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Predicting Parent Attendance for Group-Delivered PCIT Workshops in Head Start Centers

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PREDICTING PARENT ATTENDANCE FOR GROUP-DELIVERED PCIT WORKSHOPS IN HEAD START CENTERS

by

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ABSTRACT

Group PCIT was offered to parents of Head Start children as part of a larger study that investigated the Impact of a Preschool Obesity Prevention (IPOP) Program Enhanced with Positive Behavioral Supports. The dependent variable (DV) in this study was number of group PCIT sessions attended. The independent variables were marital status, income, education level, parenting practices measured by the Alabama Parenting Questionnaire-PR, and responses from the Caregiver Feeding Style Questionnaire. Predictions were made regarding the impact each of these variables had on attendance to group PCIT sessions. An ordinal logistic regression model was used to analyze the data. No statistically significant values were found for the predictor values in this study. Implications for future research are discussed.

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DEDICATION

I would like to thank my children, Nicholas, Edith, and Stephen, for their love and encouragement throughout my academic studies. Thanks to my sister, Jill, who inspires me and always believes in me. Thanks to my mother who loved me and never doubted that I would complete this journey. Thanks to my dad and bonus mom for being the best Mimi and Pawpaw ever. I would also like to thank Phillip for his reassurance and wisdom during the most stressful times of my internship year.

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CHAPTER I – INTRODUCTION

Background

Approximately five million children in the United States attend preschool programs, and among these children, many are at risk for developing emotional, behavioral, and health related problems that will follow them into adolescence and adulthood (U.S. Census Bureau, 2018; Smith et al., 2017). Upwards of 30% of preschoolers meet criteria for an emotional or behavioral disorder such as depression, anxiety, or conduct disorder (Feil et al., 2005; Lavigne et al., 2009; Qi & Kaiser, 2003). Poor social, emotional, and behavioral skills developed in early childhood often continue through adolescence and negatively impact academic achievement and school behaviors (Carter et al., 2010; Perry et al., 2017). Adolescents and young adults diagnosed with a mental health disorder prior to age five are more likely to have contact with law enforcement, be involved in the juvenile justice system, struggle academically, and dropout of school (Dierkhising et al., 2013).

Likewise, behavior patterns established in early childhood directly impact health throughout one's life. Unhealthy eating behaviors and lifestyle habits contribute to the growing obesity epidemic. Consuming high-calorie, low-nutrient foods and beverages, engaging in limited physical activity, increased sedentary activities (e.g., television, video games), and poor sleep routines contribute to obesity in young children (Hales et al., 2017). Twenty percent of children in the U.S., ages six to 19 are classified as obese, and over 41 million children, globally, ages zero to five years are classified as overweight or obese (Shab-Bidar & Djazayery, 2018).

Consequences of childhood obesity are wide-ranging and contribute to multiple physiological problems including heart disease, type 2 diabetes, high blood pressure, cancer, asthma, sleep disorders, arthritis, and adult obesity (Skinner et al., 2018). Likewise, social development may be impaired as a result of childhood obesity. The social stigma of obesity in childhood increases the risk for being bullied by peers, and these children tend to have fewer childhood friendships and often face education disparities (Pont et al., 2017). Finally, the psychological impact of childhood obesity contributes to depression, anxiety, externalizing behavior problems, and low self-esteem (Small & Aplasca, 2016).

Socioeconomic Factors

Economically disadvantaged children are at an even higher risk for emotional, behavioral, and health related problems. Low-income families are at a greater risk for family and social stressors (e.g., job loss, poor quality child care, inadequate supervision, unaddressed medical issues, maternal mental health issues, and unsafe neighborhoods) which in turn, negatively impact parenting practices that have been found to be related to the development and exacerbation of behavior problems in children (Carter et al., 2010; Egger & Angold, 2006; Linver et al., 2002; Qi et al., 2003).

Children who experience multiple risk factors are even more likely to exhibit social and emotional development problems. Among these risk factors, low socioeconomic status and poverty have been identified as predictors of maladaptive internalizing and externalizing behaviors. Slopen et al. (2010) investigated the relationship between food insecurity and mental health problems. They found that children who persistently experienced food insecurity were nearly 1.5 times more likely

to have an internalizing mental health problem, like depression or anxiety. Moreover, children living in poverty were twice as likely to have an externalizing behavioral problem like aggression or defiance than same-age children who had not experienced food insecurity. Although lack of proper nutrition in early childhood has been linked to physiological and psychological problems later in life (Ashiabi & O'Neal, 2008; Skalicky et al., 2006), psychosocial burdens associated with living in poverty may be the primary culprit (Slopen et al., 2010).

Poverty-related stress is associated with symptoms of depression, anxiety, hostility, and aggression among families in disadvantaged communities (Hammack et al., 2004; Wadsworth et al., 2008). The mechanisms linking low socioeconomic status to emotional and behavioral problems in children are well known, so it is no surprise that scarcity of resources often creates a stressful environment, including conflict among family members, contact with violence, recurrent moves and transitions, and experiencing discrimination and trauma (Wadsworth & Achenbach, 2005). Higher levels of parental stress and limited resources to meet basic living demands (e.g., utilities, gas, rent) make parenting children more difficult and may lead to harsher parenting practices (Waldfogel, 2000). Murry et al. (2008) argue that harsh life circumstances are associated with less parental warmth, less monitoring of a child, and more argumentative communication, which leads to disruptive parent child relationships. Because children of families experiencing poverty and other socioeconomic hardships are more likely to develop psychological disorders later in life, this issue has received global attention from myriad entities (Hodgkinson et al., 2017; Pascoe et al., 2016). Community-based programs offering collaboration opportunities between service providers and

economically disadvantaged populations are useful in facilitating education, support, preventative care, and treatment to families at risk. (Kuo et al., 2018).

Head Start Programs

One such preventative program developed to provide support and alter long-term effects of living in poverty is the Head Start program. Head Start programs have been servicing economically disadvantaged children for over 50 years with the purpose of breaking the cycle of poverty by affording more opportunities to families living in underprivileged communities. The primary goals of Head Start are to increase academic success in elementary school, while assisting children in developing social skills and emotional regulation (U.S. Department of Health and Human Services, Administration for Children and Families, Office Head Start, 2010). In addtion to facilitating developmental success in preschoolers, Head Start case managers and community volunteers provide support services for their families through home visits, ongoing communication and collaboration, parent workshops, and advocate services. Parenting education and support are at the core of Head Start and have contributed to improved cognitive and emotional outcomes for serviced children (Grindal et al., 2016). For these reasons, Head Start has sustained popularity through the decades and provided a feasible means to disseminate evidence-informed treatments to disadvantaged populations.

Parent-Child Interaction Therapy (PCIT)

Evidence-based interventions in early childhood have long-term positive parent, child, and family benefits (Dunst, 2017). One such evidence-based treatment developed for pre-school age children is Parent-Child Interaction Therapy (PCIT), which is a parent management training (PMT) program that has been shown to decrease coercive parenting

practices in caregivers, decrease aggression in children, and improve parent-child relationships impacted by adverse life events in children ages two to seven (Urquiza and Timmer, 2014). Developed by Sheila Eyberg in the 1970's, PCIT uses principles rooted in attachment, behavior, and social learning theories to improve the child's behaviors and promote authoritative parenting practices (Allen et al., 2014; Zisser & Eyberg, 2010). Whereas many parent skills training approaches promote authoritative parenting practices while targeting child misbehavior, PCIT includes live coaching from the therapist. Immediate feedback is a foundational principle in behavior modification procedures and provides real time support and feedback for parents during the PCIT sessions and has been shown to be more effective than delayed feedback in improving parent success in mastering skills (Shanley & Niec, 2010). Moreover, PCIT offers all the recommended components of attachment therapy (i.e., improving strong parent-child relationships, increasing positive parent attention to child behaviors, generalizing skills to home and community settings, and considering the child's cognitive development level) and has demonstrated better outcomes in children with a history of abuse than other parent training programs (Allen et al, 2014).

Typically, PCIT is provided in outpatient clinic-based settings with individual families and can last approximately 12 to 20 weeks. PCIT is provided in two stages: Child Directed Interaction (CDI) and Parent Directed Interaction (PDI), and parents are required to master the skills taught in CDI before continuing to the second stage, PDI (Eyberg & Boggs, 1989). In CDI, parents are trained to interact with their child in a positive way through using the PRIDE skills (i.e., praise, reflect, imitate, describe, enjoy) and receive live coaching with feedback from the therapist during practice sessions

(Eyberg et al., 1995). In traditional PCIT, mastering these skills is required before moving on to the PDI, or parent-lead, phase of PCIT. In PDI, the parents are taught how to provide direct commands, establish house rules, and deliver time-out for non-compliance and rule violations. When PDI is added to the treatment, CDI coaching sessions continue for the duration of standard PCIT treatment (i.e., approximately 12 to 20 weeks).

