std. Deviation	Std. Error
		Descriptives			
Neutral Talk	1	5	24.40	12.48	5.58
	2	5	25.40	13.54	6.05
	3	8	29.88	15.62	5.52
	Total	18	27.11	13.67	3.22
Behavior	1	5	0.40	0.89	0.40
Description	2	5	0.20	0.45	0.20
	3	8	0.00	0.00	0.00
	Total	18	0.17	0.51	0.12
Reflective	1	5	1.80	2.17	0.97
Statement	2	5	1.40	1.14	0.51
	3	8	1.38	1.51	0.53
	Total	18	1.50	1.54	0.36
Labeled Praise	1	5	2.80	1.30	0.58
	2	5	0.40	0.89	0.40
	3	8	0.13	0.35	0.13
	Total	18	0.94	1.43	0.34
Unlabeled Praise	1	5	4.80	2.17	0.97
	2	5	0.80	1.10	0.49
	3	8	2.38	1.92	0.68
	Total	18	2.61	2.30	0.54
Question	1	5	12.40	4.34	1.94
	2	5	12.20	8.26	3.69
	3	8	11.25	7.94	2.81
	Total	18	11.83	6.84	1.61
Negative Talk	1	5	1.00	1.73	0.77
	2	5	1.40	1.95	0.87
	3	8	4.13	5.11	1.81
	Total	18	2.50	3.82	0.90
Direct Command	1	5	0.80	1.79	0.80
	2	5	1.80	2.17	0.97
	3	8	4.13	4.52	1.60
	Total	18	2.56	3.54	0.83
Direct Command	1	5	0.00	0.00	0.00
No Opportunity to Comply	2	5	0.60	0.89	0.40
	3	8	0.88	1.13	0.40
	Total	18	0.56	0.92	0.22
Indirect Command	1	5	1.00	0.71	0.32
	2	5	4.40	6.69	2.99
	3	8	3.63	4.66	1.65
	Total	18	3.11	4.64	1.09
Indirect Command	1	5	0.40	0.89	0.40
No Opportunity to Comply	2	5	2.60	2.51	1.12
	3	8	1.50	1.20	0.42
	Total	18	1.50	1.72	0.41

Group 1 = All Developmental Psychology Students who were taught module (Groups 1 and 4)
Group 2 = All Developmental Psychology Students who were not taught module (Groups 2 and 5)
Group 3 = All No Developmental Psychology Students who were not taught module (Groups 3 and 6)

Table 16. Post-hoc Comparisons of Between Group Differences in DPICS at Post-test

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Interventiongroup	(J) Interventiongroup	Mean Difference (I-J)	Std. Error	Sig.
Labeled Praise	1	2	2.40	0.54	0.00
		3	2.68	0.49	0.00
	2	1	-2.40	0.54	0.00
		3	0.28	0.49	0.84
	3	1	-2.68	0.49	0.00
		2	-0.28	0.49	0.84
Unlabeled Praise	1	2	4.00	1.15	0.01
		3	2.43	1.04	0.08
	2	1	-4.00	1.15	0.01
		3	-1.58	1.04	0.31
	3	1	-2.43	1.04	0.08
		2	1.58	1.04	0.31

Group 1 = All Developmental Psychology Students who were taught module (Groups 1 and 4)
Group 2 = All Developmental Psychology Students who were not taught module (Groups 2 and 5)
Group 3 = All No Developmental Psychology Students who were not taught module (Groups 3 and 6)

Hypothesis 4. Exposure to developmental psychology course material will significantly increase students' knowledge of child development. To assess the impact of developmental psychology course material on students' knowledge of child development, the researcher conducted an ANOVA on post-test scores on the KCDI to identify significant differences between groups on the Total Score at post-test. The independent variable was the group (which signified whether participants were taught the developmental psychology course material or not), and the dependent variable consisted of the scores on the KCDI Total Score at post-test. The researcher used participants' year in college as the covariate in the analysis. Preliminary checks conducted ensured that there was no violation of the assumptions of normality, linearity, homogeneity of

57

variances, homogeneity of regression slopes, and reliable measurement of the covariate. After adjusting for year in college, there was still a significant difference between the six groups on post-test scores on the KCDI Total Score [F (5, 293) =2.81, p=.017, partial eta squared=.05]. There was no significant relationship between year in college and post-test scores on the KCDI Total Score, as indicated by a partial eta squared of .002.

Because year in college did not have a significant relationship with the KCDI Total Score, the researcher also conducted post hoc analyses, with year in college removed from the model, to examine the nature of the significant differences between the groups. Results indicated a significant difference between Group 5 (students in "control" developmental psychology class who completed study measures at post-test only) and 6 (students who have never taken developmental psychology and only completed study measures at post-test), with Group 5 performing significantly better on the KCDI (See Table 17 for descriptive statistics of KCDI post-module scores and Table 18 for complete between group comparisons).

Table 17. Description of Group Performances on Post-module KCDI

KCDI	Group	N	Descriptives Mean	Std. Deviation	Std. Error	Mean % Correct
Total Score	1	9	42.22	4.79	2.26	75.39
	2	9	42.78	7.69	2.26	76.39
	3	15	36.73	9.18	1.75	65.59
	4	38	40.84	6.04	1.10	72.93
	5	35	41.77	4.33	1.15	74.59
	6	194	37.99	7.10	0.49	67.84

Group 1 = Experimental Developmental Psychology Class (taught module)
Group 2 = Control Developmental Class (not taught module)
Group 3 = True Control (never had developmental and not taught module)
Group 4 = Experimental Developmental Psychology Class (taught module) Post only
Group 5 = Control Developmental Class (not taught module) Post only
Group 6 = True Control (never had developmental and not taught module) Post only

Table 18. Post-hoc Comparisons of Between Group Differences in KCDI at Post-test

Multiple Comparisons

KCDITOTALPOST	Tukey HSD			
(I) GROUP	(J) GROUP	Mean Difference (I-J)	Std. Error	Sig.
1	2	-0.56	3.20	1.00
	3	5.49	2.86	0.39
	4	1.38	2.52	0.99
	5	0.45	2.54	1.00
	6	4.23	2.32	0.45
2	1	0.56	3.20	1.00
	3	6.04	2.86	0.28
	4	1.94	2.52	0.97
	5	1.01	2.54	1.00
	6	4.78	2.32	0.31
3	1	-5.49	2.86	0.39
	2	-6.04	2.86	0.28
	4	-4.11	2.07	0.35
	5	-5.04	2.10	0.16
	6	-1.26	1.82	0.98
4	1	-1.38	2.52	0.99
	2	-1.94	2.52	0.97
	3	4.11	2.07	0.35
	5	-0.93	1.59	0.99
	6	2.85	1.20	0.17
5	1	-0.45	2.54	1.00
	2	-1.01	2.54	1.00
	3	5.04	2.10	0.16
	4	0.93	1.59	0.99
	6	3.78*	1.25	0.03
6	1	-4.23	2.32	0.45
	2	-4.78	2.32	0.31
	3	1.26	1.82	0.98
	4	-2.85	1.20	0.17
	5	-3.78	1.25	0.03

Based on observed means. The error term is Mean Square(Error) = 46.103.

*. The mean difference is significant at the .05 level.

Group 1 = Experimental Developmental Psychology Class (taught module)

Group 2 = Control Developmental Class (not taught module)

Group 3 = True Control (never had developmental and not taught module)

Group 4 = Experimental Developmental Psychology Class (taught module) Post only

Group 5 = Control Developmental Class (not taught module) Post only

Group 6 = True Control (never had developmental and not taught module) Post only

In addition, the investigator conducted paired sample *t*-tests on KCDI Total scores between the pre- and post-test groups from each sample. Results of the paired sample *t*-tests revealed no statistically significant increase in KCDI Total Score from pre-test to post-test for any of the groups.

To assess further the impact of the developmental psychology course material on the changes in KCDI Total scores the researcher conducted an analysis of covariance (ANCOVA) to evaluate whether the KCDI pre-test scores were covariates with the post-test scores. The independent variable was the group (which signified whether participants were taught the developmental psychology course material or not), and the dependent variable consisted of the scores on the KCDI Total Score at post-test. Preliminary checks conducted ensured that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. After adjusting for pre-test scores, there was not a significant difference between the three groups on post-test scores on the KCDI [F (2, 29) =.321, *p*=.728, partial eta squared=.02]. There was also a small relationship between the pre-test and post-test scores on the KCDI, as indicated by a partial eta squared of .16.

Hypothesis 5. Post-test scores on the PCIT Content Quiz, KCDI Total Score, and DPICS-III codes (praise, reflective statements, and behavior descriptions) will significantly predict participant membership in intervention vs. no intervention and developmental psychology vs. no developmental psychology groups. To assess the ability to predict membership into intervention and no intervention and developmental psychology and no developmental psychology groups using post-test scores, binary

logistical regressions were conducted. The DPICS-III codes were excluded from these

analyses because the number of observations was insufficient to be adequately tested.

