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An Examination of Parental Skill Acquisition Resulting From a State-Wide Dissemination of SafeCare®

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ABSTRACT

Erin McFry

An Examination of Parental Skill Acquisition Resulting from a State-Wide Dissemination of SafeCare. (Under the direction of Daniel J. Whitaker, Ph.D.)

Family level data was collected from those served in a state-wide rollout of SafeCare® in Georgia between January of 2010 and November of 2011. Families who received SafeCare were trained in the intervention's three modules: Parent-Child or Parent-Infant Interaction, Home Safety, and Child Health. The purpose of this study was to measure changes in parental skill demonstration by analyzing pre- and post-training assessments. Additionally, parental demographic characteristics were also assessed for associations with skill acquisition within each module. Follow-up analysis concluded that families displayed increases in parenting skills among all SafeCare modules. Moderator analysis showed that those with only one child showed greater decreases in home hazards as did those with two children. Also, it was found that income level moderated performance in the Parent-Child Interaction module with participants below the median income level exhibiting a greater increase in PCI skill demonstration than those above the median income level. Further research should consider modeling multiple parental characters (e.g. CPS status and income) with skill performance over time. Lastly, additional research should aim to determine if those who exhibit increases in parenting skills are also less likely to experience future child maltreatment reports.

INDEX WORDS: demographic characteristics, parental characteristics, parental skill acquisition, implementation research, parent-training programs, evidence-based programs, SafeCare model

An Examination of Parental Skill Acquisition Resulting From a

State-Wide Dissemination of SafeCare®

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B.A., Georgia State University

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- Ryan, K., Whitaker, D. J., Sefl-Brown, S., & **McFry, E.** (November, 2010). *Examination of statewide dissemination for a behavioral parent training program: What are the predictors of successful second generation SafeCare trainers?* Poster session presented at the annual convention of the Association of Behavioral and Cognitive Therapies, San Francisco, CA.

- Whitaker, D. J., Self-Brown, S., Ryan, K., **McFry, E.**, & Lutzker, J. R. (November, 2010). *Factors related to implementation in a statewide rollout of an evidence-based parent-training model.* Paper presented at the annual convention of the Association of Behavioral and Cognitive Therapies, San Francisco, CA.

- **McFry, E.,** Ryan, K., Hodges, A., Whitaker, D. J., Self-Brown, S., & Lutzker, J. R. (November, 2011). *An examination of organizational and individual characteristics that predict uptake of a behavioral parent-training program.* Poster presented at the 45th Annual Association for Behavioral and Cognitive Therapies Convention, Toronto, Canada.

Publications

- Self-Brown, S., **McFry, E.,** Montesanti, A., Edwards-Gaura, A., Lutzker, J., Shanley, J., & Whitaker, D. (In press). SafeCare: A Prevention and Intervention Program for Child Neglect and Physical Abuse. *Treatment of Child Abuse: Common Ground for Mental Health, Medical, and Legal Practitioners.*

- Whitaker, D.J., Ryan, K. A., Self-Brown, S., Lutzker, J. R., Shanley, J. R., Edwards-Gaura, A., **McFry, E. A.**, Moseley, C. N., Hodges, A. E. (2011). Initial implementation indicators from a statewide rollout of SafeCare within a child welfare system. *Child Maltreatment, 17*, 96-101.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

Child maltreatment (CM) is a major public health problem in the U.S. which is estimated to cost $124 billion dollars a year and results in more than four child deaths a day (Fang, Brown, Florence, & Mercy, 2012; U.S. Department of Health and Human Services, 2011). In recent years, over 3 million reports of child abuse or neglect have been reported annually and of them over 900,000 cases are substantiated (U.S. Department of Health and Human Services, 2011). Growing research highlights the negative effects incurred by the victims of CM which begin early and comprise deficits related to physical health and psychological health including poor mental and emotional health, as well as cognitive and social difficulties (Felitti et al., 1998; Gilbert et al., 2009; Springer, Sheridan, Kuo, & Carnes, 2007; Watts-English, Fortson, Gibler, Hooper, & De Bellis, 2006). Longitudinal data also show that victims of CM are also at an increased likelihood to be arrested as a juvenile, abuse their own children, commit violent crimes, and abuse substances (White & Widom, 2003; Widom, Schuck, & White, 2006).

Intervention scientists have demonstrated that there are effective techniques for addressing child maltreatment which have been shown to reduce recidivism (Mark Chaffin & Friedrich, 2004). These interventions involve structured, skill-based behavioral training curriculums which incorporate validated measurement tools and include fidelity monitoring to ensure reliability and validity. Unfortunately, the most common models used in child welfare settings do not utilize evidence-based practices (EBP) and have not been shown to reduce CM (Aarons & Palinkas, 2007; Bickman, Heflinger, Lambert, & Summerfelt, 1996). However, experts have demonstrated that EBP's construction meshes particularly well with the mission of the child welfare system by providing established protocols for use in dissemination of large-

scale initiatives and by producing of measurable outcomes for determining effectiveness (Mark Chaffin & Friedrich, 2004).

One particular EBP that is used among parents with children 0-5 years old is SafeCare (SC), which offers skills-training in three areas: child health, home safety, and parent-child/infant interaction. SafeCare has been shown to improve parenting behaviors and reduce child welfare recidivism (Bigelow & Lutzker, 2000; M. Chaffin, Hecht, Bard, Silovsky, & Beasley, 2012; Delgado & Lutzker, 1988; Gaskin, Lutzker, Crimmins, & Robinson, 2012; R. M. Gershater-Molko, Lutzker, & Wesch, 2002; R.M. Gershater-Molko, Lutzker, & Wesch, 2003; J. R. Lutzker, K. M. Bigelow, R. M. Doctor, R. M. Gershater, & B. F. Greene, 1998; Mandel, Bigelow, & Lutzker, 1998; Metchikian, Mink, Bigelow, Lutzker, & Doctor, 1999). SafeCare, utilizes validated measurements that assess parental skill acquisition enabling its purveyors to track the curriculum's effectiveness. In addition, the SC dissemination model includes fidelity monitoring for providers to ensure that services being delivered are valid and reliable.

Although research has demonstrated that there is strong support of SC's effectiveness in reducing CM rates and recidivism, less data has been published that assesses parental skill acquisition among a large study population where SafeCare has been disseminated to community level providers who deliver it to parents. In additional, little is known about which parental factors may affect parents' ability to learn the SafeCare skills, and thus may moderate skill acquisition.

By analyzing data collected in Georgia among a state-wide rollout of SafeCare, I will address the following research questions:

1. Do participants show an increase in parenting-skills after participating in the SafeCare curriculum?

2. Do demographic characteristics (e.g. parent age, number of children in the household, CPS status, income, and marital status) serve as moderators for parental skill acquisition?

Answers to the proposed research questions will yield valuable insight into the program's effectiveness across varying demographic factors and could serve to influence the model's dissemination in order to better serve clients and more efficiently prevent child maltreatment.

Chapter II

LITERATURE REVIEW

Overview of Child Maltreatment

In the United States, child maltreatment is a serious public health problem affecting 6.2 million children annually (U.S. Department of Health and Human Services, 2011). The majority of child maltreatment cases, 78.5%, are the result of neglect, 17.6% are the result of physical abuse, and less than 10% are the result of sexual abuse. Children under the age of one are at the highest risk for victimization and over 80% of child deaths include victims under the age of four. In the United States, reports of child maltreatment in 2011 included 43.9% White victims, 22.1% Hispanic victims, 21.5% African-American victims, and 12.5% of victims were of other the races. Fang and colleagues reported that in 2010, each nonfatal child maltreatment case resulted in $210,012 spent per victim's lifetime including adult medical costs, productivity losses, child welfare costs, criminal justice costs, and special education costs (Fang et al., 2012). Using incidence rates from 2008, these authors calculated that new reports of child maltreatment occurring that year accounted for a total burden of $124 billion.