Although PCIT has demonstrated effectiveness in clinical, outpatient samples with individual families, poor attendance and dropout rates are problematic. Dropout rates for PCIT have been found to range from 40 to 67% in community-based populations (Kazdin, 1996; Lyon & Budd, 2010). Children who receive community-based services for low-income families are at the greatest risk for developing emotional and behavior disorders, but they are often less likely to receive services. Families with multiple psychosocial risk factors are less likely to keep appointments, comply with homework, or complete treatment when compared to families who do not (Haine-Schlagel & Walsh, 2015). Limited financial resources and poor social support have been identified as predictors of poor treatment adherence, with economic hardship being the best predictor (Fernandez & Eyberg, 2009; Niec et al., 2005; Taylor & Biglan, 1998).

Group-Delivered PCIT

An alternative to traditional PCIT is group-based PCIT. Group PCIT is different than traditional PCIT in that it allows several families to participate in sessions at the same time. Sessions begin with children supervised in a separate location, while their parents meet with the PCIT coach in a group setting. Parents discuss homework, review skills, ask questions, and learn new skills. Parents may share challenges or successes they

have experienced since the last session, and the PCIT coach facilitates discussions regarding problem solving strategies. Afterwards, the PCIT coach teaches a new skill for the week, and then one child at a time is brought to the group room to practice the new skill with the parent. Individual parent-child dyads receive coaching in front of other parent group members, with each attendee taking a turn with their own child practicing an identified PCIT skill. Group PCIT research has demonstrated efficacy and acceptability when used with at-risk populations. Improvements in child behavior and parenting skills, with decreased parental stress have been found when group PCIT is implemented in community based settings with at-risk families (Niec et al., 2016; Nieter et al., 2013). However, improvements in parent attendance to scheduled group sessions remained low and dropout rates remained high when compared to traditional PCIT formats. The researchers noted parenting behaviors as a possible contributor to poor treatment adherence but explained that more research is needed in this area. More recently, Blair et al. (2019) identified predictor variables to investigate attendance rates for a brief (i.e., 5 to 7 sessions), group delivered PCIT program with foster families that included weekly phone consultations. Predictor variables identified included measures of demographic characteristics of participants, child behaviors, parental stress, and non-adherence to treatment by caregivers, and logistic regression models were used to analyze data. Results from their study indicated that attrition rates were not predicted by child behaviors or parental stress, but non-adherence to treatment (i.e., failure to participate in supportive phone consultations) and race/ethnicity, compounded with lower education level and age were predictive of attrition. However, results are limited in that the participants were foster parents, so generalizing the findings to other caregiver types

(e.g., biological parents, grandparents) is not appropriate. Additionally, demographic information provided was confined to race, age, and education level, but income level (a known risk-factor) was not included. Furthermore, caregiver stress was the only parent variable measured, while *no* measures of parenting behaviors were examined. Given the limitations of Blair et al.'s study and the paucity of literature available on this topic, further investigation is warranted.

This study investigated relationships between identified predictor variables and group-delivered PCIT attendance for parents of children in Head Start. Modifications to traditional PCIT were made to address barriers commonly experienced by disadvantaged families in need of services for their children. Likewise, traditional PCIT targets children with existing emotional and behavioral disorders and uses measures to assess child behaviors. However, this prevention-based intervention was intended to decrease the likelihood that children experienced emotional and behavioral disorders and obesity. Therefore, caregiver characteristics were evaluated to better understand adherence to the intervention. Predictor variables include demographic characteristics of participants, parenting behaviors, and caregiver feeding styles. It was hypothesized that factors predicting poor attendance will emerge, contributing to the paucity of research in this area.

Research Questions and Hypotheses

The primary purpose of this study was to identify characteristics predictive of group PCIT attendance rates among parents with children in Head Start. This analysis will add to the understanding of barriers (e.g., extreme economic hardship) endorsed by Head Start families and provide greater insight into the specific characteristics of

participants (e.g., parenting practices, feeding style) who attended group PCIT. This study addressed the following research questions with posed hypotheses:

Question 1: Does marital status predict group PCIT attendance?

Hypothesis 1: Caregivers who report being married will attend more group PCIT sessions than individuals who report being single, widowed, separated, or divorced.

Question 2: Is level of education reported by parent indicative of attendance to group PCIT?

Hypothesis 2: Individuals who report having a high school diploma or a higher level of education are more likely to attend group PCIT than individuals who do not have a high school diploma.

Question 3: Does income impact the number of group PCIT sessions attended?

Hypothesis 3: Individuals who report lower incomes are less likely to attend group PCIT sessions.

Question 4: Can parenting practices predict group PCIT attendance?

Hypothesis 4: Parents who endorse higher ratings of positive parenting practices will attend a greater number of group PCIT sessions than parents who do not endorse positive parenting practices.

Question 5: Can caregiver feeding practices predict group PCIT attendance?

Hypothesis 5: Parents who endorse authoritative caregiver feeding styles will attend more group PCIT sessions than parents who endorse other feeding styles.

CHAPTER II - METHODS

Introduction to the Study

This study was part of a larger research project examining the Impact of a Preschool Obesity Prevention (IPOP) Program Enhanced with Positive Behavioral Supports. Positive parenting supports included group PCIT. The larger project included school-wide Positive Behavior Interventions and Supports (PBIS) and the Hip Hop 2 Health curriculum (Fitzgibbon et al., 2002) in nine Head Start centers located in a southern state. The larger project focused on community based prevention strategies to decrease the rate of obesity in children attending Head Start. However, the goal of this study was to identify characteristics in individuals that may help predict participation in group PCIT sessions.

Participants and Setting

Five Head Start centers were selected as the experimental group using a randomized cluster design, and the remaining four centers served as the control group. For the purposes of this study, only the parents of children attending one of the five targeted Head Start centers were included this analysis, as they were the only participants who received group-based PCIT. Primary caregivers were defined as the legal guardian of the targeted Head Start preschooler who cared for the child most of the time during the week, when the child was not at Head Start. Parents or legal guardians provided consent for participation (See Appendix A). The Institutional Review Boards (IRBs) for the Mississippi State Department of Health and the University of Southern Mississippi approved this project prior to the start of the study (See Appendix B).

In total, 82 parent-child dyads were recruited from Head Start centers located in rural regions of a southern state serving families with low incomes. The average age of caregivers was 31.2 years (Range: 21 – 61). Table 1 shows the demographic characteristics of the parents who completed baseline questionnaires. Sixty-five of the participants were identified as mothers of Head Start children. Over half of the participants reported never being married. Sixty-one of the 82 caregivers identified as black or African American. Parent's highest level of education was reported and revealed that 19.5% of the parents did not have a high school diploma; 29.3% graduated from high school or earned a general equivalency diploma (GED); 28% of the parents attended some college; and 20.7% of the parents reported earning a college degree or greater. Over 60% of the families reported an income of less than $20,000 per year, well below the national poverty level (Lee, 2018). However, only 31.7% of the participants reported receiving SNAP benefits.

Table 1 Demographic Characteristics of Caregivers

Demographic Characteristic (*N = 82)*	*n*	%
Caregiver's relationship to child		
Mother	65	79.3
Grandmother	7	8.5
Father	4	4.9
Grandfather	0	0
Aunt	2	2.4
Legal guardian	4	4.9
Other	0	0
Marital status		
Never married	44	53.7

Married	22	26.8
Separated	8	9.8
Divorced	4	4.9
Widowed	1	1.2
Not Reported	3	3.7
Identified ethnicity		
Hispanic or Latino	4	4.9%
Not Hispanic or Latino or not reported	78	95.1%
Identified race		
American Indian or Alaskan Native	0	0
Asian	0	0
Black or African American	61	73.2
White	15	18.3
More than one of the above	0	0
Don't know or not reported	3	3.6
Education level reported		
Did not finish high school and no GED	16	19.5
Graduated high school or GED	24	29.3
Trade or vocational school	1	1.2
Some college	23	28.0
College degree or greater	17	20.7
Not Reported	1	1.2
Income		
Less than $5,000	27	32.9
$5,000 - $14,999	19	23.2
$15,000 - $24,999	10	12.2
$25,999 – $34,999	4	4.9
$35,000- $49,999	1	1.2
Don't know or not reported	21	25.6

Supplemental Nutrition Assistance Program (SNAP)		
Endorsed “Yes”	26	31.7
Endorsed “No” or did not report	56	68.3
Sex of Head Start Child		
Female	41	50.0
Male	40	48.8
Not Reported	1	1.2

Procedures

During the initial data collection, primary caregivers of preschoolers were recruited at the Head Start centers during child drop-off and pick-up times and with phone calls. Pre-treatment collection took place during operating hours at the Head Start centers in a designated room separate from the children. Research assistants explained the purpose of the study and confidentiality was assured. After reading and signing the consent forms, caregivers were directed to stations where they independently completed multiple measures, including demographic information, parenting style, and feeding style questionnaires. Translated questionnaires and an interpreter were available and utilized for Spanish speaking parents. Parents were provided refreshments and compensated with a $15.00 gift card from a popular shopping center. In addition, childcare was provided during data collection for parents with children not enrolled in Head Start. To be eligible to participate in the group PCIT workshops, a participant’s child had to be three years old at the time of enrollment and attend one of the five Head Start centers assigned to the experimental group.