The first binary logistic regression used PCIT Quiz and KCDI Total post-test

scores to estimate the odds that a given participant was from an intervention group

(Groups 1or 4; coded 1) or a no intervention group (Groups 2, 3, 5, or 6; coded 0). Table

19 lists the β coefficients for the predictor variables. Both of the predictor variables

yielded coefficients that significantly improved the model beyond what is expected by

chance. The positive sign of the PCIT Quiz coefficient indicates that higher scores are

associated with higher logits of group, thus membership in the intervention group. The

negative sign of the KCDI Total Score coefficient indicates that higher scores are

associated with smaller logits of group, thus membership in the no intervention group.

The likelihood ratio test yielded a $\chi2$ (2) = 88.216 (p<0.001). The Hosmer-Lemeshow test

produced a $\chi2$ (8) greater than the critical value of $p = 0.05$ ($p = 0.739$). Failure to reach

statistical significance on this test implies that the model fits the data at an acceptable

level (Peng, Lee, & Ingersoll, 2002). The Exp(β) indicates the odds of a participant being

classified as belonging to the intervention or no intervention groups for a given change in

the post-test score (see Table 20 for more complete results of regression analysis).

Exp(β)'s < 1 indicate a decrease in the probability of being classified as belonging to the

intervention group while Exp(β)'s > 1 indicate an increase in the probability of being

classified as belonging to the intervention group. Table 20 shows the classification result

for the logit model; almost forty-seven percent of the intervention group members are

correctly classified while ninety-seven percent of the no intervention group members are

classified correctly. The total percentage classified correctly is somewhat better (89

percent versus 84 percent) than would occur from predicting group membership by using

the most frequent category (no intervention).

Table 19. Coefficients of Logistic Regression Analysis Predicting Intervention Group

		Variables in the Equation					
Logistic Regression		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-1.68	0.16	112.30	1.00	0.00	
	PCITTOTALPOST	0.50	0.07	47.21	1.00	0.00	1.65
Step 1a	KCDITOTALPOST	-0.11	0.04	6.94	1.00	0.01	0.89
	Constant	-5.19	1.41	13.53	1.00	0.00	0.01

a. Variable(s) entered on step 1: PCITTOTALPOST, KCDITOTALPOST.

Table 20. Logistic Regression Analysis of Intervention vs. No Intervention Group

Tests	χ^2	df	P				Classification Table	
Likelihood ratio	18.853	5	0.002	Observed	Predicted		Percent Correct	
Hosmer-Lemeshow	7.031	7	0.426		Male	Female		
Cox-Shell R^2	0.222			Male	11	18	37.9	
Nagelkerke R^2	0.302			Female	5	41	89.1	
McFadden R^2	0.188			Overall			69.3	

The second binary logistic regression used PCIT Quiz and KCDI Total post-test

scores to estimate the odds that a given participant was from a developmental psychology

group (Groups 1, 2, 4or 5; coded 1) or a no developmental psychology group (Groups 3

or 6; coded 0). Although the PCIT Quiz score yielded a coefficient that indicated a

statistically significant improvement on the model, the Hosmer-Lemeshow test of

goodness-of-fit was significant (p=.014) indicating that the model was not a good fit for

the data. The KCDI Total and PCIT Quiz scores at post-test were not significant

predictors of membership in developmental psychology vs. no developmental psychology

groups.

<u>Reliability Change Index Analysis</u>

The investigator conducted a post-hoc analysis to examine the reliability of the

changes in students' knowledge of behavioral parenting skills. The researcher calculated

Reliable Change Index (RCI) scores for the outcome variable, PCIT Content Quiz scores,

which demonstrated significant change in the earlier analyses. Calculation of an RCI is

based on the standard deviation of the sample and the reliability coefficient of the given

outcome measure and is calculated by dividing the difference score for a given

participant by the standard error of the difference score (Jacobson et al., 1999). RCIs that

are greater than 1.96 are considered to be of adequate magnitude to constitute reliable

change. An RCI analysis improves one's understanding of treatment outcome results,

because examining statistical significance alone does not account for the inherent

variability in self-report measures over time (Jacobson et al., 1999). Specifically,

participants who complete the same measure at two different time points are likely to

have scores that vary somewhat based on the reliability of the measure itself. Analyzing

RCIs allows researchers to determine the proportion of participants who report a level of

change that cannot be accounted for by the tendency of scores to change over time as a

function of the measure used rather than of the treatment.

For the present study, an RCI score was calculated for the PCIT Content Quiz

scores.   The researcher calculated pre-post difference scores for each treatment

completer and compared those difference scores to the RCIs to determine how many

participants achieved reliable change for this measure. Of the total sample, 9 participants

who were taught the pre-parent education module and participated in data collection at

pre- and post-test time points were included in the analysis. Of those participants who

were included in the analysis, 44.4 percent ($n = 4$) achieved a reliable level of change on

the PCIT Content Quiz. Results of the RCI analysis are presented in Table 21 below.

Table 21. Reliable Change Indices for PCIT Content Quiz

PCIT Content Quiz	Freq. (n)	Percent (%)
Non-Reliable Change	5	55.6
Reliable Change	4	44.4

IV. DISCUSSION

The current study examined the effectiveness of a pre-parent education module in increasing parenting knowledge and use of effective parenting behaviors in undergraduate non-parents enrolled in a developmental psychology class. Additionally, this study investigated the impact that the developmental psychology course material had on students' knowledge of child development.

The long-range goal of the study is to develop a prevention program; the short-range goal was to demonstrate that teaching undergraduate nonparents about parenting skills can increase their knowledge and use of those skills. Results of the current study demonstrate preliminary support for the ability to effect change in undergraduate students' knowledge and use of effective parenting behaviors. However, the data provide limited support for the significant increase in knowledge of child development from exposure to the developmental psychology course material.

Clinical Implications

The results of the current study provide preliminary support for a low-cost, short term classroom-based parent training module. However, these results provide limited support for the use of a developmental psychology class as the medium in which to implement the intervention as implemented in this study. A developmental psychology course may be the appropriate medium in the future if there is sufficient time for coaching included in the design. Based on the outcome measures, this investigation was

not as successful as predicted but it is a promising first step; participants were able to learn the PCIT quiz material. A positive outcome from this study was the development and exploration of the psychometric properties of a PCIT quiz with a large group of undergraduate students. No other quiz on PCIT content is available to measure participant's knowledge of the didactic content (PCIT Training Committee, 2009). Despite some psychometric problems, the quiz was able to predict group membership.

As outlined in the introduction, knowledge of child development is important in the prevention of child maltreatment and child disruptive behavior disorders. Increasing individual's knowledge of child development is posited to help parents have more realistic expectations of children's behavior and cognitive abilities and increase their ability to parent effectively (Azar et al., 1984; Rivara & Howard, 1982; Stevens, 1984).

There is much room for further study related to prevention of child abuse and child behavior disorders by teaching individuals about parenting skills prior to their becoming parents. This study was the first step in developing an educational module that could be use to teach students enrolled in a class related to child and adult development about parenting. This study provided evidence to suggest that it was in fact feasible and some change did occur; future studies can now explore how and what to teach to maximize beneficial and effective change in individuals as a means to change societal outcomes.

Prevention researchers share the objective to prevent child maltreatment before it starts (Guterman, 1997), thus there has been an increasing push for early intervention and primary prevention (Mitchel & Cohn Donnelly, 1993). One of the most recent calls is for

a population-wide strategy that increases the impact of prevention programs by reaching a larger portion of the child/family population (Sanders, Turner, & Markie-Dadds, 2002; Spoth, Kavanagh, & Dishion, 2002). Sanders and colleagues have implemented the Triple P-Positive Parenting Program for numerous years and have developed it to be an evidence-based child and family intervention aimed at preventing child disruptive behavior disorders and child maltreatment (Sanders & Prinz, 2005). The Triple P is designed as a multi-level parenting intervention targeting children from infancy through adolescents and from parenting information campaigns to intense behavioral family intervention (Sanders et al., 2002). Researchers argue that universal prevention programs can provide useful information to parents prior to experiencing a problem just as birthing classes are useful for mothers who may be at risk for a difficult delivery (Heinrichs, Bertram, Kuschel, & Hahlweg, 2005). While universal prevention programs may likely de-stigmatize and normalize parent training (Heinrichs et al., 2005), none of the proposed universal prevention programs target individuals prior to parenthood. The current study has taken the first step to extend the call for universal prevention to also target individuals who may transition to parenthood at any time but have not yet.

The data from the current study do not provide a clear picture about the amount of knowledge of child development that is gained from a lifespan developmental psychology class or what that knowledge adds to a person's knowledge about parenting. The instability of the KCDI and the less than ideal timing of the pre-test measurement make it difficult to truly understand what the students in this sample were able to take away from the developmental psychology classes. Course instructors believe that exams

are able to evaluate what information students' are learning, however, future studies could further evaluate how long that information stays with them by conducting follow up assessment from students after the course is completed. Additionally, having an objective assessment tool that is standardized may be an alternative method of investigating what information is retained from students with regard to knowledge of child development, however more work needs to be completed to develop a reliable measure.