It is arguably more important, however, to recognize the array of consequences child maltreatment afflicts on its victims throughout their lifetime including cumulative psychological and physiological health burdens. The severity of these negative health outcomes are understood to be related to the victims age, the frequency and type of abuse, the victims relationship to the perpetrator, as well as the victim's level of resilience (Chaulk, Gibbons, & Scarupa, 2002; English et al., 2005). Examples of immediate outcomes from incidences of physical abuse include broken bones, impaired brain development, as well as death (Bellis & Thomas, 2003;

Chaulk et al., 2002). Immediate and long-lasting deficits in cognitive abilities, language development, and academic performance have also been associated with cases of child abuse and neglect (Gilbert et al., 2009; Watts-English et al., 2006). In relation to long-term effects, psychological impacts in adults including post-traumatic stress disorder (PTSD), anxiety disorders, depression, eating disorders, and increased rates of suicide (Felitti et al., 1998; Springer et al., 2007). In addition, decreased physiological health has been found among adult victims of child maltreatment as a result of conditions including obesity, heart disease, cancer, chronic lung disease, liver disease, illicit drug use, alcoholism, smoking, and sexually-transmitted diseases among others (Felitti et al., 1998). Springer and colleagues have also noted that children who experience multiple types or incidences of maltreatment are at an even greater risk of experiencing adverse health consequences of as adult (Gilbert et al., 2009; Springer et al., 2007). Research has also demonstrated that victims of child abuse and neglect are also associated greater instances of early aggression and violent arrests (White & Widom, 2003; Widom et al., 2006). In addition, Currie and Widom (2010) also found that adult victims of child abuse and neglect reported fewer years of education, lower employment rates, and fewer annual earnings.

Since acknowledgment of child abuse as a clinical condition by the public health community in the Journal of the American Medical Association's 1962 publication of The Battered-Child Syndrome the field of child maltreatment has expanded over the years and has recently become an important public health priority (Hammond, Whitaker, Lutzker, Mercy, & Chin, 2006; Kempe C, 1962; Whitaker, Lutzker, & Shelley, 2005). Whitaker and colleagues explain that due to child welfare and the justice system's responsibility to manage the consequences of child maltreatment, a primary prevention approach is most appropriate to

combat this public health problem (Whitaker et al., 2005). It has been demonstrated that a more scientific methodology including the utilization of preventative models is necessary to reduce incidences of child maltreatment, whereas, historically, our society has focused on enforcing consequences for perpetrators of violence (Hammond et al., 2006). Others agree by highlighting public health approaches such as surveillance, identification of risk and protective factors, testing interventions, and disseminating effective methods should be used to address the burden of child maltreatment (Whitaker et al., 2005).

Evidence-Based Practices In Child Maltreatment

Despite the opinion that evidence-based practices (EBPs) are most appropriate for the field of child maltreatment, the majority of services provided among social welfare services are not based on scientifically evaluated methods and are not tested for effectiveness (Mark Chaffin & Friedrich, 2004; Project, 2004; Saunders, Berliner, & Hanson, 2004). In fact, there are several studies that have demonstrated that many widely used programs have not been shown to be effective in reducing child maltreatment rates (Mark Chaffin & Friedrich, 2004; Duggan et al., 2004; Littell, 1997). Aarons and Palinkas (2007) credit low provider acceptance, insufficient training, and as insufficient infrastructure as a few explanations as to why EBPs are not widely adopted throughout the child welfare system (Aarons & Palinkas, 2007).

The majority of child welfare services involve unstructured curriculums which are implemented without consistency (Mark Chaffin & Friedrich, 2004). Researchers, on the other hand, have illustrated that effective child maltreatment interventions typically include more structured, often manualized, behaviorally-based curriculum delivered with consistency and reliability (Mark Chaffin & Friedrich, 2004; Weiss & Weiz, 1995; Weisz, Donenberg, Han, &

Weiss, 1995). Fixsen and colleagues' highlight these two components, validated measures and

fidelity monitoring, as a core components of success in disseminated programs in their synthesis

of 22 experimental and meta-analyses of effective public health implementations (Fixsen,

Naoom, Blase, Friedman, & Wallace, 2005). In addition, evidence-based models also often

include validated assessment measures and require provider fidelity monitoring in order to

ensure intervention validity. Programs such as the Nurse Family Partnership model, the Triple-P

model, The Incredible Years, and Parent-Child Interaction Therapy (PCIT) are examples of

interventions which have successfully shown to reduce child maltreatment risks by incorporating

the components described above. (M. Chaffin et al., 2004; Moncher & Prinz, 1991; Olds et al.,

1998; Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009; Sanders, Bor, & Morawska, 2007).

History Of SafeCare

Behavioral therapy methods within child maltreatment conclude that child abuse and

neglect are consequences of deficits in knowledge of child development and successful parenting

skills (Mark Chaffin & Friedrich, 2004). Specifically, such interventions often involve teaching

parents about age-appropriate expectations, how to communicate with their children, how to

manage child behavior problems, and knowledge of health and child safety (Mark Chaffin &

Friedrich, 2004).   SafeCare is one such program that utilizes behavioral-skills training via

structured curriculum that is used specifically with parents who have children ages 0 to 5 years

old.

The SafeCare curriculum was adapted from Project 12-Ways, developed and conducted

at Southern Illinois University at Carbondale (Guastaferro, Lutzker, Graham, Shanley, &

Whitaker, 2012). Project 12-Ways was developed in 1979 as the product of a four-year service

grants provided by the Illinois Department of children and family services (DFCS), the Illinois Department of Public Aid, and the behavioral modification program at the Rehabilitation Institute of Southern Illinois University at Carbondale. The theoretical framework used to develop Project 12-Ways originated from Bronfenbrenner as well as Bandura's social learning theory (Bandura, 1977; Bronfenbrenner, 1979; J.R. Lutzker, McGill, Whitaker, & Self-Brown, In Press). These theories suggest that child maltreatment is a result of both social and ecological risk factors and that these risk factors can be overcome via environmental adjustments and parental skills training to reduce incidences of maltreatment. As an eco-behavioral model, Project 12-Ways utilizes a multidimensional in-home curriculum which provides parents training in twelve specific areas, covering topics such as basic child rearing skills, health and nutrition, money management and career counseling, stress reduction and problem solving skills training, marriage counseling, and parent child interaction skills. The model was designed to directly assess parents skill level in each of the target categories and to train parents how to improve their deficits identified during the initial assessment (R.M. Gershater-Molko et al., 2003). Project 12-Ways primarily enrolled young single mothers referred by the child protective service system who were served by counselors with either Master's degrees in behavioral analysis or exemplary students of the behavioral modification program at the Rehabilitation Institute of Southern Illinois University at Carbondale. When compared with a demographically similar sample, Project 12-Ways families were found to have lower rates first time and repeated reports of child maltreatment resulting in a total of 10% recidivism compared to 21% (J. R. Lutzker & Rice, 1984).

Later in 1994, the California wellness foundation funded a research grant to develop a condensed, easier disseminated version of Project 12-Ways to serve families in Los Angeles

California which was named SafeCare (J.R. Lutzker et al., In Press). The new model was different in that it served primarily Latino families of urban San Fernando Valley with children ages 0 to 5 whereas Project 12-Ways participants included mostly white families from Southern Illinois with children up to age 18. In addition, the SafeCare dissemination model included only three interventions: 1) parent-child interactions, 2) child health, and 3) home safety. All three modules utilized repeated parent-skill assessments in addition to modeling and role-playing to attain performance mastery. SafeCare services were provided by bachelor level staff who were trained to focus more on positive parenting techniques and less on consequences of child misbehavior as was the focus of Project 12-Ways (Guastaferro et al., 2012; J.R. Lutzker et al., In Press).