Training Coaches and Coders

Because targeted Head Start centers were situated in different geographical

locations throughout the state, the researchers utilized a train-the-trainer approach to most efficiently deliver the intervention. Five masters-level mental health professionals employed by the state's Department of Health, were trained to serve as group PCIT coaches using a modified PCIT manual developed for this project. Additionally, five bachelors-level Early Childhood Education (ECE) Specialists employed by the Head Start agency were trained in PCIT coding using a modified Dyadic Parent-Child Interaction Coding System (DPICS, Eyberg et al., 2013). Coaches and coders were trained at the beginning of the Head Start school year to implement the group PCIT parent workshops. During a two-day intensive workshop, coaches and coders were trained by a member of the research team that was a licensed psychologist with expertise in implementing parent skills training programs and a psychology doctoral student with experience in behavioral parent training via advanced coursework and supervised clinic practicum. Group PCIT training for coaches and coders consisted of instruction, modeling, roleplay with feedback, and coding practice. All coaches and coders demonstrated proficiency in training goals by the conclusion of the train-the-trainer workshop. A checklist of procedures used and items covered in the train-the-trainer workshop was used to insure treatment integrity (Appendix E).

Although coaches and coders were trained to implement intervention procedures at the beginning of the Head Start school year, the group PCIT workshops did not start until the spring. So skills acquired in training would be maintained following a several month gap, supportive correspondence between trainers, coaches, and coders continued through phone conferences, homework assignments, supplemental instruction videos, and collaborative recruitment of participants. Once the group PCIT workshops began,

PCIT coaches participated in bi-weekly phone conferences led by the researcher that conducted the original training. During the bi-weekly phone conferences each PCIT coach described their most recent session, identified any challenges they encountered, and asked questions aimed at addressing challenges. The researcher provided feedback to PCIT coaches that included praise for their participation in the sessions and recommendations that addressed questions regarding recent challenges. Finally, the researcher reviewed the content of the upcoming session and provided tips for a successful session.

Ethnic Validity and Cultural Appropriateness

Ethnic validity, an extension of culture, was addressed in this study. As part of the larger research project (i.e., IPOP study), a pilot study was conducted that included approximately 10 Head Start mothers and children who attended one modified group PCIT session. Immediately after the session, feedback from parents was provided. In general, parents indicated that the intervention was consistent with their cultural values. Based on these parents' reported experiences with the intervention, assumptions could be made about the appropriateness of goals, intervention techniques, and overall participation from a larger sample of ethnically similar participants (Barnett et al., 1995).

Modified Group PCIT

Traditional PCIT can last up to twenty weeks, and advancing from CDI to PDI is contingent upon mastery of key CDI skills. However, since children with existing emotional and behavioral disorders were not targeted in this prevention-based study, a time-limited approach was warranted. This study included eight sessions: four CDI

sessions and four PDI sessions, and all participants passed through the phases of modified PCIT together. Sessions lasted approximately 1.5 hours, and content for each session was specific to a given week's curriculum.

In the first session, CDI Teach, coaches engaged in group cohesion building activities with parents and provided an overview of the modified group PCIT workshops. Parents were instructed on the main components of CDI and taught PRIDE skills (i.e., Praise, Reflect, Imitate, Describe, and Enjoy) before engaging in role-play activities. During role-play, the coach acted as a "parent" delivering PRIDE skills to a parent acting as a "child" for three minutes. Next, parents were assigned the task of delivering PRIDE skills to another parent pretending to be the "child," while the coach provided feedback on using PRIDE skills. Coaches redirected parents' use of questions, commands, and criticisms during the role-play activities. Finally, the group PCIT coach discussed the importance of practicing the PCIT skills with their child between workshops and assigned parents homework. Homework consisted of parents video recording PRIDE skills with their child for one time for five minutes using the CDI skills taught in session one. Finally, parents were instructed to practice CDI with their child 10 times in two weeks. Parents were provided a homework sheet to document experiences (e.g., play activities used with their child, problems encountered, frequency of CDI practice) engaging in CDI with their child at home (Appendix F).

CDI sessions two through four included direct parent coaching (i.e., modeling, practice, feedback) with the child to improve positive parenting practices using the PRIDE skills and decrease the use of commands, criticisms, and questions. It is important to note that traditional PCIT includes live coaching via a bug-in-the-ear

device. That is, coaches leave the room when a parent practices skills, and the coach provides feedback and instructions via a one-way FM radio while observing through a one-way mirror or by video. In this study, sessions were conducted in Head Start centers that did not include such technology. As a result, coaches stood near parents as they practiced and provided live coaching as parents practiced skills.

Parent directed (PDI) sessions five through eight incorporated instruction training with parent coaching to direct child behavior using effective commands. Although in traditional PCIT, parents must demonstrate mastery of CDI skills before progressing to PDI, this was not a requirement. Because group PCIT was part of a larger research project, it was important to keep the content of sessions the same for all Head Start centers in the study. In session five, PDI Teach, parents were taught how to deliver commands and provide consequences for compliant and non-compliant behavior exhibited by their child. Coaches taught parents how to give a time-out warning and a time-out, using modified PCIT procedures. Parents were provided a time-out handout to reference during the PDI teach session (Appendix G). However, coaches advised parents to wait until after they had been coached on PDI with their child (sessions six) before using the time-out procedures at home. Parents were assigned PDI homework to practice the PDI skills covered, in addition to the CDI homework already assigned. PDI homework involved giving effective commands, compliance, and time-out Appendix F.

In PDI Coach sessions six, seven, and eight, parents reviewed CDI skills, received live coaching with their child in CDI and PDI, practiced giving commands (with and without coaching), and practiced delivering the time-out sequence when their child did not comply with a command. However, in session eight, coaches assisted parents in

establishing house rules unique to their own household. At the conclusion of the eighth session, parents were presented with certificates acknowledging their participation in the group PCIT workshops.

Treatment Integrity for Group PCIT

To assist coaches and coders in following the PCIT intervention, each coach and coder was provided a copy of the modified PCIT manual with detailed instructions on the format of sessions. Likewise, treatment integrity checklists that corresponded to specific sessions were completed by either the coach or coder. Appendix I displays the CDI treatment integrity checklist, and a treatment integrity checklist for PDI sessions is located in Appendix J. In addition, integrity checks were conducted by the graduate student researcher at all five Head Start locations for 25% of the CDI sessions and 25% of the PDI sessions using treatment integrity checklists and interobserver agreement for modified DPICS coding.

Dependent Variable

The dependent variable in this study was parent attendance for group PCIT workshops. To improve attendance, research staff contacted parent participants by phone to identify convenient times to meet for parent workshops, prior to scheduling PCIT workshops. Based on parent reported availability, PCIT workshops were scheduled at times and days most often identified by parents. To accommodate parent schedules and increase the likelihood of attendance, the group PCIT sessions were held up to two times per week at times reported most convenient for parents. For example, a center may provide the same session (e.g., Session 3) in the morning on one day and in the afternoon on the following day, teaching the same content. The

content of the curriculum was the same for the week across all centers, so if a parent could not attend at one time, then they could attend the other session for that week and still receive the same PCIT workshop content. Thus, every two weeks, the five Head Start centers held a total of ten group PCIT workshops covering only the PCIT curriculum for a specified intervention week, so all attendees would receive the same information and parent training, regardless of which day they attended. Likewise, each of the five Head Start centers began the intervention on the same week, and group PCIT sessions were simultaneously delivered biweekly, so all participants would complete group PCIT sessions at the same time. Group leaders at each of the Head Start centers tracked parent attendance with sign-in sheets for each workshop (Appendix C). Additionally, parents were provided incentives for participating in the workshops. Refreshments and childcare were provided, and parents received a $10 gift card for each group PCIT session attended, and they received a bonus $10 gift card if they attended all eight sessions. Attendance sheets were used to track gift card distribution at Head Start centers each week. Finally, prior to each scheduled group PCIT session, parents were contacted via a text message or a phone call to remind them of the upcoming session and confirm plans to attend.

Participants fell into one of three ordinal categories of the dependent variable that included zero sessions attended, one to four sessions, or five to eight sessions. Table 2 reflects the group PCIT attendance for the 82 participants in this study. Five parents attended all eight sessions, six parents attended seven sessions, eleven parents attended six sessions, five parents attended five sessions, nine parents attended four sessions, five parents attended three sessions, seven parents attended two sessions, 15

parents attended one session, and 19 parents attended no sessions.

Table 2 Sessions Attended

		n	%
Group 1	No Sessions	19	23.2
Group 2	1 Session	15	18.3
	2 Sessions	7	8.5
	3 Sessions	5	6.1
	4 Sessions	9	11.0
Group 3	5 Sessions	5	6.1
	6 Sessions	11	13.4
	7 Sessions	6	7.3
	8 Sessions	5	6.1
Total		82	100.0

Independent Variables

The independent variables in this study were responses provided on questionnaires during the enrollment phase of the study. Responses to demographic questions, parenting behaviors, and caregiver feeding styles were evaluated to determine their impact on group PCIT attendance. The demographic questionnaire elicited information related to age, income, marital status, relationship to Head Start child, education level, race or ethnicity, and sex of child (Table 1). Demographic questionnaires were completed by each parent participant during enrollment in the program (Appendix D). In this study, marital status, education level, and income were evaluated for its impact on group PCIT attendance. Additionally, responses from parenting practices questionnaires were used as predictors.