Results from this study speak to the important distinction between learning material from a didactic lecture and applying knowledge in a different context. The literature suggests that experiential learning opportunities in developmental psychology courses may serve to increase the value and interest students have for learning the course material (Clements, 1995). It is likely, then, that experiential learning helps students consolidate knowledge and apply information and skills to real-world settings (Clements, 1995; Lundy, 2007). However, there is limited support to suggest that the experiential component from this study was effective. Although the graduate student instructor allowed time for demonstrations and role plays while teaching the module, students may not have perceived that as true experiential learning. Future studies could include an experiential or service learning component in which the students are taught the parenting skills and coached to use the skills with a child (e.g., volunteer to work with children at a daycare setting).

Additionally, the investigator posited that the observed role play task would serve as an opportunity to apply skills; however, students may not have perceived the research

assistant was accurately portraying a child. Informal communication from students who participated in the study indicated that role playing with a peer who was in some of their classes was uncomfortable which may have contributed to the low number of participants who returned to complete the observation at post-test.

The results of the current study also provide only preliminary and limited support for the ability to develop undergraduate non-parents' use of effective parenting behaviors. Unfortunately, the number of observations was quite low which makes generalizability of the findings quite difficult. In addition, the nature of the changes in the behaviors of participants who were taught the pre-parent education module were less than ideal, particularly as it relates to reducing questions, commands, and negative statements. However, questions are hard for parents, too, even after they go through the PCIT didactic (Hembree-Kigin & McNeil, 1995). Although the results of the observation were somewhat disappointing, they are quite consistent with parents who seek out PCIT treatment for child disruptive behavior disorders. The consistency of the findings are encouraging because the parents that seek out PCIT know their child, typically have motivation for treatment, and have ample opportunity to practice, yet have similar difficulty obtaining the skills. It is possible that the participants in the education module would have demonstrated more of the targeted parenting skills if they had more individual coaching or more extended opportunities for coaching. Individual coaching is considered to be one of the core features of PCIT (PCIT Training Committee, 2009). Coaching allows the instructor or therapist an opportunity to provide reinforcement of parenting skills and shape the parent or student's behavior (Borrego & Urquiza, 1998).

70

The investigator attempted to incorporate coaching during the practice time set aside during each of the module days, however given the large number of students the instructor was not able to coach each student sufficiently. Although the changes in behavior of participants who were taught the module were not as predicted, informal analysis of the one participant who did complete the observation at both pre- and post-test suggested that this participant increased her use of praise--and issued fewer indirect commands--from pre to post intervention assessment.

The results of this study indicate that students who received the two-lecture series demonstrated an increase in parenting knowledge as measured by increased scores on the PCIT Quiz. The Solomon Four design of the study allowed for analysis of the data that indicated that increases in PCIT Quiz scores were not solely from exposure to the quiz at pre-test (Campbell & Stanley, 1966; Probst, 2003).

Participants who were taught the module and responded to pre- and post-test measures (Group 1) performed significantly better than participants who were also taught the module but only responded to measures at post-test (Group 4) which suggests that responding to the pre-test may have primed participants to learn or recall the information from the pre-parent education module. Research in the teaching of psychology indicates that quizzing students on material prior to teaching that material may serve to cue students to attend to important information (Nevid & Mahon, 2009) and enhance their understanding of new information (Nevid & Lampmann, 2003; Scerbo, Warm, Dember, & Grasha, 1992). These results have significant implications for training parents and

71

providers in PCIT; giving quizzes prior to teaching the didactic information may cue parents and providers to attend to and better retain the information taught.

Results of this study indicate that undergraduates who are not yet parents are open to learning about parenting strategies. The finding that undergraduates are open to learning about parenting is consistent with research that exposed students in a developmental psychology course with videos about parenting to increase their understanding of the variety of parenting perspectives (Harper & Silvestro, 1983). There are several things to change for the next study including more in-depth material (e.g., connecting the PCIT skills to the behavioral principles outlined in the introduction during the module), better timing of the assessment (e.g., giving a measure of child development at the beginning of the course), use of more psychometrically sound measurement, more guided practice in class, targeting a smaller group of students, providing greater incentives to students for participating in the observation, and use of a real child. It would also be interesting to teach students enrolled in a class related specifically to child development or behavioral principles and those who are enrolled in a course that does not focus on those skills to compare learning.

One of the long-range aims of this study was to provide information to young adults about parent training so that they would be informed about treatment options should one of their future children need intervention services. Because the present study did not include a longitudinal design, this long-term aim of the study was not specifically addressed. Anecdotally, however, one student with an over-active young child independently reported to the investigators that she completed PCIT at the AUPSC after

hearing about the treatment approach in class (the student was in the pre-parent education module condition).

Limitations and Future Directions

The current study yielded results that are promising for the development of a pre-parent education module. Although this demonstration project yielded some promising results, there were quite a few methodological limitations to the current study in the areas of measurement, data collection, sample size, and implementation of the education module. Additionally, it was beyond the scope of the current study to conduct follow-up assessment of the participants.

In terms of measurement, the study measures proved to be less reliable than anticipated or ideal. The low stability of KCDI subscales interfered with additional data analysis on the specific aspects of child development knowledge reported by the participants at the assessment points. The KCDI also was not a very relevant measure to use for a lifespan development course, but it was the best tested measure of knowledge of child development available. In addition, the preliminary analyses on the PCIT Quizzes indicate that more work needs to be done to create a measure that can address all aspects of the PCIT didactic information that researchers and clinicians deem important for parents (and non-parents) to learn. Further research needs to be conducted to create better, or fine tune the existing, measures of knowledge of child development and knowledge of parenting skills.

In terms of data collection, the study's complex design made it necessary to have multiple steps of data collection which may have made it difficult to recruit participants

73

as efficiently and evenly across groups. The multiple step process of data collection also may have been a deterrent for participants who had access to other less complicated studies to participate in for extra credit (Prinz, Smith, Dumas, Laughlin, White, & Barron, 2001). Additionally, the unforeseen difficulties with timing the pre-test data collection interfered with the ability to accurately test pre- to post-test changes in knowledge of child development. The researcher went to great lengths to make sure the sample achieved was as random a sample as possible, however randomizing participants at pre-test to complete measures unrelated to the current research study lowered the potential number of pre-post participants in all of the groups.

The uneven sample sizes for this study resulted in significant limitations to the generalizability and stability of the findings. Replication of this study with more even participants per group would add credence to the claims made in the ability to effect change in undergraduate non-parents' parenting knowledge. The sample sizes of the observations were significantly lower than anticipated and are likely due to several reasons including the limited time available to use the AUPSC space in which the observations were conducted, the limited time periods when the research assistants conducting the observation were available, and the limited availability of participants to complete the observations.

In terms of teaching and practicing, the short time period in which the pre-parent education module was delivered with a large class audience (approximately 130 students) provided less than ideal amounts of individual coaching and engagement in learning the material. The material presented in the pre-parent education module in two 75-minute

74

class periods is the same material that is presented to parents over 10-14 sessions that can range from 60 to 120 minutes (Greco et al., 2001; McNeil et al., 2005). Particularly as it relates to using the skills taught, the graduate student who taught the module noticed that students did not practice the entire time allotted for practice during the module. The lack of coaching may have reduced the amount of behavior change due to limited reinforcement of desirable behavior (Borrego & Urquiza, 1998). It is possible that students were not as engaged in the process because they are not yet parents (Harper & Silvestro, 1983), they may have been more focused on immediate pressures and less concerned about material that was not going to be on a test. Future studies in which the module is taught in smaller groups or subsamples are provided with coaching to further enhance their use of the skills should help to increase the efficacy of the education module.

Alternative methods of teaching could be a valuable component to a successful pre-parent education module. For example, future studies could include a service learning or experiential learning component to the developmental psychology course in order to allow students to apply the material they were learning (Clements, 1995; Kogan & Kellaway, 2004; Lundy; 2007; McClusky-Fawcett & Green, 1992). Future studies could also include alternative methods of presenting the module material, for example the information may be presented with video examples (Harper & Silvestro, 1983) or computer simulations (Derochers, House, & Seth, 2001). Future pre-parent training studies may also attempt to engage individuals in the process with motivational interviewing or allowing students to seek out the information in the form of a group.

Previous research suggests that pregnant women are quite receptive to learning new skills to prevent deleterious outcomes with their child because they are at the transition point towards parenthood (Holden, Willis, & Corcoran, 1992; Larson, 1980). Because research with non-parents is scarce, there is little information available about young adults and their willingness to learn about parenthood prior to a transition period like pregnancy.