SafeCare Curriculum

Today, the SafeCare model is still comprised of three modules, parent-child or parent-infant interaction, child health, and home safety, with each module utilizing the assess-train-assess structure. In total, the SafeCare curriculum is made up of 18 to 20 sessions allowing for six sessions per module with one to two sessions typically occurring each week. The first session of each module involves a direct observation assessment to gauge parent's baseline skill level. The following four sessions, the training sessions, utilize the 'SafeCare4' technique developed from the social learning theory to train participants to increase their parenting skills. The'SafeCare4' method used by home visitors includes *explaining* and physically *modeling* each new skill for the parent, requiring the parent to *practice* demonstrating the new skill, and providing positive and corrective *feedback* to parents on their performance of the skill. When providing feedback to the parents on how to improve their skills, home visitors will once more

explain and model the skills and coach the parent through additional practice until they master the skill (Guastaferro et al., 2012).

Parent-Infant Interaction Module

The Parent-Infant Interaction module is used with families who have an infant that is not yet walking. The goal of this module is to teach parents the importance of engaging with their baby by using four main core behaviors: looking, talking, touching, and smiling with their baby. Parents are taught that although their infants are not talking, it is important to stimulate and communicate with their babies in order to foster their development.

Parent-Child Interaction Module

The Parent-Child Interaction module is used with parents of toddlers and children to age five and focuses on preventing child problem behavior by teaching parents reasonable child expectations and the importance of engagement and consistency when communicating with their children. Specifically, parents are taught a structured strategy for interacting with their young children which involves understanding child development, employing rules and consequences with their children, and continuously providing positive communication with their children while ignoring minor misbehavior. The Planned Activities Training Checklist (PAT) is used by home visitors to document parent performance in both the Parent-Infant and Parent-Child Interaction module which has been. Several single-case studies have shown that acquisition of parenting skills including understanding age-appropriate expectations, utilizing time management techniques, providing children with concrete rules and consequences, and practicing positive parenting and engagement do result from participating in the Parent-Child Interaction module offered within the Project 12-Ways and SafeCare curriculum (Gaskin et al., 2012; J. R. Lutzker,

K. Bigelow, R. Doctor, R. Gershater, & B. Greene, 1998; S. Z. Lutzker, Lutzker, Braunling-

McMorrow, & Eddleman, 1987; Metchikian et al., 1999)

Safety Module

The Safety module is used to identify and reduce accessible hazards and poor living

conditions in the home which cause injury to active and curious children. This module is an

important one because of the fact that many child welfare referrals are related to issues regarding

safety (J.R. Lutzker et al., In Press). The Home Accident Prevention Inventory (HAPI) is the

assessment tool used in this module to catalog the home safety environment at the initial baseline

session and to determine home safety improvement or mastery of the skills taught in this module

by session 6. Multiple small study designs have also provided evidence that the HAPI tool has

successfully aided in training parents on reducing hazards within their home and maintaining

reduced hazards rates over time (Mandel et al., 1998; Metchikian et al., 1999).

Health Module

Lastly, the Health module was developed to provide parents with a step-by-step method

for caring for their sick and injured children. Parents are taught to recognize symptoms of their

child's illness, identify whether or not the child should be taken to the ER, seen by a doctor, or

whether to treat their child at home and how to do so. A Health Manual and a Health Recording

Chart are given to the parent during this module that provides a description of common child

illnesses and injuries with their appropriate treatments as well as a place and method to

document the child's symptoms. Examinations of the step-by-step method of identifying child

illnesses and providing appropriate treatment using the resources supplied within SafeCare's

Health module have illustrated the module's effectiveness in increasing parent knowledge related

to caring for their sick and injured children (Bigelow & Lutzker, 2000; Delgado & Lutzker, 1988).

SafeCare Research

As research has shown, deficits in parenting skills and knowledge regarding child needs are directly associated with cases of child neglect which make up the majority of child maltreatment reports (Mark Chaffin & Friedrich, 2004; U.S. Department of Health and Human Services, 2011). Since the development of Project 12-Ways, the assessment and training methods used within each of the three SafeCare modules have been tested among several single-case design studies which have illustrated the program's success in increasing parental skill performance (Bigelow & Lutzker, 2000; Delgado & Lutzker, 1988; Gaskin et al., 2012; J. R. Lutzker, Bigelow, Doctor, & Kessler, 1998; Mandel et al., 1998; Metchikian et al., 1999). In addition, reduced rates of child maltreatment recidivism have also been found when SafeCare services were compared to services as usual (R. M. Gershater-Molko et al., 2002). Most recently, a randomized trial of SafeCare conducted in the state of Oklahoma followed approximately 2,200 participants for 6 years, and found a 26% lower rate of recidivism among SafeCare recipients compared to those who received services as usual (SAU) (M. Chaffin, Hecht, et al., 2012).

However, evidence has not yet been published from a large, longitudinal rollout of the entire SafeCare curriculum for the purposes of evaluating parental skill attainment across each of the three modules. Additionally, there is little information on whether SafeCare works equally well for different types of families; that is, whether there are moderators of parental skill

acquisition. In other words, it is not yet known whether characteristics of parents are related to their ability to succeed in this program.

Moderators of Parent Outcomes

The majority of studies and meta-analyses addressing intervention effects which involve behavioral parent training methods involve programs focused on reducing child problem behaviors. These studies are often aimed at identifying mediators and predictors related to child outcomes and few address parent characteristics that may moderate outcomes. Moderator effects – the focus of the current work – indicate whether a treatment worked equally well for different groups. Moderators, therefore, are particularly important because they can inform interventionists about for whom the program is working well and less well, and on the necessity of modifying programs to best suit client's needs. Characteristics, such as demographic attributes or psychological conditions, can be easily assessed within EBP dissemination and if understood to be moderators, can serve as valuable insight towards identifying specific strategies and resources that are effective across a diverse population of consumers.

Among studies that discuss the role of parent characteristics, many focus on program adherence and attrition, or even child outcomes; relatively few focus on parenting performance. Among the studies that address the effects of parent characteristics as moderators of parent performance, contradictory support exists (Lundahl, Risser, & Lovejoy, 2006). Lunhdal and colleges (2006) conducted a meta-analysis of 63 experimental studies of parent-training programs to reduce child problem behavior and demonstrated that families with low socioeconomic status (SES), young parents, or single parents all had poorer child behavior outcomes and greater attrition compared to their counterparts. Overall, this review, as well as

one conducted by Reyno & Grath (2006), suggests that poor outcomes and increased attrition among parent-training interventions are moderated by a number of parent risk factors (Lundahl et al., 2006; Reyno & McGrath, 2006). However, several large studies not included in either reviews have illustrated that such parental characteristics do not adversely affect treatment outcome and in some cases increase program success (Beauchaine, Webster-Stratton, & Reid, 2005; Gardner et al., 2009; Gardner, Hutchings, Bywater, & Whitaker, 2010). For example, research on the Incredible Years program revealed that single parents, teen parents, parents with a history of abuse or substance abuse, as well as low income families did just as well as controls (Gardner et al., 2010). This same study found that mothers who were depressed had greater child outcomes compared to mothers who were not depressed but also received the intervention. Similarly, Beauchaine et al (2005) found that children of young mothers or mothers with depression or drug history also showed greater improvement than those who received treatment but were absent of the same parent risk factors. However, previous research has yet to focus on what factors affect parent outcomes and, therefore, our understanding of parent-training intervention effectiveness is limited.

For the purposes of this study, data will be analyzed from a large federally-funded study rollout of SafeCare in Georgia to assess parental skill acquisition and determine if demographic characteristics moderated changes in skill attainment. This study hypothesizes that participants receiving SafeCare training will show increases in parenting skill demonstration when assessed before and after training in each of the three SafeCare modules. In addition, analysis will be conducted to determine if parental characteristics (e.g. parent age, number of children in the household, CPS status, income, and marital status) serve as moderators for parental skill acquisition. Based on past literature, no specific hypotheses are made about moderators.