The Alabama Parenting Questionnaire–Preschool Revision (APQ–PR; Clerkin et

al., 2007), contains 32 questions relating to parent behaviors that are derived from the original APQ (Frick, 1991). Parents rate specific parenting behaviors on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). This rating scale measures three constructs related to parenting preschoolers (i.e., positive, inconsistent, and punitive parenting practices). For each of the constructs, a parent's total score is divided by the number of items within that construct to give an average score. The mean score at for parents in this study were 4.78 (i.e., "often" to "always" positive), 3.72 (i.e., "often" to "always" inconsistent), 4.16 (i.e., "often" to "always" punitive) Table 3. For this study, a new dichotomous variable was created for each construct which grouped mean scores into either a higher or lower level (i.e., 4.0 to 5.0 = "Often to Always" or 1.0 to 3.0 = "Never to Sometimes"). For example, if a parent's mean score was 4.3 for inconsistent parenting practices, that score was re-coded as 1.00, categorizing this parent as "Inconsistent = 1.00". If a parent's mean score was 3.9 or less, that score was re-coded as zero (i.e., Inconsistent [REF]) and indicated that parent was not a member of this category (i.e., endorsed inconsistent parenting practices "Never to Sometimes"). Recoding these three constructs (i.e., inconsistent, punitive, and positive) into new dichotomous variables allowed for the odds ratio to be interpreted more clearly during analysis.

The three constructs measured on the APQ-PR have demonstrated good internal consistency with Cronbach's alpha for positive parenting, inconsistent parenting, and punitive parenting at 0.82, 0.74, and 0.63, respectively. Furthermore, temporal stability has shown to be acceptable after one year, with alpha levels at 0.52, 0.59, and 0.80, for positive parenting, inconsistent parenting, and punitive parenting, respectively (Clerkin et

al.). Although there is limited research attesting to the overall validity of the APQ-PR, discriminant validity for subscales have been evaluated. One study found statistically significant correlations between inconsistent and punitive parenting and measures of externalizing behavior problems using the Child Behavior Checklist and the Diagnostic and Statistical Manual of Mental Disorders text revised, 4th ed. (DSM-IV-TR) (Osa et al., 2014).

Table 3 Alabama Parenting Questionnaire, PR

APQ-PR	Number Of Items	Intervention Total Score	Average Score
Positive	12	57.4	**4.78**
Inconsistent	7	26.1	**3.72**
Punitive	5	20.8	**4.16**

The Caregiver's Feeding Styles Questionnaire (CFSQ; Hughes et al., 2005) was developed for low-income minority parents, to provide insight into childhood obesity among disadvantaged populations. Parent responses on the CFSQ measure dimensions of demandingness (i.e., the degree to which parents demand their child to eat) and responsiveness (i.e., the type of strategies used to influence child-eating behaviors). Because there are currently no national norms published for this instrument, median splits on demandingness and responsiveness scores have been used to categorically place respondents into one of four feeding styles: (1) uninvolved (low demandingness and low responsiveness), (2) authoritative (high demandingness and high responsiveness), (3) indulgent (low demandingness and high responsiveness), and (4) authoritarian (high demandingness and low responsiveness The self-administered, 31-item questionnaire has been found to possess adequate to good internal consistency (Cronbach alpha of scales

range 0.71 – 0.86) and good test–retest reliability (range 0.73 –0.79) (Kremers et al., 2013). Finally, convergent validity for the CFSQ has been established by comparing the four feeding styles parenting subscales from the Parenting Dimensions Inventory-Short (PDI-S). Significant main effects for parent feeding styles were found, F (27, 602) = 2.26, $p < 0.001$, indicating good convergent validity (Hughes et.al., 2005). Of the 82 participants in this analysis, 12 (i.e., 14.6%) endorsed an uninvolved feeding style, 14 (i.e., 17.1 %) endorsed an authoritative feeding style, 22 (i.e. 26.8%) endorsed an indulgent feeding style, and 34 (i.e., 41.5%) endorsed an authoritarian feeding style (Table 4).

Table 4 *Caregiver Feeding Style Questionnaire*

	Frequency	%
Uninvolved	12	14.6
Authoritative	14	17.1
Indulgent	22	26.8
Authoritarian	34	41.5
Total	82	100

Analysis Plan

After participants completed surveys at their child's Head Start Center, the de-identified participant files were transported to the researchers' university and entered in the project's secure database. After data were entered, each participant's paper file was stored in a locked location on campus. Data were analyzed using IBM SPSS Statistics for Macintosh, Version 27.0 software.

An ordinal regression model was used to determine which of the independent variables (if any) had a statistically significant influence on group PCIT attendance.

Ordinal logistic regression is a statistical procedure that is used to predict behavior of an ordinal level dependent variable (i.e., number of groups attended) with a set of independent variables. In ordinal regression, the dependent variable is the ordered response category variable, and the independent variable may be categorical, interval or a ratio scale variable (Harrell, 2015). For categorical independent variables (e.g., caregiver feeding styles), predictions were made regarding the odds that a group (e.g., parents endorsing authoritative feeding styles) had higher or lower attendance compared to a comparative group (e.g., parents with other feeding styles).

Data Setup

Prior to analysis, independent variables of interest were screened for missing and extraneous data using SPSS's Interactive Data Preparation feature. Of the 85 parents-child dyads initially included in the study, three were eliminated do to failing one or more validity test during data screening. Screening included excluding cases with more than 50% of responses missing, and skewness and kurtosis issues were addressed using a +/- 3 cutoff criteria. Skewness that is +/- 3, then the variable is considered asymmetrical to the mean. When kurtosis is +/- 3, the variable's distribution is significantly different than the normal distribution in producing outliers (Westfall & Henning, 2013). The score for positive parenting slightly exceeded the guidelines of kurtosis with a value of - 3.023. However, after weighing the risks (i.e., incorrectly transforming the variable) and benefits (i.e., improving predictions of the model) associated with altering a variable, the decision was made to preserve this variable, with the understanding that it may impact findings during the analysis.

Additionally, bivariate correlations were conducted to explore the relationships between all variables of interest. Upon statistical review of all data, the Spearman's correlation was calculated for all remaining independent variables (Table 3). Because of the small sample size (N = 82) and the large number of possible independent variable categories (i.e., marital status, education level, income level, parenting practices, and caregiver feeding practices) with several levels of responses within many categorical variables, independent variable categories and response levels were merged when it was appropriate.

Four categorical independent variables (i.e., marital status, education, and income) assessed multiple levels within each category and were merged in order to improve the model (Ranganathan & Pramesh, 2017). Marital status initially included six levels of categorical responses (i.e., never married, married, separated, divorced, widowed, and not reported). Table 5 illustrates that the new level, "Not Married" is comprised of all respondent who indicated they had never been married or separated, divorced, widowed, or did not report marital status and accounted for 73.2% of the participants in this study. Although the new combined level is greater than the "Married" level, they were grouped on the common trait of being a single caregiver in the home. This characteristic is important information when considering how likely a parent is to attend group PCIT sessions when accounting for the additional stressors associated with single parenting (Magnuson & Duncan, 2019).

Within the category of education, participants were grouped on the basis of reported highest level of education attained. Because only one participant endorsed attending vocational or trade school, this level was merged with the "Attended some

college" level. The new response level was renamed "Some college or Trade school" and accounted for 29.3% (*n* = 24) responses in this category. Participants who reported having college degree were merged with those who endorsed graduate studies beyond college. The new level in the category of education was "College degree or higher" and was comprised of 17 participants (i.e., 20.7%). There was one person who did not report education level in this sample. For the purposes of analysis, that participant was coded as "Graduated high school or GED," the modal response of participants.

In regards to income, participants were given choices as to which range of earnings best reflected their total income (i.e., Less than $5,000, $5,000 - $14,999, $15,000 - $24,999, $25,999 – $34,999, $35,000 - $49,999, and Don't know). If the item was left blank, the response was coded in the "Don't know" category. Head Start programs have income limits based on family size, so it was unlikely that there were individuals who earned more than $49,999 per year. However, family size was not assessed during this study, so it was unclear if participants' income was low enough meet he federal poverty income threshold. In 2018, a single parent of one child would be considered in poverty if the household income was less than $17,308 (Lee, 2018). In order to ensure that a new category of poverty could be established, reported incomes less than $15,000 were re-categorized as poverty. Incomes reported greater than $15,000 were classified as "Not Poverty." It is likely that many of the parents who endorsed incomes greater than this threshold (e.g., $15,000 - $24,999) were still considered in poverty, if more than two people were living in the home. However, it could be concluded with great certainty that parents with at least one child in Head Start, who reported an income of less

than $15,000, would fall in the level of poverty. Table 3 reflects that over half of the participants (57.3%) indicated that their income was below poverty.