Ultimately, this study was not designed to be longitudinal, so the largest limitation is that there is no way to know what these students will actually do when faced with parenthood. A future study could attempt to follow a group of nonparents who have been taught parenting skills to see what they actually do when they become parents. None of the previous research on non-parents is longitudinal. There are studies that establish baseline data during pregnancy and follow new mothers over time with home visitation programs and extra support (Barth, 1991; Olds, Henderson, Chamberlin, & Tatelbaum, 1986; Olds & Kitzman, 1990). The results of the longer term prevention studies are mixed in that some parents respond well and obtain positive results from the intervention (Caruso, 1989; Center on Child Abuse Prevention Research, 1996) whereas others have no effect (Barth, 1991; Marcenko & Spence, 1994) or have negative effects (Brayden et al., 1993). Therefore, future research will need to focus on those factors that improve the efficacy of pre-parent training programs.

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APPENDICES

APPENDIX A

Demographic Questionnaire

Demographic Questionnaire

Question 1 (DQ1) : Your age
Settings: Free-entry response (display length: 5).

1. [Free-entry response]

Question 2 (DQ2) : Your gender
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Male

2. Female

Question 3 (DQ3) : Your ethnicity
Settings: Multiple choice question -- *more than one* choice may be selected. Choices are displayed vertically (down the page).

1. American Indian or Alaskan Native

2. Asian or Pacific Islander

3. Black, not of Hispanic origin

4. White, not of Hispanic origin

5. Hispanic

Question 4 (DQ4) : Your relationship status
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Single

2. Married

3. Living with partner

4. In a relationship

Question 5 (DQ5) : Your country of origin
Settings: Free-entry response (display length: 50).

1. [Free-entry response]

Question 6 (DQ6) : Region of the United States in which you were raised
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. North East

2. South East

3. Midwest North

4. North West

5. South West

6. Midwest South

7. Raised outside U.S.

Question 7 (DQ7) : Year in college
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. First

2. Second

3. Third

4. Fourth

5. Fifth

6. Beyond Fifth

7. Additional Degree

Question 8 (DQ8) : Major of study
Settings: Free-entry response (display length: 50).

1. [Free-entry response]

Question 9 (DQ9) : Family yearly income while growing up
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Less than $15,000

2. $15,000 - $24,999

3. $25, 000 - $34,999

4. $35,000 - $49,999

5. $50,000 - $74,999

6. $75,000 - $99,999

7. $100,000 or more

Question 10 (DQ10) : Number of siblings you have
Settings: Free-entry response (display length: 50).

1. [Free-entry response]

Question 11 (DQ11) : Your birth order
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. First

2. Middle

3. Last

4. Only child

Question 12 (DQ12) : Do you like children
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Not at all

2. I am indifferent

3. Children are tolerable

4. I enjoy children

Question 13 (DQ13) : Do you plan on having children?
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Yes

2. No

Question 14 (DQ14) : Are you currently enrolled in PSYC 2120 (Developmental Psychology)?
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Yes

2. No

Question 15 (DQ14b) : If you answered YES to question #14, who is your Instructor?
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page). Participants may decline to answer this question.

1. Brestan Knight

2. Lee

3. Lambha

Question 16 (DQ14c) : If you answered NO to question #14, have you ever taken a course in Lifespan Development, Human Growth and Development, or Developmental Psychology?
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page). Participants may decline to answer this question.

1. Yes

2. No

Question 17 (DQ15) : Have you ever helped in the raising of a child?
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Yes

2. No

3. Somewhat

Question 18 (Email): In order to link your responses from this part of the study to additional parts of the study and to invite you to participate in additional parts of the study please provide your Auburn University e-mail address.
Settings: Free-entry response (display length: 50).

Question 19 (Grades): Do you grant permission to the primary investigator to gain access to your final grade in PSYC 2120 (Developmental Psychology)for this semester?
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page).

1. Yes

2. No

3. Not enrolled in PSYC 2120 (Developmental Psychology) this semester

If you answered YES/SOMEWHAT to question #17, then please answer the following about the child.

Question 1 (DQ15b) : Your relationship to the child
Settings: Free-entry response (display length: 50). Participants may decline to answer this question.
 1. [Free-entry response]

Question 2 (DQ15c) : Child's current age
Settings: Free-entry response (display length: 5). Participants may decline to answer this question.
 1. [Free-entry response]

Question 3 (DQ15d) : Child's gender
Settings: Multiple choice question -- *only one* choice may be selected. Choices are displayed vertically (down the page). Participants may decline to answer this question.
1. Male
2. Female

Question 4 (DQ15e) : What tasks were you involved in when helping to raise a child?
Settings: Free-entry response (display length: 85). Participants may decline to answer this question.
1. [Free-entry response]

APPENDIX B

PCIT Content Quizzes

CDI Quiz

1. PCIT is an acronym that stands for:
   a. Parents and Children in Training
   b. Proper Child Interaction Therapy
   c. Parent-Child Interaction Therapy
   d. Parent-Child Interest Test

2. Which of the following is an example of the type of praise encouraged in PCIT?
   a. "Excellent!"
   b. "You are awesome!"
   c. "Great job putting your toys away!"
   d. "You are so sweet!"

3. You and a child are playing with toy animals and the child says, "I've got a moo cow." An example of a reflection you could say is:
   a. "You are playing so nicely with your moo cow."
   b. "What comes from cows?"
   c. "I have a goat."
   d. "You do have a brown and white cow."

4. Which of the following should you avoid doing when playing with a child:
   a. Doing what the child is doing.
   b. Asking the child about what they are doing.
   c. Describing what the child is doing.
   d. Being enthusiastic.

5. How often should you practice your PRIDE skills?
   a. 5 minutes a day.
   b. 30 minutes a day.
   c. 5 times a month.
   d. 3 times a week.

6. What does PRIDE stand for?
   a. Peace, Respect, Intellect, Determination, Experience
   b. Positive, Ritual, Independent, Discipline, Education
   c. Praise, Reflect, Imitate, Describe, Enthusiasm
   d. Parents, Redirect, Interaction, Determination, Enthusiasm

7. Which of the following would **not** be an appropriate set of toys to use during a CDI play session?
   a. Mr. Potato Head
   b. Video games
   c. Legos
   d. Farm animals

8. Which of the following **is** an appropriate statement to make during a CDI play session with a child?
   a. "You are using green blocks to build a house."
   b. "Let's play with the animals, ok?"
   c. "The sky is not purple."
   d. "Come play with me."

9. How many phases does PCIT have?
   a. 3
   b. 5
   c. 1
   d. 2

10. Which is **not** a benefit of CDI play sessions?
    a. improves children's self-esteem
    b. enhances children's creativity
    c. enhances the relationship between the parent and child
    d. has a calming effect on the child

11. What does CDI stand for?
    a. Calm Down Instantly
    b. Child's Dependent Initiation
    c. Child Directed Interaction
    d. Concrete Dyad Interaction

12. CDI play sessions should be done:
    a. As a special treat for good behavior.
    b. Every day regardless of how the child has behaved the rest of the day.
    c. Right before the child gets ready for bed.
    d. Once a week regardless of how the child has behaved.

13. A labeled praise is preferred over an unlabeled praise because:
    a. It tells the child exactly what they did that was good.
    b. It sounds nicer.
    c. It is shorter.
    d. It is more enthusiastic.

14. When playing with a child during a CDI session it is important for you to:
    a. Lead the play.
    b. Make sure the focus is on what you are doing.
    c. Show you are interested by asking questions.
    d. Let the child know what they are doing is interesting.

CDI Answer Key

1. C
2. C
3. D
4. B
5. A
6. C
7. B
8. A
9. D
10. B
11. C
12. B
13. A
14. D

PDI Quiz

1. Which of the following is **not** a key component to PDI?
   a. Parent consistency
   b. Child compliance
   c. Parent predictability
   d. Child composure

2. Which of the following is an example of an effective command?
   a. "Don't put the airplane on the table."
   b. "Why don't you put the blocks in the cabinet?"
   c. "Hand me the red block."
   d. "Let's play with Mr. Potato Head."
   e. "Watch out."

3. You and a child are playing with toy animals and the child starts throwing the animals at the wall. An appropriate parent response encouraged by PCIT would be:
   a. Saying to the child, "Stop throwing the animals".
   b. Turning away from the child and saying, "I am having so much fun playing gently with all the animals at the table."
   c. Taking all of the animals away from the child and telling the child, "Sit quietly while I play nicely with the animals."
   d. Smacking the child on the hand and saying, "We do not throw toys."

4. Which of the following is **not** a preferred form of discipline in PCIT:
   a. Ignoring a child's inappropriate behavior.
   b. Putting a child in time-out for not doing what they were told.
   c. Spanking a child for inappropriate behavior.
   d. Telling a child to do something that is opposite of the negative behavior they are exhibiting.

5. How long should you place a child in time-out?
   a. As long as it takes for them to sit quietly.
   b. 3 minutes no matter what kind of noise they are making at the end.
   c. 30 minutes no matter what kind of noise they are making at the end.
   d. 2 minutes and 55 seconds with at least 5 seconds of quiet at the end.

6. How long should a parent wait after giving a command before determining if the child has complied?
   a. 5 seconds
   b. 20 seconds
   c. 1 minute
   d. 5 minutes

7. If the child does not comply with what the parent said in an appropriate amount of time, what should the parent do?
   a. Put them directly in time-out.
   b. Spank them.
   c. Give them two choices.
   d. Ask them why they did not do what you said.