Chapter III

METHODS AND PROCEDURES

The data used for this thesis represents a subset of data collected by the National SafeCare

Training and Research Center under a grant titled, *Implementing SafeCare to Prevent Child*

Maltreatment in Underserved Populations, (Protocol Number: H09125), which was approved by

the Georgia State University Institutional Review Board (IRB) in October 2008.

Description Of Data And Data Source

In 2008, the state of Georgia contracted with the National SafeCare Training and Research

Center (NSTRC) to train private child welfare agencies across the state to implement the

SafeCare curriculum with families receiving family preservation services (Whitaker et al., 2012).

NSTRC conducted 5-day workshop trainings for fifty four agencies across Georgia between May

2009 and July 2011. At each agency, at least one individual, known as a home visitor, was

trained to provide SafeCare services to families and at least one other individual was trained as a

Coach to provide fidelity monitoring and supervision to each home visitor. Before trainees begin

implementing SafeCare in the field, they were required to demonstrate mastery of module skills

via role plays; once working in the field, home visitors were then monitored by their coach for

fidelity to the model. The clients that were served by these home visitors make up the sample

population that was used for this project.

All Georgia home visitors were required to collect family-level data as part of standard

implementation protocol. NSTRC research staff gathered and entered the information collected

by home visitors, and those data were analyzed for this project. Several pieces of data were

gathered. First Department of Family and Child Services (DFCS) Referral Form included the

demographic data used in these analyses (see Appendix A). Data on parental skill acquisition

pre and post parent training were collected via observation using structured checklists by each

home visitor delivering the model. The checklists for each module are described in more detail

below.

Demographic Information of Families

Data was collected from 311 families although many did not have complete

demographics data as is evident in Table 1. The sample included 238 females and 12 males

ranging in age from 15 to 60 with a median age of 25. The majority of the sample was African

American (57%) or White (37%). Most participants were single (70%), and 30% were married..

Ninety families (38%) had one child, 65 (28%) had two children and 80 families (34%) had three

or more children. Although half of the sample was missing referral information, of cases with

this information, 75 had a current Child Protective Services (CPS) case open, 31 have had at

least one prior case, and 45 had no CPS history.

Demographic Variable		Frequency
Gender	Male	12
	Female	238
	Missing	61
Marital Status	Married	68
	Single	158
	Missing	85
Race	Black	139
	White	90

	Other	17
	Missing	65
CPS Status	No History	45
	Prior History	31
	Current Case	75
	Missing	76
Number of Children	1	90
	2	65
	3+	80
	Missing	76
Income	<Median	65
	Median	$720
	>Median	67
	Missing	179
Parent Age	15-19	45
	20-25	67
	26-30	53
	31+	54
	Missing	92

Table 1. Sample Demographic Characteristics. Sample distribution by demographic subgroup

Description of Module Assessment Tools

See Appendix B for examples of the module assessment tools used within each of the

SafeCare modules described below.

Parent-Child Interaction (PCI) module

The Planned Activities Training (PAT) Checklist General version was used in the Parent-

Child Interaction module to assess parent's ability to interact and communicate with their

children. Specifically, the PAT Checklist General rates parent's performance engaging in either

a *play* or *non-play* activity with their child. *Play* situations include activities such as reading,

playing with blocks, or putting together a puzzle with their child. *Non-play* activities, in

contrast, include tasks such as taking a bath, picking up toys, or eating dinner. The PAT

Checklist General assesses parents performance of the following ten behaviors while they are

engaging with their children: preparing in advance, explaining the activity, explaining the rules,

explaining the consequences, giving choices, talking about what they are doing, using good

interaction skills, ignoring minor misbehavior, giving feedback, and providing rewards and

consequences. The rating scale used for this measurement includes a *check plus*, meaning the

parent performed the activity well, a *check*, meaning the parent performed the step correctly but

could use improvement, a *minus*, meaning that the parent completed the step minimally or did

not perform the step, and *not applicable*, meaning the behavior was not included in the

performance score. A total performance percentage is calculated by dividing the number of

behaviors a parent received a *check* and a *check plus* in by the number of the behaviors that were

score which excludes any *not applicable* behaviors. Performance scores were computed for each

family at baseline and as post-test.

Parent-Infant Interaction (PII) module

The Planned Activities Training (PAT) Checklist Infant version was used in the PII

module to assess parent's ability to interact and communicate with their infants. Within this

module, parents are assessed on their demonstration of the following interaction skills with their

infant: smiling, touching, looking, imitating their infant's vocalizations and movements, positive

verbalizing, holding, light bouncing, and rocking. The PAT Checklist Infant version also

captures *play* and *non-play* activities as does the checklist used within the PCI module.

However, infant's engagement abilities are different than a walking child's, *play* situations in the

PII module include activities such as peek-a-boo or parents singing and non-play situations include tasks such as diapering or getting dressed. The *check*, *check plus*, *minus* and *not applicable* rating are also used to score parent's demonstration of skills on this checklist. A total performance percentage is also calculated in the same fashion as in the PCI module, however, only the smiling, touching, looking, and positive verbalizing, considered as core behaviors, are used in the total score. Performance scores were computed for each family at baseline and as post-training.

Safety module

The Home Accident Prevention Inventory (HAPI) is used in the Safety module to assess the number of hazards found in three separate rooms in each family's home. Within the SafeCare curriculum, home visitors assess three rooms in a family home for hazards that at not secured and can by reach by children based on their height. A hazard is any object or condition which can cause serious injury to a child. As grouped on the HAPI assessment form, hazard categories include poisonous solids and liquids, fire and electrical hazards, mechanical objects that can suffocate, small object that can cause choking, sharp objects, firearms, falling/trip/or activity restriction hazards, crush hazards, drowning hazards, and organic matter or allergens. Home visitors assess each room and tally the number of hazards that are found to be accessible as determined by the child's height. If a large number of items are found in a contained space (e.g. a jar full of pennies which are considered a choke hazard) the item is scored as a *10+*. A total hazard score for each room is calculated by adding the hazards found in each of the categories listed below; any items that were scored as a *10+* are calculated as an even 10. Hazard scores were computed for each room at baseline and post-training.

Health module

One of the primary goals of the Health module is for parents to know when to treat child illnesses at home, when to call the doctor, when or to go to the Emergency Room. The Sick and Injured Child Checklist (SICC) is used in the Health module to assess parent's ability to take the most appropriate action based on a child illness as described in a scenario. When assessing parents with the SICC, home visitors first describe an illness using a short scenario after which they prompt the parent on what steps they would take to treat the illness. There are 26 different scenario examples that Home Visitors can use in conjunction with the SICC which are categorized among three different types: treat at home (TH), call the doctor (CD), or go the Emergency Room (ER). Based on scenario type, the SICC form outlines the appropriate steps needed to successfully treat the illness: the TH scenarios include 14 steps, the CD scenarios include 9 steps, and ER scenarios include 3 steps. The rating scale used for this measurement includes a *check*, meaning the parent performed the step, a *minus*, meaning that they did not perform the step, and *not applicable*, meaning the step was not applicable for the scenario and was not included in the performance score. A total performance percentage is calculated by dividing the number of steps a parent received a *check* on by the number of the steps that were scored which excludes any *not applicable* behaviors. Performance scores were computed for each type of scenario and baseline and post-test, and then averaged across scenarios.

Assessment Data Collected

After gathering all family data, it became evident that not all families with Pre assessment data also had Post assessment data for each module. In addition, the available data also indicates that many families only completed one or two modules and not all three. No data was available to explain why

Module	Number of Individuals for whom Pre Assessment Data was submitted	Number of Individuals for whom Post Assessment Data was submitted	Number of Individuals for whom had matching Pre and Post Assessment Sets
PCI	102	105	87 (85%)
PII	55	64	51 (93%)
Safety	115	71	58 (50%)
Health	143	1113	93 (65%)

Table 2. Assessment Data Collected. Frequency of assessment paperwork collected by module.

missing values existed across observations, although, there are several possible explanations. One reason is that Home Visitors may not have submitted all assessment paperwork that was collected from each family. It is also likely that many families stopped receiving SafeCare services sometime after starting the program either because they refused services, they moved, or they were unable to be reached by their home visitor to continue services. In Table 2, frequencies of assessment data that was obtained is represented for each module.