Table 5 *Combined Categories and Levels of Demographic Variables*

N = 82	*n*	*%*
Marital Status		
Married	22	26.8
Not Married	60	73.2
Level of Education		
Did not finish high school and no GED	16	19.5
Graduated high school or GED	25	30.5
Some college or Trade School	24	29.3
College degree or greater	17	20.7
Income		
Poverty	47	57.3
Not Poverty	35	42.7

Ordinal Logistic Regression Analysis

Data were initially analyzed using a cumulative odds ordinal logistic regression with proportional odds, considering all three possible outcomes of the dependent variable (i.e., no sessions, some sessions, most sessions). The independent variables were marital status, level of education, income, parenting practices, and caregiver feeding styles. The cut-off level of .05 was used was used when interpreting significance. In regards to adequacy of sample size, it has been recommended that a 10 to 1 ratio for number of participants to predictor categories is preferred (Tabachnick & Fidell, 2001). For this study, there were 82 participants and seven independent variables (i.e., marital status,

education level, income, inconsistent parenting, punitive parenting, positive parenting, and caregiver feeding style).

Assumption and Diagnostic Testing

Four assumptions for ordinal logistic regression must be met for this model to be appropriate. First, the dependent or criterion variable must be measured on an ordinal level. For this study, the dependent variable was group PCIT sessions attended and could be ranked from lowest to highest (i.e., zero sessions, one to four sessions, or five to eight sessions), reflecting an ordered level of measurement. Second, at least one of the independent variables must be either continuous, categorical, or ordinal. For this study, all independent variables were classified as categorical. The third assumption related to multicollinearity of continuous predictor variables. Multicollinearity occurs when more than two predictor variables are highly correlated with each other. Because there were no continuous independent variables in this analysis, the assumption of no multicollinearity was met.

The fourth assumption in an ordinal logistic regression is that proportional odds must be met (i.e., each predictor variable has the same effect at each cumulative split of the dependent variable). In order to investigate the assumption of proportional odds further, a $\chi 2$ likelihood ratio test comparing the fit of the proportional odds location to a model with varying location parameters was conducted (Cohen et al., 2003). In order to satisfy the assumption of proportional odds, the difference in the model fit (i.e., Chi-square) should be small and not statistically significant (i.e., $p > 0.05$). Results from Test of Parallel Lines indicated that the assumption of proportional odds was met, $\chi 2(11) = 9.479$, $p = 0.578$ (Table 6). If one or more of the above assumptions had not been met,

then ordinal logistic regression with the current identified variables would not have been appropriate. However, since all four assumptions were met, the ordinal logistic regression analysis was determined to be appropriate for analysis.

After assumption testing was complete, additional diagnostic procedures were conducted to assess model fit. Both the deviance and Pearson goodness-of-fit tests provide indications of how poorly the model fits the data (Pregibon, 1981). The deviance goodness-of-fit test indicated that the model was a good fit to the observed data, $\chi 2(121) = 138.791$, $p = 0.128$. The Pearson goodness-of-fit test also signified that the model was a good fit to the observed data, $\chi 2(121) = 133.805$, $p = 0.201$. Finally, a likelihood-ratio test was conducted to look at the variation in the model fit when the entire model was compared to the intercept-only model. Table 6 shows the Model Fitting Likelihood-Ratio statistic. This model significantly predicted the dependent variable over and above the intercept-only model, $\chi 2(11) = 15.212$, $p = 0.173$. These additional diagnostic procedures all indicated that the model was a good fit, so the ordinal regression analysis was conducted.

Table 6 *Regression Assumptions and Diagnostic Statistics Output*

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Test of Parallel Lines[a]				
Null Hypothesis[b]	148.051			
General	138.572[b]	9.479[c]	11	0.578
Goodness-of-Fit[a]				
Pearson		133.805	121	0.201
Deviance		138.791	121	0.128
Model Fitting Likelihood-Ratio[a]				
Intercept Only	163.263			

Table 6 *Regression Assumptions and Diagnostic Statistics Output*

Final	148.051	15.212	11	0.173

a. Link function: Logit
b. The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

CHAPTER III - RESULTS

Main Analysis

In order to predict the influence each predictor had on the dependent variable, a Polytomous Universal Model (PLUM) was used. For binary procedures within ordinal regression, GENLIN, a feature of the SPSS statistical package, was used. A cumulative odds ordinal logistic regression with proportional odds was run to determine the effect of marital status, income, parenting practices, education level, and caregiver feeding style on the number of group PCIT sessions each participant attended. Table 7 provides the parameter estimates of the ordinal regression and contains the information needed to interpret the analysis. The 95% confidence intervals of odds ratio are located under the "95% Wald Confidence Interval for Exp(B)" column (specifically, the "Lower" and "Upper" columns) and significance of the effect predictor variables contributed is under the "Hypothesis Test" column (i.e., the "Wald Chi-Square", "df" and "Sig." columns).

The first rows under the column heading “Parameter” are the threshold values for the equation that models the cumulative logits of $Sessions_{(ZERO)}$ and $Sessions_{(MOST)}$. The slope coefficient (i.e., “B” column) for $Sessions_{(ZERO)}$ is – 1.808. The next threshold row (i.e., $Sessions_{(MOST)}$) represents the threshold for the next cumulative logit, and has a slope coefficient of 0.404. These threshold values are necessary when making predictions to about category (i.e., predictor variable) probabilities.

Table 7 *Parameter Estimates*

			95% Wald Confidence Interval		Hypothesis Test				95% Wald Confidence Interval for Exp(B)	
Parameter	B	Std. Error	Lower	Upper	Wald Chi-Square	df	Sig.	Exp (B)	Lower	Upper
Threshold										
Sessions(ZERO)	-1.808	0.6688	-3.119	-0.498	7.311	1	0.007	0.164	0.044	0.608
Sessions((MOST)	0.404	0.6356	-0.842	1.65	0.404	1	0.525	1.498	0.431	5.206
Sessions(REF)	0a	.	.	.	.	.	.	1	.	.
Marital Status										
Married	-0.94	0.5085	-1.936	0.057	3.416	1	0.065	0.391	0.144	1.059
Married (REF)	0a	.	.	.	.	.	.	1	.	.
Education										
< High School	-0.508	0.6319	-1.746	0.731	0.646	1	0.422	0.602	0.174	2.076
High School Grad	-0.044	0.6548	-1.327	1.239	0.004	1	0.947	0.957	0.265	3.454
Some College	0.935	0.5812	-0.204	2.074	2.59	1	0.108	2.548	0.816	7.96
College or Higher	0a	.	.	.	.	.	.	1	.	.
Income										
Poverty	0.676	0.4697	-0.244	1.597	2.072	1	0.15	1.966	0.783	4.938
Poverty(REF)	0a	.	.	.	.	.	.	1	.	.
APQ-PR										
Inconsistent	-0.341	0.4696	-1.261	0.579	0.528	1	0.468	0.711	0.283	1.785
Inconsistent (REF)	0a	.	.	.	.	.	.	1	.	.
Punitive	0.557	0.497	-0.417	1.532	1.258	1	0.262	1.746	0.659	4.626

Table 7 *Parameter Estimates*

Punitive (REF)	0a	.	.	.	.	.	.	1	.	.
Positive	-0.835	0.8807	-2.561	0.892	0.898	1	0.343	0.434	0.077	2.439
Positive (REF)	0a	.	.	.	.	.	.	1	.	.
CFS										
Uninvolved	-0.887	0.6992	-2.258	0.483	1.611	1	0.204	0.412	0.105	1.621
Authoritative	0.004	0.6503	-1.271	1.279	0	1	0.995	1.004	0.281	3.592
Indulgent	-0.248	0.5725	-1.37	0.874	0.187	1	0.665	0.781	0.254	2.398
Authoritarian (REF)	0a	.	.	.	.	.	.	1	.	.
(Scale)	1.154b									

Dependent Variable: Total Sessions attended

Model: (Threshold Sessions Attended), Married, education, Poverty, Inconsistent, Punitive, Positive, Feeding Style

a Set to zero because this parameter is redundant.

b Computed based on the Pearson chi-square.

Dichotomous predictor variables in the model included marital status, income level, and each of the three levels of the APQ-PR (i.e., inconsistent parenting, punitive parenting, and positive parenting). The coding of these variables was such that married participants were coded "0.00" and parents who were not married were coded as “1.00.” The GENLIN procedure in SPSS automatically makes the last category the reference category, so dichotomous variables were coded with “0.00” to indicate that they were not a member of that category. For example, married participants were represented in the $\text{Married}_{(\text{REF})}$ row.

There were no significant effects for the dichotomous variables in the ordinal regression analysis. The level of each categorical independent variable, did not significantly predict how many sessions a parent would attend. Therefore, it would be futile to interpret probabilities and their impact on the dependent variable.