8. If the child complies right away with what the parent said, what should the parent do?
   a. Praise the child for complying quickly.
   b. Nothing.
   c. Give the child something else to do.
   d. Give the child two choices.

9. Which of the following is something spanking can teach a child?
   a. What to do.
   b. Hitting is an appropriate form of conflict resolution.
   c. Why what they did was wrong.
   d. That they are an important person.

10. Which is **not** a benefit of PDI play sessions?
   a. Teaches children to obey parents in a fun environment
   b. Teaches parents how to consistently discipline their child
   c. Allows the parents to use their PRIDE skills with their child
   d. Increasing the child's creativity.

11. What does PDI stand for?
   a. Proper Discipline Instantly
   b. Parent Dependent Initiation
   c. Parent Directed Interaction
   d. Persistent Directing Individual

12. After a child has sat in time-out, they are expected to
   a. Comply with the original command given before the time-out.
   b. Continue playing right away.
   c. Apologize for being bad.
   d. Yell and scream at the parent.

13. If a child is playing nicely and appropriately, it is important for parents to
    a. Leave them alone so that they will continue.
    b. Praise the child for playing nicely.
    c. Give them a command to do something the parent wants.
    d. Ask them why they can't play like this all the time.

14. When playing with a child during a PDI session it is important for you to:
    a. Le t the child do whatever they want.
    b. Avoid giving commands.
    c. Make sure the child complies with any command you give.
    d. Let the child know that they have no control.

PDI Answer Key

1. D
2. C
3. B
4. C
5. D
6. A
7. C
8. A
9. B
10. D
11. C
12. A
13. B
14. C

APPENDIX C

Description of the DPICS III Codes

Description of the DPICS III Codes

1. Neutral Talk (TA) – statements that introduce information about people, objects, events, or activities, or indicate attention to the child, but do not clearly describe or evaluate the child's current or immediately completed behavior.

2. Behavioral Description (BD) – non-evaluative, declarative sentences or phrases in which the subject of the sentence is the child and a verb describes the child's ongoing or immediately completed (< 5sec.) observable verbal or nonverbal behavior.

3. Reflective Statement (RF) – a declarative statement that has the same meaning as a preceding child verbalization. The reflection may paraphrase or elaborate on the child's verbalization but may not change the meaning of the child's statement or interpret unstated ideas.

4. Labeled Praise (LP) – a verbalization expressing a positive evaluation of a specific behavior, activity, or product of the child.

5. Unlabeled Praise (UP) – a verbalization expressing a positive evaluation of the child, an attribute of the child, or a nonspecific activity, behavior, or product of the child.

6. Question (Q) – verbal inquiries that are distinguishable from declarative statements by having a rising inflection at the end and/or by having the sentence structure of a question. Questions request an answer but do not suggest that a behavior is to be performed by the child. The two types of questions below are combined to create the Question Category.

   a. Descriptive/Reflective Question (DQ) – a descriptive or reflective component or acknowledgement expressed in a question form. Requires only a simple acknowledgement in response (i.e., "yes" or "no" response).

   b. Information Question (IQ) – questions that require specific information from the other person other than a simple acknowledgement.

7. Negative Talk (NTA) – a verbal expression of disapproval of the child or the child's attributes, activities, products, or choices. Also includes sassy, sarcastic, rude, or impudent speech.

8. Command (C) – statements in which the parent directs the vocal or motor behavior of the child. Commands may be direct or indirect in form; the two types of commands described below are combined to create the Command Category.

    a. Indirect Command (IC) – a suggestion for a vocal or motor behavior to be performed that is implied or stated in question form.

    b. Direct Command (DC) – declarative statements that contain an order or direction for a vocal or motor behavior to be performed and indicate that the child is to perform this behavior.

APPENDIX D

CDI SCRIPT

CDI Didactic Script

Rationale for bringing PCIT to class

- PCIT is what we do! We are passionate about it and we think that sharing some of the principles with our students can give them a perspective on what we teach parents when they come to therapy.

- We have noticed from talking with parents that many of them got information about how to take care of a baby, but had no idea what to expect from their children as they progressed into toddler hood and early childhood. We wanted to share some tips that would hopefully help you when you are faced with parenthood.

- We do recognize that not all of you will become parents in the future, however most of us interact with children at some point in our lives (e.g. nieces/nephews, in an airport, at a doctor's office, neighbors, etc.) and these principles could help alleviate some of the "annoying" behaviors that some children exhibit and make your experience being around them more pleasant or at least tolerable.

Provide a brief introduction to the CDI Teaching Session:

- Explain: Today, I will be giving you a number of rules to learn about how to increase positive interactions with children. At the end of today's class I will give you a handout describing all that I'll be talking about. Also, please ask any questions you have along the way.

Give students an overall view of the program:

- Explain: Generally, Parent-Child Interaction Training involves two treatment phases – Child Directed Interaction (CDI) and Parent Directed Interaction (PDI). CDI involves teaching parents how to play with their child in a special way, and PDI involves learning a very structured and consistent discipline program. We understand that sometimes parents need to be in control of their child, and get him/her to obey them quickly – and in PDI you will learn some very effective techniques for doing this. Generally, each of the two phases includes one teaching session, five sessions that involve live coaching, and requires daily practice at

116

home. However, I will teach you some basic skills and principles of the two phases over the next two class periods. You will have an opportunity to practice with partners at the end of each class period.

Rationale to why CDI is taught first:

- We find that it is helpful to learn CDI before PDI for several reasons. 1) We want parents to establish a more positive relationship with their child, so that they can more easily focus on the good aspects of each other. During times of high stress, it is easy to lose sight of the positive qualities, and just pay more attention to the negative things. In CDI we want to help reverse this trend. 2) Some of the CDI skills you will be learning are also necessary for PDI. So, we want you to have these skills down pat, so that they are automatic, by the time we get to PDI you won't have so many things to learn. 3) The final reason is that CDI should have a very calming effect on children, which will make it much easier for children to accept the discipline phase.

Provide an overview of CDI:

- CDI is a play situation in which the child is in charge of choosing and leading the activity, while the parent plays along at the child's level. Today, we will be discussing some very specific techniques to use that will make this play time very high quality time for you and a child. Some benefits of CDI are that it often improves children's self-esteem, enhances the relationship between the parent and child, helps to increase children's attention span, makes them less angry, and generally has a calming effect on the child.

- We have found that the best way to help children that are having behavior difficulties is to teach parents how to be play therapist themselves! After all, parents are with their children much of the day, every day - whereas therapists can only see them for one hour a week! So it makes sense that parents are in the best position to be able to help them. Be careful not to sound accusatory of parents, as if they are responsible for their child's negative behavior. But at the same time, give parents the sense that they hold the most power when it comes to changing their child's negative behavior.

- Today we will be discussing the rules to CDI. I will be giving you a lot of information that at first may seem overwhelming, but keep in mind that I will be giving you handouts to review and time to practice the techniques at the end of class.

Discuss the reasons for and the importance of the 5-minute daily practice:

- I certainly don't expect that you or anyone else would be able to sustain this high quality, condensed therapeutic time every time you interact with a child. Since it does require a significant amount of time and energy, we have found that people

who try to spend longer than the 5 minutes each day can actually burn-out on CDI. I recognize that many of you do not interact with children on a daily basis, but it can be helpful and fun to practice with friends, siblings, nieces/nephews, and pets in order to become more comfortable with the skills. We don't want you to get burned out, so we ask that you practice everyday for only 5-minutes a day.

- Emphasize that whether it applies to the students or not, that in general when people use these techniques with a child, it is important to practice daily and at a time that the child is normally well-behaved. Then continue to explain:

- This practice time is absolutely critical to treatment progress, although 5 minutes doesn't sound like a lot of time, it really can be therapeutic and highly effective for creating a closer bond between parent and child.

- One more thing to keep in mind about the special playtime is that it should take place everyday, and is not a privilege for good behavior. In fact, the special playtime can be most effective on those days that a child's behavior is poor.

Discuss what toys are appropriate for CDI:

- Toys that are appropriate for CDI are those that lead to creative construction, and do not have structured rules to follow. Toys that should be avoided during CDI are ones that encourage rough play (balls), aggressive play (guns), and messiness (paints). These kinds of toys are fine for other times, but for CDI we want to use ones that encourage construction and decrease aggression. Some good examples of acceptable toys include Mr. Potato Head, building blocks, toy farm with animals, and legos.

- Also, to help keep your 5-minute special playtime special and unique, it is good to choose a toy that will only be played with during this time. This makes it somewhat of a special toy, and will increase the positive feelings associated with this playtime.

Introduction to the rules of CDI:

- Inform the students that you will now be explaining the rules of CDI, which include behaviors that we want parents to avoid doing, and behaviors that we want the parent to increase or start doing. Inform the students that we will first be discussing the behaviors that we would like for them to increase or begin, then later we will discuss the behaviors that we want them to avoid. Remind the students that there is no need to memorize everything – they will receive handout at the end of the class.