Data Management

Data collected on demographics and parenting skills from each module were entered into individual Excel spreadsheets (five total) by NSTRC research staff throughout the grant funding period. SAS 9.2 was used to merge each spreadsheet into a single dataset for analysis. Additional programming was required to create variables necessary for hypothesis analysis. Determining parent *age* at intervention time point required calculating a difference between *referral date* and parent *date of birth*. Additional variables were created to accommodate

multiple conditions (PCI: *play* or *non-play* and *check* vs. *check plus*; Safety: five different *room types*; Health: three different *scenario types*), multiple time points (*Pre* and *Post*), or for determining an assessment total score or percentage (total steps). Data cleaning was then performed by examining frequencies of all imported variables as well as all newly created variables to determine inconsistencies resulting from data entry error which were corrected or removed from analysis if they could not be resolved.

Statistical Analysis To measure whether parents in this sample displayed an increase in parenting skills, a repeated measures analysis of variance (ANOVA) was computed using Pre and Post assessment scores among each separate module. This analysis was performed individually for *Play* and *Non-Play* activities within PCI and PII each, for each room type within the Safety module (i.e. *Living Room*, *Kitchen*, *Bathroom*, *Bedroom*, and *Other* room), for each Health scenario type (i.e. *Treat at Home*, *Call the Doctor*, and *Emergency Room*), as well as for each module's overall total performance percentage (PCI/PII and Health) or total hazard score (Safety).

For the PCI and PII modules, performance was analyzed using two methods. The first method is identical to how Home Visitors calculate total performance percentage and is derived by dividing the total number of behaviors a parent receives a *check* or a *check plus* on by the total number they were scored on. The second method was to examine the percentage of behaviors on which a check plus was received relative to the total behaviors scored. The first PCI/PII total performance percentage calculation method allows us to assess parent performance as it is measured by Home Visitors who implement SafeCare with families as well as overall performance trends across time. The second method provides a greater insight into two important aspects about performance: 1) what distribution of families display advanced

performance of parenting skills at baseline, and 2) how do advanced performance trends, using the *check plus* only calculation, compare to overall performance trends, those calculated using first performance total method.

To determine whether any demographic variables acted as moderators, moderator variables and their interactions with the repeated measures variable (Time) were tested in repeated measures ANOVA. Because, with one exception, the total scores for PCI, PII, Safety, and Health seemed representative of the subscores only the total scores were used in moderator analyses. For PII, because there was little variation in scores using the first computation methods (check + checkplus/total scored), moderator analyses focused on the second method (check plus/total scored). In order to deduct moderator effects of parental characteristics, continuous demographic variables were categorized for analysis purposes. The *Gender*, *Marital Status*, and *CPS_Status* variables did not require recategorization. The *Race* variable was divided into two groups, *Black* and *White*, and all other races were excluded from this analysis as only four observations reported as *Other Race* also had corresponding assessment data. The *Number of Children* Variable was divided into three groups which represented families with, one child, two children, or more than three children. The *Income* variable was divided into two groups as determined by a median split creating a *Less Than Median* group and a M*ore Than Median* group. Lastly, the *Parent Age* variable was divided into four groups with approximately even observations including those under 19 years old, those between 20 and 25 years old, those between 26 and 30 years old, and those 31 years old or older.

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Chapter IV

RESULTS

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Parental Skill Acquisition

Table 3 shows pre and post training scores for all variables computed, including PCI and

PII (Overall, Play, and Non-play), Safety hazards (Overall, and by Room Type), and Health quiz

scores (Overall, and by Scenario Type).   Also displayed is the percent change from pre to post,

and the percentage of families showing Mastery (100% correct at post). A simple review of pre-

and post-scores shows dramatic changes over time in most instances. For example, parents

showed a 40% increase in use of PCI skills, 10% increase in use of PII skills, 74% reduction in

home hazards, and 64% increase in health care skills.

To determine whether changes in parental skill acquisition from pre to post were

statistically significant, repeated measures analyses of variance (ANOVA) were performed.

Results of these analyses are displayed in the last column of Table 3. Changes in the parental

skill acquisition for each module was calculated by including all observations and disregarding

distinctions such Play and Non-play, Room Type (e.g. Living Room, Bedroom, etc.), and

Scenario Type (i.e. Treat at Home, Call the Doctor, and Emergency Room). Differences across

time using this overall statistic were found to be statistically significant at the *p*<0.005 level for

all modules.

Among the PCI module, increases in overall *percent correct*, as well as *percent check

plus correct* were found to be statistically significant at the *p*<0.005 level among both *Play* and

Non-Play activities. Within the PII module, assessments classified as *Play* activities also

demonstrated statistically significant (*p*<0.05) increases among both *percent correct* and *percent

check plus correct* calculations. However, score differences between Pre and Post *Non-Play* PII

assessments were not found to be statistically significant among ratings of *percent correct* or *percent check plus correct*. There are also observable differences in those who displayed 100% of PAT skills at post assessment with PII (80%) having more than double than PCI (35%).

Analyses of the Safety data showed that statistically significant pre- post change at the $p<0.05$ level occurred across all room types with the except of the *Other* room type. The *Other* room type was not analyzed for pre post differences because too few comparable observations were available ($n=2$). Percent changes among the living room, kitchen, bathroom, and bedroom resulted in reductions of 71% to 91% of hazards. Table 3 also shows that within each room type, 32% to 66% of rooms assess post SafeCare training contained zero accessible hazards.

Among the Health module, statistically significant increases in health care skills were also found at the $p<0.05$ level within each scenario type. Within each scenario type, *Emergency Room* showed an 18% increase, *Call the Doctor* showed a 64% increase, and *Treat at Home* showed a 186% increase. *Emergency Room* scenarios also represented the highest frequency of 100% scores at post with 97% and *Treat at Home* showed the lowest with 79%.

PCI

Module	Pre Mean Percent Correct	Post Mean Percent Correct	% Change	100% at Post	p-value
Overall	62.3 (n=102, SD=24.83)	87.3 (n=105, SD=17.56)	40%	35.2% (n=37)	$F(1, 86)=123.07$, $p<.0001$

PCI		Pre Mean % Correct	Pre Mean ✓+ % Correct	Post Mean % Correct	Post Mean ✓+ % Correct	% Correct Change	% ✓+ Change	% Correct 100% at Post	% ✓+ Correct 100% at Post	% Correct p-value	% ✓+ Correct p-value
	Play	58.3 (n=89, SD=27.58)	20.5 (n=89, SD=25.57)	86.5 (n=82, SD=20.58)	40.4 (n=82, SD=32.49)	48%	97%	42.7% (n=35)	9.8% (n=8)	$F(1, 62)=72.68$, $p<.0001$	$F(1, 62)=28.99$, $p<.0001$
	Non Play	66.9 (n=80, SD=26.29)	24.6 (n=80, SD=30.81)	88.5 (n=90, SD=15.31)	38.8 (n=90, SD=32.02)	32%	58%	46.7% (n=42)	4.4% (n=4)	$F(1, 59)=50.37$, $p<.0001$	$F(1, 60)=9.39$, $p=.0033$

PII

Module	Pre Mean Percent Correct	Post Mean Percent Correct	% Change	100% at Post	p-value
Overall	87.9 (n=55, SD=16.44)	96.4 (n=64, SD=9.85)	10%	79.7% (n=51)	$F(1, 50)=14.13$, $p<.0004$