Part of the ordinal logistic regression procedure involves running separate binary logistic regression analyses for levels of the dependent variable. One logistic analysis was conducted for zero sessions attended, and one was conducted for most sessions attended. The middle level (i.e., some sessions) served as the reference group. A Hosmer and Lemeshow test was used to assess how adequate the model fit for an individual analysis when the predictor variable was significant. Results indicated that poverty was significant ($p = 0.044$) in predicting attendance to zero sessions of group PCIT. The Chi-square statistic for the Hosmer and Lemeshow test was not significant ($p = 0.361$), indicating that the model was not a poor fit. Based on these results, the relative odds (i.e., odds ratio) indicated that parents who reported incomes below the federal poverty

level were 4.173, CI 95% [1.037, 16.785] times more likely to attend zero sessions than those who *did not* report incomes below the poverty level.

Revisiting Research Questions and Hypotheses

This study aimed to identify variables that predicted group PCIT attendance for parents of Head Start children. Research questions were posed and addressed through statistical analysis using an ordinal logistic regression model. The predictor variables used in this study were marital status, education level, income level, parenting practices, and caregiver feeding styles. The dependent variable in this study was the level of group PCIT sessions a parent attended (i.e., No sessions, Some Sessions, or Most Sessions).

The first research question related to marital status asked: Does marital status predict group PCIT attendance? It was hypothesized that caregivers who reported being married would attend group PCIT sessions more than individuals who reported being single, widowed, separated, or divorced. Based the model used in the ordinal logistic regression, being married did not predict the number of group PCIT sessions attended, $p > 0.05$. In other words, the odds of a married parent attending more group PCIT sessions than an unmarried person did not have a statistically significant effect on the predicted outcome. Consequently, there was not enough information provided by the analysis to reject the null hypothesis for this question.

Secondly, this study investigated the impact that education level had on attendance to group PCIT sessions. It was hypothesized that individuals who reported having a high school diploma or a higher level of education would be more likely to attend group PCIT than individuals who did not have a high school diploma. Results indicated that education level did not have a statistically significant effect on the

prediction of group PCIT attendance. Based on these findings, the null hypothesis could not be rejected.

Question three asked if living below the poverty threshold impacted the number of group PCIT sessions attended. It was hypothesized that individuals who reported income levels below poverty level were less likely to attend group PCIT sessions than those who did not report incomes below poverty level. Based on the findings in these analyses, poverty level was significant in predicting the level of sessions attended. The odds ratio of attending zero sessions for parents endorsing poverty versus those who did not was significant, $p = 0.044$. Therefore, the null hypothesis was rejected (i.e., there was an effect for poverty).

Research question four related to variables that were measures of parenting practices. For the APQ-PR, predictions were made that parents who endorsed positive parenting practice would be more likely to attend group PCIT sessions than those who did not endorse positive parenting practices. However, based on this analysis, positive parenting was not a significant predictor of sessions attended. For those who endorsed inconsistent parenting practices, the odds ratio of attending fewer sessions than those who did not endorse inconsistent parenting practices was not significant. The odds ratio for parents who endorsed punitive parenting versus those who did not endorse punitive parenting was not significant, $p > 0.05$. Based on these findings, the null hypotheses could not be rejected.

Similarly, levels within the CFSQ were predicted to impact group PCIT attendance. It was hypothesized that parents with authoritative caregiver feeding styles would attend sessions more often than parents who were classified as uninvolved,

indulgent, or authoritarian. It was also hypothesized that individuals who endorsed uninvolved caregiver feeding styles would attend less group PCIT sessions than other feeding styles. Results from an omnibus test of model fit indicated that caregiver feeding style did not have a statistically significant effect on the amount of group PCIT sessions attended. Based on these findings, the null hypothesis could not be rejected, and conclusions regarding the impact feeding style has on parent attendance could not be made.

CHAPTER IV – DISCUSSION

Overview of Study

This study was conducted as part of a larger research project that investigated the impact of a preschool obesity prevention program (IPOP). There were 82 parents included in this study. Participants completed questionnaires and surveys at their child's Head Start center. The independent variables were selected based on their relevance to the study. Based on reported demographics, the parents who enrolled in the study were considered an at-risk population.

Over half of the parents earned less than $15,000 per year. Of those participants, 27 reported incomes of less than $5,000. Of the 82 parents, 16 did not have a high school diploma and 44 reported never being married. Considering the role that economic hardship plays in poor outcomes for children's emotional, behavioral, and physiological, it was important to the researchers to have as much parent participation in the group PCIT parenting sessions as possible. Gift cards, childcare, and snacks were provided at each session to promote continued attendance. Parents were contacted via phone or text if they requested a reminder call before the appointment, and extensive efforts were made to accommodate schedules of parents (e.g., sessions provided at multiple times during the week, based on parent preference). Even with these measures in place, attendance was overall poor. This study aimed to shed light on the factors that predict group PCIT attendance in this specific population (i.e., Head Start families at risk for their child to develop an emotional or behavioral disorder and/or other health related problems).

Key Findings

In order to evaluate the effects of identified predictor variables on group PCIT attendance, an ordinal logistical regression analysis was conducted. Variables of interest were marital status, extremely low income (i.e., poverty level), education level, and parenting behaviors. Special care was taken in selecting variables that were relevant to the research questions. Parents reported other demographic categories (e.g., race and ethnicity, gender of Head Start child, SNAP enrollment, relationship to child) that were not evaluated in this study. Poverty was included as a variable because of the overwhelming evidence linking low socioeconomic status to parenting stress, harsher parenting practices, and accompanying behavioral problems in children (Carter et al., 2010). Because most of the parents in this study earned extremely low incomes, the researchers hoped that group PCIT would be of interest to parents who may have been experiencing difficulties navigating barriers associated with economic hardship. It was hypothesized that this would be a predictor of poor attendance, due to the added burden of scheduling (i.e., taking off work, getting a ride to the school). Because of the benefits associated with attending group PCIT and the added burden of coming to the sessions, it was of interest how this variable would predict outcome for parent attendance. Results suggested that people earning lower incomes were less likely to attend any sessions. Parents who reported incomes below $15,000 per year were more than 4 times as likely to attend no sessions than those who reported incomes higher than $15,000. This finding supports prior research that found economic hardship serves as a barrier for parent attendance to mental health appointments for their children (Bornheimer et al., 2018).

Marital status was also of interest because having an additional adult in the household while parenting would potentially allow parents more flexibility to attend sessions. However, it was unknown if being married would actually predict less group PCIT attendance for a different reason (e.g., less interest, busier schedules). Due to small sample size and skewed distribution of responses, the six original levels listed on the demographic form were condensed to two levels. Marital status was not found to have a significant effect on the outcome when predicting group attendance.

Education level was of interest to the investigator in this study. The families in this study had at least one child in Head Start, a program created to promote positive education experience and success. However, 20% of the parents reported not having a high school diploma or GED. Group PCIT sessions provided helpful training and coaching for parenting skills, and it gave parents opportunities to discuss struggles and concerns they were experiencing at home. For some parents, the group sessions were an opportunity to discuss appropriate and inappropriate discipline strategies with each other. Each PCIT coach moderated the discussions and offered helpful information regarding parenting practices when necessary. Although parents with varying levels of education reported enjoying the sessions anecdotally, attendance could not be predicted by a person's education.

Parenting practices included in the analysis were inconsistent, punitive, and positive. Responses on these measures indicated minimal differences between mean scores. Results from the ordinal regression found no evidence that parent endorsing inconsistent behaviors was more or less likely to attend group PCIT than a parent who

did not endorse inconsistent parenting. This held true for all three constructs on the APQ-PR.

The CFSQ examined caregiver feeding practices and categorized parents in to one of four groups based on their responses. Parents that were classified as uninvolved were suspected to attended group PCIT less often than those who were not classified as uninvolved. Authoritative parenting practices were predicted to improve the odds of a parenting attending Group PCIT sessions. However, no measure of the CFSQ was found to have statistically significant effect on predicting attendance of group PCIT sessions.

Implications

Based on the descriptive data obtained when parents completed initial questionnaires, families in this study endorsed many risk factors for having a child develop an emotional or behavioral disorder at some point in their development (e.g., single parent households, low incomes and education status). Among these risk factors, poverty level was the only predictor variable that was shown to have a significant influence on group PCIT attendance. Findings suggested that parents earning less money (i.e., endorsed poverty level income) were less likely to attend any group PCIT sessions. However, based on the discussed methodologies used in the study, this finding may not be accurate. Ironically, the most problematic aspect to the statistical analysis was small sample size, which could have been contributed to one or more of the predictor variables examined in this analysis (e.g., poverty, marital status, parenting style).

In order to improve parent attendance outcomes for group PCIT sessions in low income rural communities, researchers may employ some additional strategies, not used in this study. One way to improve the likelihood of success would be to enlist the

assistance of built-in community supports (i.e., churches, local health departments, Family YMCA) when recruiting large groups of people for this type of research (Berkman et al., 2000).

As discussed in the methodologies, parents received reminder texts and/or phone calls the day before a scheduled group PCIT session. However, when the phone number was not working, the parent could not be contacted. Obtaining additional methods of contacting parents (e.g., second phone number, email address) may have been helpful. Concerns related to internet access for checking emails, could be addressed by providing vouchers for parents to access free cellular or Wi-Fi services.