<u>Introduce the PRIDE skills</u>:

- Well, now that we have talked about the reasons why this special time is helpful, the reasons for doing it, and what toys are acceptable, let's turn our attention to what <u>to do</u> during this time. The skills that we want you to use during the special playtime can be summed up by the acronym 'PRIDE', with each letter representing one of the skills. The five skills that we will work on are Praise, Reflect, Imitate, Describe, and Enthusiasm.

- We understand that it would be nearly impossible to do use these skills all of the time, but we really would like for you to concentrate on them during the 5-minute special play time. Once again, don't worry about memorizing all of this - afterwards we'll give you some handouts that will include all of what we are about to discuss.

- To help the students grasp the PRIDE skills, it is necessary to summarize them as you go through them. For example, before discussing Reflect (the second skill), you should say something like: "OK, so the first PRIDE skill was to praise your child. The second skill is to....", and then proceed to discuss this skill. And before discussing Imitation, you should say something like: "OK, so the first two PRIDE skills were praise and reflect. The third skill is to…". This should also be done before the introduction of the remaining PRIDE skills.

P - Praise the child:

- The first of the PRIDE skills is Praise. Praising the child is a powerful tool in improving his/her behavior, and can enhance the warmth of the parent-child relationship. This is a skill that we would like you to use quite often during your special playtime, averaging about three praises a minute. There are two types of praises that can be given - <u>unlabeled</u> and <u>labeled</u>. Unlabeled praises show children approval or affection without specifying exactly what you like about their behavior. Examples of unlabeled praises are 'nice job', 'terrific', 'you're sweet'. These are certainly good things to say to a child, but it is even better if you can give labeled praises. Labeled praises tell a child exactly what you like about his/her behavior. So, instead of saying 'nice job', you could say 'nice job playing so quietly'. Rather than saying 'you're sweet', you could say 'you're sweet to share those toys with me'.

- While both unlabeled and labeled praises help to enhance the warmth of the relationship between parents and children, labeled praises can be particularly useful teaching tools. Young children will work hard to please their parents. By giving a child labeled praises, you convey exactly what behaviors you like, and which behaviors earn positive attention. So, by praising appropriate behaviors, you increase the likelihood that the child will perform these behaviors in the future.

- Also, remember what we discussed earlier - that children this age are likely to believe what their parents tell them. So, if the child consistently hears that he is a good helper, then he/she is more likely to believe this, incorporate this into their self-image, and act this way.

R - Reflect what the child says:

- After recapping the first PRIDE skill, explain: The next of the PRIDE skills is to Reflect. Reflection is a form of verbal imitation, where you repeat back the basic message what of the child has said. We all know how easy/common it is just to 'Uh-huh' or nod in response to a child, but by reflecting what the child says, you are communicating an acceptance and understanding of the child, and lets him/her know that you are really paying attention to what they are saying. So, we want to replace statements such as 'Uh-huh', 'I see', or "Mmph', with statements that repeat/reflect back what the child has said.

- One of the benefits of reflective statements is that they help to make sure that the child is in the lead of the activity or conversation - which, of course, is one of the objectives for CDI. Further, reflections are actually more effective in getting children to talk than asking questions.

- In addition, by reflecting what the child says, you can expand, elaborate or subtly correct what he/she has said. For example, if the child says 'I builded a house', you could reflect this by saying 'You built a house' (grammatical correction), 'You built a house with a front door (grammatical correction with elaboration), or 'You built a green and blue house (grammatical correction, elaborating, and also helping to teach the child the different colors).

I - Imitate the child's appropriate play:

- You know what they say about imitation - it's the sincerest form of flattery. Well, the same holds true in PCIT. By imitating what the child does (by participating in the play) you are letting him/her know that what he/she is doing is interesting and worthwhile. Also, imitating the child's play will help to keep you active in his/her play.

- An example of how you might imitate the child is if he/she is building a house out of legos, you may want to build a house of your own beside his/hers. Now, this doesn't mean that you have to imitate in a literal sense, but just an approximate imitation of what he/she is doing. One thing to be careful of though, is not to get ahead of the child. Using the lego example, you would not want to build your house bigger or better than the child's, but rather build your house be a little smaller - being sure to follow his/her lead. Also, even while you are imitating the

120

child's behavior, make sure that your primary focus is on the kid's activities. So, even while you are imitating, you can still use some of your other PRIDE skills!

D - Describe the child's appropriate play:

- This is simply describing the behaviors and actions of the child. You should pay close attention to what the child is doing - and describe even the smallest details of his/her appropriate play. A good way to think about this is to imagine that you are a sports broadcaster doing a play-by-play description of a game. Assure the students that this may feel uncomfortable at first, but that it will come quite naturally with practice.

- There are several benefits of descriptive statements: <u>First</u> of all, describing will help keep the child in the lead of the activity. <u>Second</u>, describing his/her behavior will give a clear indication that he/she has your undivided attention. This way the child will not need to bang toys on the table or act out to get a response from you. A <u>third</u> benefit is that it can be a good teaching tool for children this age - for example, you can count out loud the number of blocks, or describe the color of the blocks. <u>Another</u> benefit of describing is that it can be a self-esteem boost for the child, in that it gives the impression that you think his/her choice of activity is interesting. <u>A final benefit</u> of describing is that it helps children to organize their thoughts about their play. This, in turn increases the length of time they are able to attend to the task at hand (attention span), which means his/her attention is less likely to wander.

E - Be Enthusiastic!

- Inform the students that the more enthusiasm they can put into their use of the pride skills, the better the results will be. To underscore the importance of using enthusiasm, point out that parents are often easily excited when their child annoys them or misbehaves (e.g., yelling, raising voices), and that this same enthusiasm should be present when the child behaves in a positive manner.

- Also, assure the students that using enthusiasm will come more naturally with practice, once they are familiar with using their PRIDE skills.

<u>Discuss the three behaviors to avoid during CDI</u>:

- Preface the three behaviors to avoid by explaining to the students that we understand that these are normal things that a parent has to do, but we want to avoid doing them during CDI. This point may need to be reiterated several times while discussing the behaviors to avoid during CDI. Also, give a rationale for why we want them to avoid these behaviors: Now, that we have talked about things that we want you <u>to do</u> during this time, we will turn our attention to what to <u>avoid doing</u> during this time. Avoiding these behaviors will help to make sure

121

that the child is in the lead of the play, enhance your relationship with the child, and will help to create a positive atmosphere that will allow the child to be more willing to accept the discipline part of PCIT.

- Inform the students of the three behaviors to avoid in CDI: In CDI we would like for you to avoid commands, drop questions, and drop criticisms. Now we will discuss these in more detail.

- To help the students better retain the information about the list of rules, they should be briefly reviewed as you list them – similar to how the PRIDE skills were reviewed in the earlier section. For example, before discussing Rule # 2, you should say something like: "OK, so the first rule was to avoid commands. The second rule is to ... ", and then proceed to discuss this rule. And, before the introduction to Rule #3, you should say something like "So, the first two rules were to avoid commands and drop questions. The third and final rule is to ..."

Rule #1: Avoid Commands

- The first rule is to avoid giving commands. Giving commands takes the lead away from the child, which is something we want to avoid during CDI - the child should always lead the play. Also, giving commands can create an unpleasant atmosphere, and may create a power struggle. There are two kinds of commands that need to be avoided: direct and indirect. Provide an example of a direct command (ex - "hand me that crayon"), and of indirect commands which may be less obvious and often begin with "let's", "how about you", "will you please" (ex - "how about coloring that picture blue").

Rule #2: Drop all questions

- After mentioning Rule #1: We have found that adults tend to talk to children in question form about 75% of the time, because we think that this will get them to communicate with us more. But, in fact, questions can turn a child off, especially once they get older. So, while asking children question is very normal, we want to avoid them during this special playtime. One reason that we want to avoid asking questions is because they tend to take the lead away from the child, by making them respond to the question. Also, questions often have hidden commands in them, such as "Wouldn't you rather play with Mr. Potato Head?" - which suggests to your child that you would like for him/her to play that game.

- It is also important to be aware of the tendency for us to raise our voice at the end of a sentence, which can make a simple statement into a question. Provide example of how the inflection in your voice can make a statement sound like a question, being sure to raise your voice at the end of the sentence.

- Another reason that we want to drop all questions is because the child may not know what questions you really want answered and which ones you are just asking as part of the conversation. This point is important, because in the second part of PCIT - during the PDI - the child learns that when you ask a question it is because you expect an answer.

Rule #3: Drop all criticisms

- After mentioning the first two rules: Criticisms are negative or contradictory statements about the child, or an activity he/she is doing. An example of a blatantly obvious criticism would be 'boy, you sure are stupid', or 'that was a dumb thing to do'. Now, of course you understand to avoid these obvious criticisms. But, less obvious criticisms, such as "That piece doesn't fit that way", or simply saying 'No' are sometimes harder to recognize and more difficult to avoid. The problem with these statements is that even though they were intended to help the child, it is stated in a negative way - therefore it is a criticism. This points out to the child what he/she has done wrong, instead of providing him/her with information about what would be a better thing to do. So, another way of phrasing 'That piece of puzzle doesn't fit that way', would be to say 'This piece fits like this'. This tells the child exactly what to do, so he/she is more likely to understand and comply.