PII		Pre Mean % Correct	Pre Mean ✓+ % Correct	Post Mean % Correct	Post Mean ✓+ % Correct	% Correct Change	% ✓+ Change	% Correct 100% at Post	% ✓+ Correct 100% at Post	% Correct p-value	% ✓+ Correct p-value
	Play	86.4 (n=54, SD=19.05)	39.3 (n=54, SD=35.82)	95.5 (n=58, SD=11.32)	57.1 (n=58, SD=38.98)	11%	45%	79.3% (n=46)	27.6% (n=16)	$F(1, 43)=9.13$, $p=.0042$	$F(1, 43)=4.75$, $p=.0349$
	Non Play	93.6 (n=33, SD=12.55)	48.5 (n=33, SD=44.06)	98.4 (n=54, SD=5.97)	62.3 (n=54, SD=38.51)	5%	29%	92.6% (n=50)	37.0% (n=20)	$F(1, 26)=4.24$, $p=.0495$	$F(1, 26)=2.88$, $p=.1019$

Safety

Module	Pre Mean Number of Hazards	Post Mean Number of Hazards	% Change	100% at Post	p-value
Overall	13.79 (n=115, SD=11.58)	3.53 (n=71, SD=6.50)	74%	33.8% (n=24)	$F(1, 57)=57.45$, $p<.0001$
Living Room	12.92 (n=98, SD=13.14)	3.81 (n=49, SD=7.06)	71%	40.8% (n=20)	$F(1, 35)=19.06$, $p<.0001$
Kitchen	20.58 (n=77, SD=18.95)	4.96 (n=46, SD=10.89)	76%	56.5% (n=26)	$F(1, 30)=17.91$, $p<.0002$
Bathroom	10.10 (n=49, SD=11.40)	2.39 (n=31, SD=3.34)	76%	32.3% (n=10)	$F(1, 17)=15.30$, $p<.0011$
Bedroom	12.12 (n=81, SD=13.28)	1.13 (n=47, SD=2.10)	91%	66.0% (n=31)	$F(1, 23)=32.16$, $p<.0001$
Other	10.20 (n=10, SD=8.08)	4.18 (n=11, SD=4.33)	60%	36.4% (n=4)	**

Health

Module	Pre Mean Percent Correct	Post Mean Percent Correct	% Change	100% at Post	p-value
Overall	58.82 (n=143, SD=20.72)	96.71 (n=113, SD=9.25)	64%	75.2% (n=85)	$F(1, 92)=333.91$, $p<.0001$
TH	33.29 (n=126, SD=28.40)	95.30 (n=104, SD=12.35)	186%	78.8% (n=82)	$F(1, 75)=291.59$, $p<.0001$
CD	59.46 (n=128, SD=29.58)	97.48 (n=106, SD=9.97)	64%	91.5% (n=97)	$F(1, 86)=153.34$, $p<.0001$
ER	83.59 (n=130, SD=25.34)	98.57 (n=105, SD=8.68)	18%	97.1% (n=102)	$F(1, 78)=24.23$, $p<.0001$

**n=2 with matching Pre and Post Assessments

Table 3: Assessment Scores and Skill Acquisition. Pre and post mean assessment scores and interaction across time by module.

Moderator Analysis

  Analyses to detect demographic moderator effects were performed across each module performance measurement. Refer to Tables 4 and 5 for the results of these analyses. Moderators examined include gender, marital status, race, CPS status, number of children, income, and parent age. Only two different demographic characteristics were found to moderate skill performance, each on a separate module.

  First, parent's level of income was also found to moderate performance within the PCI module, $F(1, 42) = 9.52$, $p=0.004$, with parents of lower income demonstrating greater increases in performance (*Means* Pre=57.39, Post=89.95) than those of higher income (*Means* Pre=73.56, *M* Post=89.31).

  Second, the number of children in a household was found to moderate overall hazard reduction, $F(2, 45) = 3.95$, $p = 0.03$. Follow up analyses of the interaction showed that families with one child showed greater reduction in hazard totals (*Means* Pre =19.95, Post = 2.04) than families with two children (*Means* Pre = 11.26, Post = 3.43), $F(1, 31) = 7.05$, $p = 0.01$. Differences between families with one child and three or more children was not found to be significant, $F(1, 29) = 3.75$, $p = 0.06$, nor was the difference between families with two children or three or more children, $F(1, 30) = 0.26$, $p = 0.61$.

Demographic Variable		PCI			PII		
		Pre Mean ✓ Correct	Post Mean ✓ Correct	Interaction Effect	Pre Mean ✓+ Correct	Post Mean ✓+ Correct	Interaction Effect
Gender	Male	72.13 (n=4, SD=11.59)	87.50 (n=4, SD=16.58)	$F(1, 74)$ =1.01, p=0.3178	93.75 (n=2, SD=8.83)	75.00 (n=2, SD=26.51)	$F(1,42)$ =1.94, p=0.1707
	Female	62.37(n=72, SD=25.15)	89.00 (n=72, SD=17.40)		38.74 (n=42, SD=33.89)	55.85 (n=42, SD=34.56)	
Marital Status	Single	58.63(n=43 SD=24.76)	87.47 (n=43, SD=20.08)	$F(1, 69)$ =2.13, p=0.1491	42.92 (n=25, SD=36.34)	60.75 (n=25, SD=32.75)	$F(1, 36)$ =0.00, p=0.9812
	Married	69.47 (n=28, SD=24.76)	90.65 (n=28, SD=13.62)		40.06 (n=13, SD=34.51)	58.17 (n=13, SD=32.89)	
Race	Black	63.33 (n=37, SD=26.62)	89.75 (n=37, SD=20.72)	$F(1,69)$ =0.12, p=0.7351	36.58 (n=25, SD=33.25)	45.50 (n=25, SD=38.68)	$F(1,39)$ =3.63, p=0.0641
	White	63.41 (n=34, SD=22.91)	88.03 (n=34, SD=13.45)		41.67 (n=16, SD=37.68)	71.74 (n=16, SD=20.45)	
CPS Status	No History	73.45 (n=16, SD=20.81)	93.30 (n=16, SD=11.00)	$F(2, 48)$ =1.33, p=0.2730	35.68 (n=8, SD=34.17)	67.45 (n=8, SD=32.92)	$F(2, 19)$ =0.22, p=0.8026
	Prior History	78.44 (n=8, SD=21.96)	99.06 (n=8, SD=1.86)		43.75 (n=4, SD=50.52)	67.19 (n=4, SD=22.46)	
	Current Case	60.10 (n=27, SD=22.2)	89.53 (n=27, SD=13.89)		34.58 (n=10, SD=41.16)	53.33 (n=10, SD=42.68)	
Number of Children	1	61.05 (n=24, SD=24.53)	88.37 (n=24, SD=22.29)	$F(2, 68)$ =0.16, p=0.8492	48.58 (n=25, SD=38.90)	53.50 (n=25, SD=33.97)	$F(2,38)$ =2.31, p=0.1000
	2	66.42 (n=18, SD=23.72)	90.01 (n=18, SD=11.08)		38.26 (n=11, SD=29.26)	62.69 (n=11, SD=32.91)	
	3+	63.18 (n=29, SD=25.50)	90.03 (n=29, SD=16.24)		20.83 (n=5, SD=25.00)	56.25 (n=5, SD=51.92)	
Income	<median	57.39 (n=18, SD=23.88)	89.95 (n=18, SD=17.72)	**$F(1, 42)$ =9.52, p=0.0036***	49.02 (n=17, SD=37.33)	70.10 (n=17, SD=30.99)	$F(1, 23)$ =1.04, p=0.3185
	>median	73.56 (n=26, SD=21.78)	89.31 (n=26, SD=17.87)		40.89 (n=8, SD=33.67)	46.09 (n=8, SD=30.97)	
Parent Age	15-19	53.08 (n=10, SD=23.96)	86.23 (n=10, SD=25.83)	$F(3, 63)$ =0.77, p=0.5134	45.83 (n=16, SD=36.33)	53.26 (n=16, SD=36.43)	$F(3,35)$ =1.79, p=0.179
	20-25	61.81 (n=21, SD=22.85)	87.05 (n=21, SD=19.14)		31.25 (n=12, SD=30.73)	61.98 (n=12, SD=30.67)	
	26-30	60.16 (n=15, SD=21.65)	88.70 (n=15, SD=11.30)		51.79 (n=7, SD=46.51)	50.00 (n=7, SD=32.43)	
	31+	68.36 (n=21, SD=24.12)	90.02 (n=21, SD=16.82)		46.88 (n=4, SD=41.30)	56.25 (n=4, SD=41.77)	

Table 4. Demographic moderators of PCI and PII assessment scores.