Finally, problems with transportation should be considered when recruiting parents who have lower incomes living in rural communities. Public transportation is often unavailable and parents who do not own a vehicle depend on family members or friends for transportation (Henning-Smith et al., 2017). Some possible solutions would have been to allow parents to ride the bus with their child to school on days when group PCIT would be offered, then provide transportation for the parent to return home after the session. Additionally, facilitating communication between parents to encourage carpooling may have been helpful. Utilizing build-in community supports to overcome transportation barriers (e.g., church vans or community volunteers to transport parents to sessions).

Limitations

There were many limitations to this study. The first limitation was that conclusions regarding poverty's impact on a parents attending group PCIT sessions could not be made with confidence. The only significant finding in this study was that poverty

predicted attending zero group PCIT sessions. Results indicated that parents in the poverty group were more likely to attend zero sessions than parents not identified as poverty level. However, this does not imply that parents earning more than $15,000 per year were non-poverty participants and more likely to attend sessions than those who earned lower incomes. Because of methods used in grouping of variables and structure of the demographic questionnaire, it is possible that many of the parents who earned below the federal poverty level were not counted. Factors such as size of household (i.e., larger households having higher income limits) or not reporting income may have incorrectly classified parents' economic status. Therefore, future research should make efforts to calculate poverty level based on income and family size.

Another limitation was the small sample sizes for groups within the dependent variable. Of the 82 parents who completed demographic questionnaires and surveys, only 5 attended all eight sessions and 19 parents attended zero sessions. There are many possible explanations for poor attendance that contributed to the regression model poorly predicting attendance. The first is that parents were often unclear on the nature of the group PCIT sessions. Miscommunication between Head Start administrative personnel and parents made promoting the sessions difficult for researchers. Examples of problems encountered included dates of sessions that were incorrect, centers distributed gift cards in a delayed fashion, and parents locked out of building at scheduled times for group PCIT session. The additional hassle of dealing with these problems may have impacted parent's group attendance. Future studies may enquire about negative experiences families have had with research in the past, prior to the onset of the study. In doing this, some of the potential barriers could be addressed on the front end.

A third major limitation in this study was the methods used to consolidate predictor variables included in the model. In order to reduce the complexity of the model, some categories were combined. This may have led to inaccurate interpretations of categories. For example, people who reported being married were classified separately from those who reported never being married, divorced, widowed, or separated. However, researchers did not know the make-up of households and left questions relating to family support unanswered. For families in rural communities earning lower incomes, there is often a greater likelihood of having extended family members living in the home (Jackson et al., 2020). Future research should clarify household make-up to determine if a non-married parent was living in a home with another adult (e.g., parent, aunt, sibling) who provided childcare or other forms of support (e.g., transportation, financial).

A fourth limitation of this study was that race or ethnicity was not included in the model. Of the parents in this study, 73.2% were identified as black or African American. Although this finding was reported qualitatively, it was not explored further through statistical analysis. Three of the group PCIT coaches and all of the PCIT Coders were black or African American, so it was not suspected that poor attendance was due to under identifying with the PCIT coaches. Perhaps, if the ethnic validity of the intervention had been more carefully addressed during the pilot study, parent attendance may have been enhanced. That is, if more families included in the pilot study had contributed more thorough information about the extent to which the intervention matched their cultural values, then the intervention could have been modified prior to implementation and parents may have attended more sessions (Barnett et al., 1995). However, this still does not account for the 23.2% of parents that did not attend a single session. As stated

previously, poor description of the intervention by Head Start administrators, which is related to poor perceptions of ethnic validity, may have been related to parents never attending a session. Therefore, future studies should more carefully address the ethnic validity of the intervention and pre-intervention information to increase the likelihood that parents attend initial sessions.

Conclusions

In this study, the researcher hoped to identify variables that would predict if a parent attended a group PCIT session or not. An ordinal logistic regression was conducted with the dependent variable sessions attended and multiple categorical or binary independent variables. The independent variables regressed in this study included marital status, income, education, parenting practices, and caregiver feeding style. Results from the analysis showed no statistically significant effects that could accurately make predictions about its influence on the dependent variable. Problems with the sample size and data set were noted. Future researchers should consider these findings when conducting future studies similar to this one.

APPENDIX A – IRB Informed Consent

ORI | Office of Research Integrity

INSTITUTIONAL REVIEW BOARD

STANDARD (SIGNED) INFORMED CONSENT

STANDARD (SIGNED) INFORMED CONSENT PROCEDURES

This completed document must be signed by each consenting research participant.

- The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval.
- Signed copies of the consent form should be provided to all participants.

Last Edited July 20th, 2017

Today's date:12/20/17

PROJECT INFORMATION

Project Title: Impact of a Preschool Obesity Prevention Curriculum Enhanced with Positive Behavioral Supports (IPOP)

Principal Investigator: Carol Connell	Phone: 601 266-6341	Email: carol.connell@usm.edu
College: Health	Department: Nutrition and Food Systems	

RESEARCH DESCRIPTION

1. **Purpose**:

The purpose of this research project is to see if a new program called IPOP can help prevent obesity in preschool age children. The project is a joint effort of the Mississippi State Department of Health (MSDH), Mississippi Action for Progress (MAP, and The University of Southern Mississippi (USM).

This project involves offering the IPOP program at some Head Start Centers and not at others, then comparing the different centers, to see if the program produces changes that help young children have a healthy body weight. If the IPOP program works, then it can be shared with other Head Start Centers in Mississippi and in other states.

The IPOP program trains teachers and parents to use positive child behavior strategies and healthy child feeding behaviors, and educates preschool children and their parents about eating healthy foods and being active in play.

2. **Description of Study**:

Some MAP Head Start Centers in south Mississippi will enroll teachers and mothers/caregivers and their children in the IPOP study. Children in half the Centers will participate in the Hip Hop to Health Jr. curriculum as part of their regular Head Start program. Hip Hop to Health is an 8-week curriculum that teaches preschool children about healthy eating and being physically active. Teachers will be trained in the curriculum and implement the curriculum in their classrooms. Teachers and mothers/caregivers will also be trained in positive child behavior strategies, and be encouraged to implement these strategies in their classrooms (teachers) and at home (mothers/caregivers).

To evaluate the IPOP program, researchers will compare children, teachers, and mothers/caregivers at Head Start Centers that receive the IPOP program (program centers), with children, teachers and mothers/caregivers at Centers that do not receive the program (control centers). This will help show if the IPOP program is effective.

7. **Participant's Assurance:**

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

CONSENT TO PARTICIPATE IN RESEARCH

Participant's Name: _____

Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116, Hattiesburg, MS 39406-0001, 601-266-5997.

By writing in my child's name below and signing this form, I also give permission for my child to participate in the IPOP project as a research participant.

_____ _____

My child's full name (first, middle, last) My child's age

_____ _____

Research Participant **Person Explaining the Study**

_____ _____

Date **Date**

APPENDIX B– IRB Approval

MISSISSIPPI STATE DEPARTMENT OF HEALTH

August 1, 2017

Institutional Review Board Approval Declaration

RE: **FOA Number:** MP-CPI-17-004
FOA Title: Empowered Communities for a Healthier Nation

Organization: Mississippi State Department of Health
P.O. Box 1700
570 East Woodrow Wilson
Jackson, MS 39215
(601) 576-7634

Authorized Representative: Dr. Victor Sutton, PhD, MPPA
Victor.Sutton@healthyms.com

Project Title: Impact of a Preschool Obesity Prevention (I-POP) Curriculum Enhanced with Positive Behavioral Supports

The Mississippi State Department of Health is seeking funding for childhood obesity research from the Department of Health and Human Services, Office of the Secretary, Office of Minority Health (CFDA Number 93.137). In accordance with 45CFR Part 46, Human Subjects Protection and Agency policy, MSDH will seek Institutional Review Board approval during the first year of grant implementation.

The investigators understand and accept the responsibility to comply with the standards and requirements promulgated by the Institutional Review Boards (IRB) of both the Mississippi State Department of Health and the University of Southern Mississippi. No human subjects research activities will convene until IRB approval has been secured.

Sincerely,

Dr. Victor D. Sutton, Director
Office of Preventive Health

APPENDIX C – Attendance Form

Record of Parent Attendance

Date: _____ **Name of Coach:** _____

Session #: _____ **Name of Center:** _____

Name of Parent	Parent Signature

APPENDIX D – Demographic Questionnaire

[PARTICIPANT ID Number]: _____

Demographic Questions (DEM)

Please answer the following questions by placing a checkmark (✓) for the best choice or filling in the blank.

Please check one: [ ] Parent [ ] Teacher

DEM01. Are you male or female?

_____ **Male** _____ **Female**

DEM02. What is your age? _____

DEM03. Do you consider yourself to be Hispanic or Latino?

A person of Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race.

_____ **Yes, Hispanic or Latino** _____ **Not Hispanic**

DEM04. What race do you consider yourself to be? Select one or more of the following?

_____ **American Indian or Alaska Native**
_____ **Asian**
_____ **Black or African American**
_____ **Native Hawaiian or other Pacific Islander**
_____ **White**
_____ **More than two of the above**
_____ **Don't know**

DEM05. Do you speak a language other than English at home?