  It is also important to remember that children are very susceptible to believing what their parents say. What you say - good or bad - holds a lot of weight. So, with this in mind, it is really important to refrain from criticizing the child - especially during this special play time. It may be helpful to remember that most statements beginning with 'Don't', 'Stop', or 'Quit' are criticisms, and should be avoided.

- Once you have finished discussing the CDI skills, address any questions that the students may have and provide the students with the handouts.

- Then have students pair up and each practice being the parent and the child using paper and crayons as their toys. Allow ten minutes (five minutes each individual in the dyads) to practice the CDI skills.

- During the practice period, praise the students who are working diligently and encourage them to continue.

- At the conclusion of the practice period, again address any additional questions and thank the students for their attention and participation. Have students turn in the crayons and extra paper and remind them that we will continue to discuss PDI during the next class. Encourage students to practice with friends, siblings, nieces/nephews, and/or pets to gain comfort with the skills.

APPENDIX E

PDI Script

PDI Didactic Script

<u>Provide a brief introduction to the PDI Teaching Session</u>:

Explain: Today, I will be giving you a number of rules to learn that will help you in effectively disciplining children. At the end of today's class I will give you a handout describing all that we'll be talking about, so there is no need for you to feel like you have to memorize everything. Also, please ask any questions you have along the way.
<u>Introduction to PDI:</u>

- Introduce the term Parent Directed Interaction (PDI), in which the students will learn several effective discipline strategies. Inform the students that PDI will be the focus of today's class; however they should continue to remember their PRIDE skills. The discipline component of PDI emphasizes <u>consistency</u>, <u>predictability</u>, and <u>following directions</u>.

- There are two kinds of discipline – those that are minding behaviors (things that we want the child to do), and stopping behaviors (things we want the child not to do). Generally, stopping behaviors are more difficult for the child, so we will begin by working on these minding behaviors and work up to the stopping-type behaviors.

<u>The use of Strategic Attention:</u>

- Explain to the students the basic reason behind using 'strategic attention', and identify the appropriate times to use it.

- By the term strategic attention, we are talking about focusing on paying attention to the child's appropriate behaviors - ones that you want to increase. By using the PRIDE skills, you will be paying strategic attention to the child - that's why it is important to use those PRIDE skills on behaviors that you want to see more of.

- Have the student identify some behaviors that they view as desirable, and would like to see a child increase. If the students have difficulty coming up with any such behaviors, it may be helpful to have them think of the opposite behavior of children's most problematic behaviors. For example, behaviors that may be targeted are sitting quietly in their seat, being gentle with toys, using an indoor voice, sharing, persisting at difficult tasks, using polite manners, etc.

125

- Once the students have identified these behaviors, encourage them to pay special attention to when children exhibit these behaviors, and to praise the children for it. In other words, "catch the child being good". For example, if sitting still in the seat was the behavior chosen to be selectively attended to, then the parent would be encouraged to describe this behavior ("you're sitting so still in your seat"), praise this behavior ("I like it when you sit so still in your seat"), or imitate the behavior ("I'll sit still in my seat while I'm playing, too").

- Inform the students that this can be a very effective shaping tool, and that children will work hard to earn recognition and praise for these targeted behaviors. Also, encourage the students to use selective attention whenever possible, not exclusively during the special play time.

The use of Selective Ignoring:

- Explain to the students that just as selectively attending to a behavior can increase its frequency, "selectively ignoring" a behavior can help to decrease its occurrence. Often parents report that they have tried ignoring in the past to no avail. Explain that "selective" ignoring is a rather advanced skill that few parents know how to use effectively.

- Have the students identify some specific behaviors children exhibits that they would like to diminish. If students have difficulty identifying these behaviors, provide commonly identified behaviors such as hitting, talking back, throwing a tantrum, destroying things, lying, etc.

- Unfortunately, not all of these behaviors can be diminished through selective ignoring. Explain to the students that for ignoring to be effective, that it must be aimed at a behavior that is intended to get a reaction from them (i.e. push their buttons!) For example, if they want the child to stop eating cookies out of the cookie jar, it won't do any good to ignore it. The reason that the child is eating the cookie is because it tastes good, not because they want to get a reaction from the parent. In contrast, if a child is whining about wanting to go to McDonald's, then ignoring could be effective, because the child is not whining for the fun of it. What makes whining rewarding for the child is the reaction they get from their parents. If the parent consistently ignores this whining, then the child is left with no reason to keep doing it!

- Next, go through the list of behaviors that the students stated that they would like to decrease. Help the students decide whether or not their attention would be rewarding to the child, and if selective ignoring would work for the each of the behaviors. Behaviors not appropriate for selective ignoring will be discussed in further detail during the discipline component of PCIT (PDI).

- The next important principle of selective ignoring that is necessary for the students to understand is that the behavior most likely will get worse before its gets better. This is because the child will be accustomed to getting a particular reaction, and when the parent no longer reinforces this, the child may respond by escalating into a more disruptive behavior in order to get that reaction.

- Therefore, it is important for the parent to decide whether they are willing to ignore a particular behavior, even after it gets worse (because it will!). The parent must be committed to continuing to ignore the behavior once they begin - and **should not ever give in**. Explain that if the parent does give in once their child has escalated; they have basically taught the child that now it is necessary to be really disruptive to get a reaction. If they do give in it will be very hard to get rid of that particular behavior. So, the parent must be sure that they are willing to follow through with ignoring a particular behavior.

- Once the students have identified behaviors that they feel confident that they will be able to ignore, explain exactly what they should do while ignoring: To make your selective ignoring more effective, we want you to maximize the difference between how you respond to the child when he/she acts appropriately and when he/she acts in a negative way. So, when the child begins to behave in a way that you wish to selectively ignore, you will pay **no, zero, nada** attention to. This includes giving no verbal or nonverbal reaction to the child, do not even look at him/her. In fact, you'll want to turn your body away from the child until he/she ceases the behavior. Sometimes, the child will continue his/her disruptive behavior for a long time. If so, then it might be helpful for you to start enthusiastically playing with a different toy, while continuing to ignore the child's behavior. The goal is to make it sound like you are having such a good time, that the child will want to come over and join you. Chances are good that the child will stop his/her disruptive behavior and come see what you are doing. This gives you an opportunity to again provide strategic attention for his/her appropriate behavior (ex. – "thank you for playing with me").

- Another skill that can be used while ignoring is "modeling the opposite behavior". So, for example if the child starts hitting Mr. Potato Head with legos, you can begin to enthusiastically describe how much fun Mr. Potato Head is having playing nicely with the legos. Often, children will begin to participate in the more appropriate play that you are modeling. So, in effect, this will teach the child what "to do" to gain your attention.

Discuss how to give appropriate commands:

- "An important part of PDI is learning how to give appropriate commands to children. Now, we're going to talk about the kinds of commands that are good for getting the child to obey. Specifically, there are five parts of an appropriate

command that we are going to discuss today: they should be **direct**, **positively stated**, **simple**, **specific**, and should only be given **one at a time.**"

- To help the students better retain the information about how to give appropriate commands, they should be briefly reviewed as you list them. For example, before discussing positively stated commands, you should say something like "OK, so the first kind of a command was that they should be direct. The second kind is…", and proceed to discuss positively stated commands. And, before discussing giving simple commands, you should say something like "OK, so far we have discussed that commands should be direct and positively stated. The third kind is…" This should be done before the introduction of the remaining kinds of commands.

- First, the command should be **direct**, as opposed to indirect. Examples of indirect commands typically begin with phrases such as "let's", "how about", or "why don't you". Also, many indirect commands are expressed in question form. On the other hand, direct commands should leave no doubt in the child's mind that he is being told to do something – he/she should have no misunderstanding that he/she has a choice. You can still be polite and preface the commands with "please". Provide the students with some examples of direct commands, for example, "Put the nose on Mr. Potato Head in this hole (point)".

- Sometimes (but not always) it is helpful and appropriate to give the child an explanation or reason along with the command - but there is a specific manner in which to do it. The explanation or reason should either be stated before the command is given, or after the child has obeyed the command. The reason should not directly follow the command, because it increases the chances that the child will attempt to negotiate. An example of this includes "I want to color my tree green. Please hand me the green crayon".

- Commands should be **positively stated**. Be sure to tell the child what "to do" instead of what "not to do". We want to avoid "don't" commands, because this does not tell the child what you would like for him to do – so how can he or she obey? If we only tell a child what not to do, then it leaves the door open to what he or she can do next – just because the child is told to stop hitting his little sister, doesn't mean he won't next start hitting his little brother! In many situations, it is possible to give a positively stated command that is incompatible with the negative behavior you are trying to eliminate. An example of this is "come sit over here next to me" instead of "stop running around the room".

- Ask the students to think of some instances in which they could give a child a positively stated command that is incompatible with a behavior that they wish to decrease.