Demographic Variable		Safety			Health		
		Pre Mean # of Hazards	Post Mean # of Hazards	Interaction Effect	Pre Mean Correct	Post Mean Correct	Interaction Effect
Gender	Male	13.04 (n=4, SD=15.99)	9.08 (n=4, SD=10.12)	$F(1, 47)$ =1.73, p=0.1944	65.14 (n=5, SD=20.25)	100 (n=5, SD=0.00)	$F(1, 80)$ =0.18, p=0.6749
	Female	15.38 (n=45, SD=11.44)	3.50 (n=45, SD=7.12)		57.19 (n=77, SD=18.30)	95.88 (n=77, SD=10.77)	
Marital Status	Single	16.46 (n=25, SD=13.34)	5.08 (n=25, SD=8.05)	$F(1, 45)$ =1.65, p=0.2059	58.36 (n=32, SD=20.38)	98.36 (n=42, SD=4.31)	$F(1, 73)$ =1.25, p=0.2667
	Married	14.04 (n=22, SD=9.49)	3.17 (n=22, SD=7.15)		56.19 (n=44, SD=17.89)	94.48 (n=43, SD=13.58)	
Race	Black	15.56 (n=23, SD=13.43)	2.35 (n=23, SD=4.01)	$F(1,44)$ =1.764, p=0.1910	53.57 (n=43, SD=19.57)	96.05 (n=43, SD=9.46)	$F(1, 76)$ =2.67, p=0.1062
	White	14.67 (n=23, SD=10.25)	6.01 (n=23, SD=9.78)		60.42 (n=35, SD=14.87)	95.78 (n=35, SD=12.21)	
CPS Status	No History	13.03 (n=13, SD=7.69)	4.62 (n=13, SD=8.67)	$F(2, 33)$ =0.38, p=0.6894	57.97 (n=16, SD=16.23)	93.54 (n=16, SD=16.77)	$F(2, 54)$ =0.02, p=0.9783
	Prior History	10.62 (n=7, SD=8.66)	1.83 (n=7, SD=2.20)		62.93 (n=9, SD=23.39)	100 (n=9, SD=0.00)	
	Current Case	12.82 (n=16, SD=9.11)	1.73 (n=16, SD=4.33)		60.98 (n=32, SD=18.94)	97.69 (n=32, SD=6.53)	
Number of Children	1	19.95 (n=16, SD=14.43)	2.04 (n=16, SD=4.26)	**$F(2, 45)$ =3.95, p=0.0264***	57.45 (n=32, SD=20.38)	96.89 (n=32, SD=7.17)	$F(1, 76)$ =0.17, p=0.8410
	2	11.26 (n=17, SD=9.16)	3.43 (n=17, SD=5.73)		61.76 (n=21, SD=20.38)	98.07 (n=21, SD=5.08)	
	3+	14.13 (n=15, SD=7.85)	4.53 (n=15, SD=8.23)		56.39 (n=26, SD=15.12)	93.71 (n=26, SD=16.07)	
Income	<median	16.65 (n=13, SD=10.53)	2.37 (n=13, SD=4.75)	$F(1, 24)$ =3.93, p=0.0589	62.30 (n=22, SD=18.42)	95.28 (n=22, SD=12.70)	$F(2, 45)$ =0.84, p=0.3641
	>median	12.72 (n=15, SD=9.73)	5.96 (n=15, SD=11.94)		60.36 (n=25, SD=16.69)	98.27 (n=25, SD=4.13)	
Parent Age	15-19	21.88 (n=7, SD=21.16)	3.98 (n=7, SD=5.23)	$F(3, 42)$ =0.85, p=0.4743	50.86 (n=14, SD=25.01)	99.15 (n=14, SD=7.67)	$F(3, 72)$ =0.65, p=0.5871
	20-25	15.57 (n=12, SD=10.24)	5.83 (n=12, SD=10.17)		56.56 (n=27, SD=16.08)	99.04 (n=27, SD=13.58)	
	26-30	12.94 (n=17, SD=8.39)	2.99 (n=17, SD=7.61)		62.06 (n=18, SD=19.19)	98.24 (n=18, SD=4.78)	
	31+	14.90 (n=10, SD=10.66)	3.00 (n=10, SD=5.59)		59.87 (n=17, SD=11.09)	97.42 (n=117, SD=5.83)	

Table 5. Demographic moderators of Safety and Health assessment scores.

Chapter V

DISCUSSION

The purpose of this study was to assess parental skill acquisition within an evidence-based parenting program, SafeCare, and determine if demographic characteristics moderated changes in skill attainment. It was hypothesized that participants receiving SafeCare training would show increases in parenting skill demonstration when assessed before and after training in each of the three SafeCare modules. Analysis of pre- post-training assessments indicated that there was a statistically significant difference in mean assessment scores among all SafeCare modules. In addition, this study was also interested in determining if parental characteristics (e.g. parent age, number of children in the household, CPS status, income, and marital status) served as moderators for parental skill acquisition. Although no specific hypotheses were made about moderators, results showed that of the 28 moderator analyses conducted, two interaction effects were found to be statistically significant including number of children and the Safety module as well as income and the PCI module.

Previous research examining moderators within parent-training interventions is somewhat inconsistent and tends to focus on child outcomes (Beauchaine et al., 2005; Gardner et al., 2010; Lundahl et al., 2006; Reyno & McGrath, 2006) . Even less is known, however, about moderators that affect parent performance among these interventions. It is important to understand what impacts differential parent performance as it provides a richer understanding of intervention effectiveness.

To determine whether parents increased their parenting skills and if certain families performed differently, this research used baseline and post implementation assessments from 311 high-risk families in GA who participated in the SafeCare program. . Demographic variables

were analyzed to assess whether parental characteristics affected changes in performance from baseline to post training.

Skill acquisition analysis

Findings indicated that parents improved significantly in all skill areas targeted by SafeCare. Improvements were both statistically and clinically significant in most cases, with improvements of 10-74% in targeted behaviors. Overall percent changes and percent correct changes for PCI were between 32% and 48% while changes in the PII score were found to be between 5% and 11%. PCI scores, however, had a larger capacity to increase as their baseline scores were notably less than PII mean scores at baseline. Among the Safety and Health modules, positive changes of 74% and 64% were found. Several additional findings are noteworthy.

No observable differences in percent correct changes were found within Play and Non Play activities assessed among the PCI (Play=48%, Non Play=32%) and PII (Play=11%, Non Play=5%) modules. However, there were some notable differences in the post test scores of the PCI and PII module, with a large percent of PII completer scoring 100% at post assessment (80%), and a much smaller portion scoring at 100% in PCI (35%). These differences are likely due to the smaller number of applicable steps included in these two modules with PII containing only 4 steps and PCI containing 10. Still, baseline percent correct means above mastery (85%) were also found for both *Play* and *Non-Play* activities in the PII module, whereas, mean baseline PCI scores were below mastery (Play=58%, Non Play=%70). This outcome suggests that the assessment tool used in the PII Module may not be sensitive, or a valid measurement of parent-infant interaction skills.

Within the Safety module, Kitchens assessed contained the largest mean number of hazards (21) at baseline and Bathrooms (10) had the lowest; however, differences in statistically significant percent changes by room types were similar for all room types (with the exclusion of other) ranging from 71-91%.   Additionally, the Safety module had the least percent of families who scored 100% at post assessment e (34%) compared to all other modules. This finding is not surprising as the SafeCare curriculum points out that eliminating all room hazards is not usually feasible and, therefore, the importance of child supervision when hazards are present is emphasized.