_____ **Yes** _____ **No, Skip to question DEM07**

DEM06. What is this language? Please write on the line below.

_____

For example: Spanish, Italian, Vietnamese

DEM07. What is your occupation? If you are retired, what was your previous occupation?
Please write below

_____

DEM08. What is your marital status?

_____ **Now Married**
_____ **Widowed**
_____ **Divorced**
_____ **Separated**
_____ **Never Married**

DEM09. What was the last level of school you have completed? _____

_____ **< High School/GED**
_____ **12th Grade (High School Grad/ GED)**
_____ **Trade or VOC School**
_____ **Some College**
_____ **College Degree**
_____ **Some Graduate or Professional School**
_____ **Graduate Level or Professional Degree**

DEM10. Are you participating in any of the following nutrition programs right now?

(CHECK ALL THAT APPLY)

_____ **The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)**
_____ **Body and Soul**
_____ **Weight Watchers**
_____ **Supplemental Nutrition Assistance Program (SNAP) or EBT**
_____ **The Food Stamp Nutrition Education (SNAP-Ed) or Supplemental Nutrition Assistance Program Education (SNAP-Ed)**
_____ **Others, please give name**_____
_____ **None of these**

DEM11. What is your relationship to the Head Start child you are enrolling in IPOP?

_____ **Mother**
_____ **Grandmother**
_____ **Father**
_____ **Grandfather**
_____ **Auntie**
_____ **Legal Guardian**
_____ **Other (please explain)**_____

DEM12. Of these income groups, please check (✓) which number best represents your household's total income in the last 12 months?

_____ **Less than $5000**
_____ **$5,000-$9,999**
_____ **$10,000-$14,999**
_____ **$15,000-$19,999**
_____ **$20,000-24,999**
_____ **$25,000-29,999**
_____ **$30,000-34,999**
_____ **$35,000-39,999**
_____ **$40,000-44,999**
_____ **$45,000-49,999**
_____ **$50,000-54,999**
_____ **More than $55,000**
_____ **Don't Know**

APPENDIX E - Treatment Integrity Form

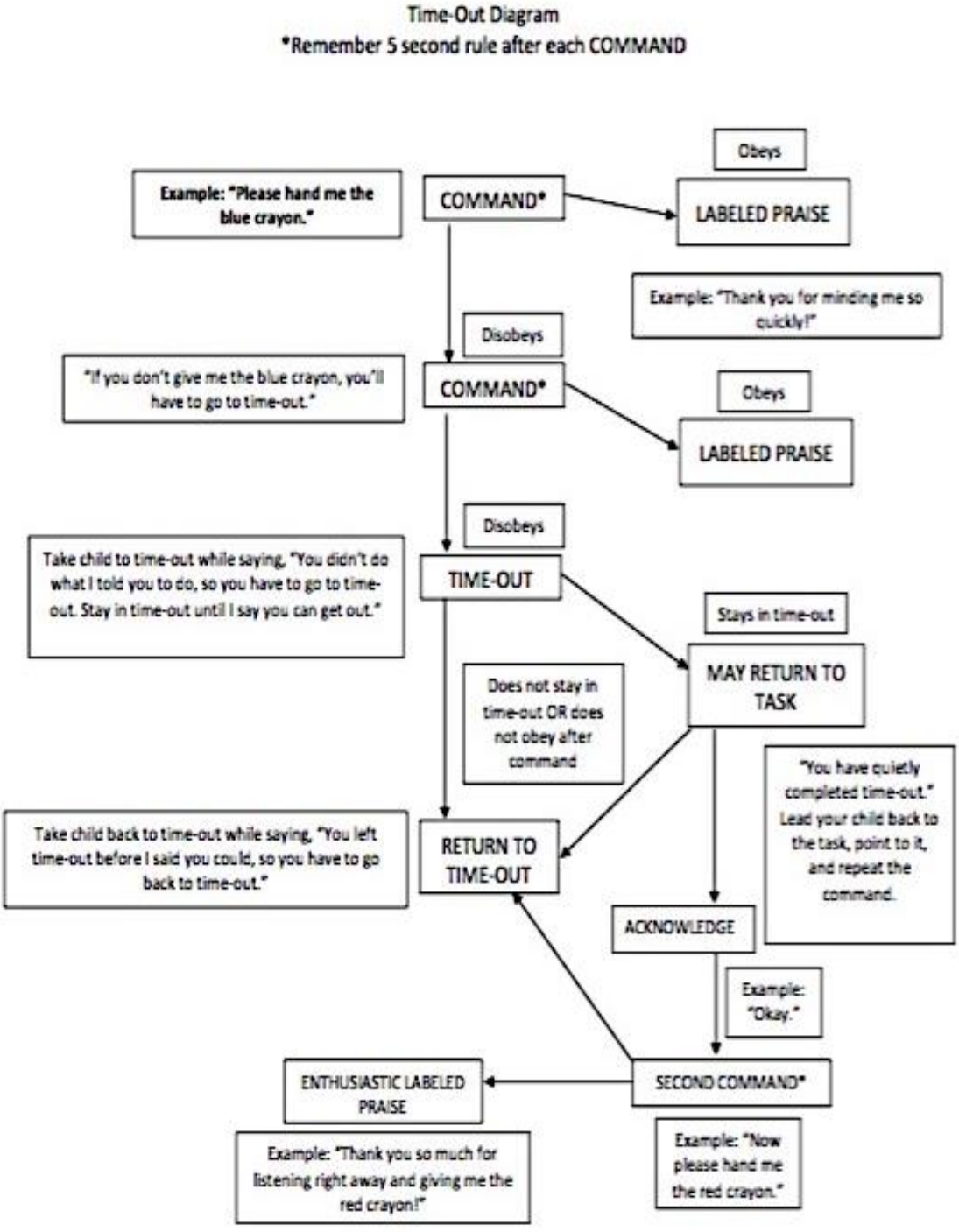
Treatment Integrity Checklist for Group PCIT Coach and ECE Training			
DAY 1	yes	no	n/a
Discussed broad responsibilities of coaches and coders			
Provided rationale for using modified PCIT for study			
CDI Teach explained using BST			
Give overview of modified PCIT			
Overview of CDI & why it's taught first			
Pride Skills & Don't behaviors			
Role play			
Videos			
Address questions from coaches and coders			
CDI Coaching sessions (2-4) covered using BST			
Role play Time-In using PRIDE skills with coaches acting as parents while trainers act as "coaches"			
Corrective feedback			
DAY 2			
PDI Teaching explained using BST			
Overview of PDI			
Coaches practice CDI & PDI while trainer gives support & feedback			
ECE Specialists complete DPICS each time coach/trainer dyad practices CDI & PDI			
PDI Coaching sessions (6 – 8) covered using BST			
Effective commands			
Time-out			
House rules			
Coaches homework assigned: video CDI sessions using PRIDE skills			
Trained ECE's on DPICS using BST			
PRIDE skills do's and don'ts with Role play and corrective feedback			
Coding effective commands			
Homework assigned to ECE's to code coaches video homework			

Child-Directed Interaction (CDI) Homework

Parent _____ Child _____

Day/Date	Check each day you did 5 minutes of CDI	Activity	Concerns or questions about CDI
Monday _____			
Tuesday _____			
Wednesday _____			
Thursday _____			
Friday _____			
Saturday _____			
Sunday _____			

APPENDIX G – Time Out Diagram



APPENDIX H – PDI Homework

PDI Homework Sheet

Day of Week	Date	Listening Practice*	Time-Out**	Notes/Comments:
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

***Listening Practice:** Did you do 5 min of PDI practice following CEDI where you had your child follow commands during play?

****Time-Out:** Make a tally mark for each time child went to time-out for disobeying a real command following a warning.

APPENDIX I – Treatment Integrity Checklist for CDI Sessions

Treatment Integrity Checklist for CDI Teach: Session 1 Rater: _____

Head Start center: | **Date:**

Item	Yes	No	NA
Did group cohesion building activity			
Gave parents an overview of modified PCIT			
Gave parents an overview of CDI and why it's taught first			
Reviewed and Taught PRIDE skills			
Showed video of PRIDE Skills during playtime			
Roleplay using PRIDE Skills: Coach 1st, then parents roleplayed w/feedback			
Reviewed and roleplayed Don't behaviors			
Showed videos			
Introduced Homework and gave assignments			
ECE prompted Coach to do anything they missed			
Completed record of attendance for parents			
Notes/Comments:			

Treatment Integrity Checklist for CDI Coach Session: _____ Rater: _____
(2, 3, or 4)

Head Start Center: | **Date:**

Item	Yes	No	NA
Give a general overview of the skills covered last session			
Review homework			
Orient child to CDI			
Code each caregiver and child dyad in CDI for 5 minutes (30 min. total)			
Give each caregiver brief feedback on skills			
Set goals for coaching			
CDI role-play with Coach and child			
Coach each caregiver and child dyad in CDI for 5 minutes (30 min. total)			
Introduce in-session CDI skills progress record to caregivers			
Give homework sheets and discuss what to emphasize			
Notes/Comments:			

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