128

- Commands should be **simple**. They should be things that the child is intellectually and physically capable of doing. For example, we wouldn't tell a child to draw a hexagon, unless we were sure that the child would know how to do this. Also, we would tell a child to hand you a purple crayon, if he/she didn't know the color purple. Since we will be teaching you to punish noncompliance, it wouldn't be fair to punish the child for something he wasn't capable of doing in the first place. So, make sure that the commands are simple enough so that your child can understand them.

- Give only **one command at a time**. It is often difficult for children to remember more than one thing at a time. So, we want to avoid stringing commands together, such as "go close that door, pick up that block, and come sit over here." Also, some general commands like "clean up your room" contain hidden commands like picking up blocks, making bed, putting clothes away, etc. That's a lot to ask a child to do (and remember to do) all at once. Instead, we want to break that big command down into its smaller parts.

- Another plus with breaking the commands down, is that it gives you more opportunities to praise the child. Praising the child when he follows a command will help to increase his/her compliance.

- Commands should be **specific**. Make sure that you tell the child specifically what to do. Commands, like "be careful", "be good", "be nice", and "watch out" are so nonspecific that the child doesn't know exactly what he should do in order to be obedient. You may know exactly what you mean by those commands, but the child may not. Also, by giving non-specific commands, it is difficult to judge if the child has complied. Instead, we ask that you use specific commands like, "Get down off the chair", "Move away from the door", or "Talk in a quiet voice or inside voice". This whole concept is similar to giving labeled praises instead of unlabeled praises – be specific!

- One final point about how to give a command, is that it is useful to accompany your verbal command with **non-verbal cues**. For example, if you asked the child to "sit down in the chair", you should point to the chair you wish for him to sit in. This will help the child better understand your command, and increase the likelihood that he will comply.

Discuss Discipline Options:

- Have students generate possible discipline strategies that are available to parents. Discuss the positive and negative aspects of each, particularly spanking, time-out, and loss of privileges. It is important for the students to realize the message each of these discipline techniques sends (what it teaches the child) and what effect it has on future child behaviors.

- Spanking
    - Although spanking can be used quickly and often stops a negative behavior for a little while, it does not teach a child what **to do**, it only teaches what **not to do**.
    - Because a child initially stops a negative behavior parents often believe that spanking is effective, however the child may continue with the negative behavior after a short while.
    - Spanking may need to be used with increased frequency and intensity to maintain it's effect, which could lead to physical abuse.
    - Spanking can also be affected by the emotional state of a parent, which means that a highly frustrated and emotional parent could use more force than they intended when spanking their child.
    - Spanking can teach children that problems are solved through physical aggression. Children who are spanked frequently tend to use physical means to resolve conflict with peers.
- Time-out
    - Often parents, who believe that time-out does not work, do not use it effectively.
    - Children who are placed in time-out after exhibiting a negative behavior and then allowed to resume a fun task after sitting in time out have not learned what they are supposed to do instead of the negative behavior.
    - Time-out is only effective if children are brought back to the original situation and taught what they should do instead (i.e. comply with parent command).
    - Time-out can be used with children of varying ages, but it is important to adjust the length of time for the time-out based on the child's cognitive ability to understand why they are sitting there.
    - Time-out can be used immediately and in a number of different settings.
- Loss of privileges
    - Loss of privileges is a more advanced discipline technique and requires that the child has the ability to think ahead and connect the longer term consequence to the immediate behavior.
    - If children are unable to link their negative behavior to the later loss of a privilege, this discipline technique is not going to be effective.
- Explain to the students that in PCIT, we use a time-out as a primary discipline strategy and we will discuss briefly what the procedure entails.

Introduce the PDI Procedure:

- So, now that we have discussed how to give a command to a child, let's talk about what to do after the command has been given.

130

- Within 5 seconds you must decide if he/she is making a move toward obeying. We want you to say nothing to the child until you've decided whether he has obeyed.

- Praise for quick compliance
    - Instruct them to give the child praise, and emphasize that the praise should be for minding. Review the difference between labeled and unlabeled praise, and give examples of labeled praise for compliance.

    - For example, "I like the way you sat down in your chair so quickly."
    - Emphasize to the students how powerful giving good, labeled praises following compliance can be in increasing the overall level of compliance from the child.

- Giving two choices
    - If the child does not comply within **5** seconds, then this is considered non-compliance. In this case, you should give the following warning, "You have two choices. You can (obey the command) or sit on the time-out chair." You need to use these <u>exact words</u> <u>every time</u>. Do not repeat the command, or ask if the child has heard you. At the same time you want to give the nonverbal cue of holding up two fingers. Emphasize the importance of using the same verbal phrase and nonverbal cue every time.

    - Tell the students what to say if the child obeyed after the warning. Instruct them to give labeled praise. "Thank you for minding. Now you don't have to go to time out."

- Using Time-Out
    - Inform the students that time-out is used when the child does not comply within 5 seconds after being given the two choices warning. Also, tell the students that if the child does not comply within the **5** seconds, then he cannot change his mind on the way to time-out.

    - So, if the child does not comply with the two choices warning, the child should be guided to the time-out chair with a minimal explanation and told to "Stay in the chair until I tell you, you can get up." (Nonverbal cues: Parent stands in front of child with palms open and pushing down toward the floor.)

    - Do not say anything else.

    - Walk away from the time-out chair.

- Emphasize the importance of using these <u>exact words</u> and <u>nothing extra</u>. The words are chosen to be the shortest, simplest way to tell the child what he has done wrong and what he has to do now. He gets no extra attention. The chair is an effective disciplinary tool only if you are the one in control of when he can get off it.

- When the child is on the chair, what kinds of things do you think he might do?

- Listen to students' predictions. Children will probably run through all kinds of behaviors that they think might get your attention. Some of these are going to be emotionally hard to handle. They may tell you they hate you, they may cry, they may say that they have to go to the bathroom, or that they are going to throw up. Anything they do on the chair that is not potentially physically harmful is ignored.

- When you ignore the child's negative behavior on the chair, you should give no verbal or nonverbal reaction – none, nada! Even when the child is not on the chair, we want you to keep ignoring those little irritating behaviors that aren't important enough to use a command for, like whining and sassing. Be sure to be consistent in your ignoring or it will not work.

- Ending Time-Out
  - Time-outs last for 3 minutes. Near the end of this time – after 2 minutes and 55 seconds – we will be listening for 5 seconds of silence. The child must be quiet for 5 seconds before you approach the chair. The silence is important because we do not want him to accidentally learn that you respond to noisiness or he will be noisy the next time. We also don't want superstitious learning to occur. For example, he might say, "I hate you" just before 3 minutes is up. If you get him out of the chair right then, he will think that in the future he can get out of the chair by saying the same thing.

  - After the silence, approach the chair and ask the child, "Now that you are quiet (sitting still, etc.) are you ready to (follow the original command)?" Hold hand out to child. State this in a neutral tone of voice as though it is really his decision. You must judge whether he is saying yes or no.

  - If his answer is "no", tell him, "Alright, then stay in the chair until I tell you, you can get off." Walk away from the chair and wait 3 more minutes. He cannot change his mind after the 3-second rule, and you should ignore all pleads to get out of time-out at this point.

- If the answer is "yes," lead the child to the area in which the original command was given. Chances are he will comply with the original command at this point. If he doesn't, take him back to the chair and repeat the time-out procedure. If he does do it, acknowledge that he did it with a simple, "fine". Then quickly give another easy command that he is likely to do. When he obeys this command (which most children do) then give him very enthusiastic labeled praise. This will demonstrate how much more pleasant it is when he follows commands than when he is does not.

- What if the child gets off the chair?
    - Explain to the students that we have a specified procedure for when children do not stay on the time out chair, but we will not go into detail with it today. Emphasize the main points of putting the child back on the time out chair with minimal attention, but giving a warning. Explain that we generally help parents identify an appropriate back-up procedure that is more unpleasant than complying with timeout but is safe for the child.

- Setting up an incentive system

    - For some children, the parent may set up a reward system so that the child gets the most reward if he does not go to time out during a specific period of time, gets some reward (but less) if he goes to time-out and stays in the chair, and gets no reward if he gets out of the time-out chair. Rewards might be such things as stickers, gum, candy, or coins.

    - Parents using the reward system again will still give the child a warning the first time he gets out of time-out. "If you get out of the time-out chair again you will get no stickers at the end of special playtime."

- Once you have finished discussing the PDI skills, address any questions that the students may have and provide the students with the handouts. Discuss the discipline hierarchy.

- Then have students pair up and each practice being the parent and the child using paper and crayons as their toys. Allow ten minutes (five minutes each individual in the dyads) to practice the both the CDI skills and giving effective commands and warnings, but not the timeout.

- During the practice period, praise the students who are working diligently and encourage them to continue.

- At the conclusion of the practice period, again address any additional questions and thank the students for their attention and participation. Have students turn in

the crayons and extra paper and remind them to practice with friends, siblings, nieces/nephews, and/or pets to gain comfort with the skills.