Lastly, among all scenario types, the Health module showed statistically significant improvement in health care skills. However, differences in percent changes across scenario type are substantial and range from 18% (ER) to 186% (TH). It should be noted however, that Treat at Home scenarios contained a total number of 14 applicable steps, whereas, the Emergency Room scenarios contain only 3 applicable steps. These scoring distinctions increase the potential for variance in pre- post- changes across scenario type.

Moderator analyses

Of the 28 moderator analyses conducted, only 2 were statistically significant. It was found that parents with lower incomes showed greater increases in PAT skill demonstration than did parents of greater incomes in the PCI module. When pre and post means are compared across income groups, we see that parents of low income started out with much lower PCI scores (*M* Pre=57.39, *M* Post=89.95) but increased to comparable scores to those of higher income (*M* Pre=73.56, *M* Post=89.31) after the SafeCare intervention. This finding is somewhat related to

previous research which links factors such as low SES and limited social support to reports of child maltreatment (Bae, Solomon, & Gelles, 2007).

Moderator analysis also illustrates parents with one child versus 2 children demonstrated greater reductions in safety hazards. It can be noted, however, that the mean number of hazards present at baseline among parents with only one child was higher than those parents with of two children (and at post-test, the two groups were about even (2.0 vs. 3.4). This suggests that the interaction was driven by a greater number of hazards at baseline for parents of a single child versus parents of two children. It may be that new parents are less aware of potential hazards whereas more experienced parents may have more knowledge about hazards due to previous experience raising children.

Limitations

There are several limitations to this study which need be mentioned. First, there is a large amount of missing data as is illustrated in Table 1 and Table 2. As Damashek and colleagues (2011) explained, attrition among recipients of child welfare services is a global limitation among research in child maltreatment. Regardless, it is not known as to whether families who were missing SafeCare assessments differed from those who did not and whether the missing data was a matter of attrition or of home visitor paperwork submission. Further exploration of this data should be conducted to determine if missing assessment data comprises a monotone missing pattern as the result of attrition or if missing values were random as would be expected if paperwork was not submitted. If compared with skill gains, this differentiation could lead to a better method of handling missing data and analyzing intervention effects.

Second, the implementation of the SC curriculum involves data collection by home visitors versus more objective research assessors. For study analyses, this method introduces the potential for biased data values. Because skill acquisition was found to be statistically significant across modules, data collection bias is not considered a significant factor in the current analyses.

Finally, for the moderator analysis, we conducted a larger number of statistical tests (28), and found only 2 significant effects. The large number of statistical tests inflates the possibility of type I error, and thus reduces the confidence in which significant results can be expected if performed with a larger sample.

Implications for SafeCare Implementation

Consistent with past research, this research concludes that parents who complete SafeCare training do show improvement of parenting skills as assessed within the Parent-Child Interaction, the Parent-Infant Interaction, Safety, and Health modules. As evident in Table 3, mean performance ratings were high at baseline and this occurrence minimizes the potential for an increase in performance across time. This was found particularly true in PII module where mean baseline scores among Play and Non Play scenarios were found to be over curriculum mastery standards (85%). In addition, Emergency Room assessments in the Health module also contained high mean baseline scores (84%). Likewise, both the PII and the Health ER assessment tools include low numbers of applicable steps for total score calculation, 4 and 3 respectively. Therefore, further evaluation should be conducted to determine if the small number of applicable steps on these measures can account for high baseline scores present in each of these situations.

It is also suggested that periodic checking of Home Visitor assessments be adapted into SafeCare implementation. Although Coaches do monitor Home Visitor's delivery of the SafeCare curriculum by listening to audio recordings of family sessions, they are unable to discern Home Visitor's skills at conducting assessments from audio recordings. Without assessing Home Visitors in a comprehensive manner, measurement tools become less reliable and the family outcomes observed lack validity. On the other hand, if provider supervision did include assessment monitoring, additional measurement biases, such as providing inaccurately high baseline scores or scoring improvement when it is not present, could be avoided.

Analyses of demographic moderator effects on skill acquisition showed few interactions. Interpreting null effects is always difficult, but if these results hold, it would indicate that the SafeCare curriculum is not differentially effective in increasing parenting skills according to most parental demographics. This distinction is important because if demographic characteristics are not found to be moderator of parent performance it would suggest that SafeCare is effective among multiple populations and, therefore, suitable for large dissemination. Recently a 6-year study of SafeCare with an American Indian study population of 354 was published and demonstrated that no differences were found in rates of recidivism among American Indians compared to other race/ethnicity participants (M. Chaffin, Bard, Bigfoot, & Maher, 2012). These results support our null findings and indicate that SafeCare is equally effective among culturally distinct populations.

Future Research Aims

The results of this study suggest that further attention should be paid to differences found in percentage change of skills assessed using the PAT Checklists versus those found among the

Home Accident Prevention Inventory and the Sick and Injured Child Checklist. Although the subjectivity of the PCI and PII assessment measurements could play a large role in this difference, it is important to confirm the validity of this measurement as a tool for assessing parenting-child interaction skills.

Due to the lack of congruent support for parental moderators in parent training programs, our study utilized an exploratory analysis method by proposing a non-directional hypothesis to test for potential demographic moderators in our sample. A large percentage of demographics data was missing and, therefore, future research should also be conducted with a larger sample to determine if interaction effects are present among the comparisons tested. With such information, further conclusions can be made regarding moderator effects among characteristic groups. Additionally, further analyses should also consider modeling multiple parental characters (e.g. CPS status and income) with skill performance over time. Such analyses could reveal more complex moderator relationships leading to a richer understanding of parent skill attainment.

Most importantly, future research should examine whether parents who show most positive change in the targeted skills are those who are less likely to have future reports of child maltreatment. Lastly, examining home visitor fidelity as it relates to skill gains and recidivism would provide a more comprehensive understanding of the interventions overall effectiveness.

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APPENDIX A: DFCS Initial Referral Form

Nathan Deal, Governor   **Clyde L. Reese, III, Esq., Commissioner**

Georgia Department of Human Services ▪ Family & Children Services ▪ Name, Regional Director
Address ▪ City, GA ZIP ▪ Phone ▪ Fax

Family Visitation Services
"SafeCare®" Initial Referral Form

Initial Referral Disposition

Date of Referral: / /   Referral Taken By: Referring Party Name: Phone Number:

Referral Source- From Division of Family & Children Services

☐ Child Protective Services Intake   ☐ Family Support (Diversion)   ☐ Family Preservation   ☐ Foster Care

Family Characteristics

	First Name	Last Name	Gender (M/F)	Race (B, W, L, O)	DOB
Primary Parent/Guardian					
2ⁿᵈ Parent/Guardian					
Child 1					
Child 2					
Child 3					
Child 4					
Child 5					
Child 6					

Address (Street, City, Zip):

Home Phone: Cell Phone: Other Phone: Email:

Relative Contact: Name: Phone Number:

DFCS Screening

Was the referral screened for current or prior DFCS involvement? ☐ Yes   ☐ No

Result: ☐ No prior CPS history

☐ Prior CPS history -- ☐ Substantiated or ☐ Unsubstantiated

☐ Current CPS/Family Support case

FRONT

Aging Services │ Child Support Services │ Family & Children Services │ Residential Child Care

An Equal Opportunity Employer

APPENDIX B: SafeCare Module Assessment Measurements

Planned Activities Training (PAT) Checklist-General: Home Visitor Version

Parent name: _____ Date: _____
Child name: _____ Home Visitor Name: _____
Activity: _____ Situation: Baseline Training Follow-up

Parent Behavior	Score √,√+, −	Priority Rating	Notes
Prepare in advance Get supplies ready in advance; tell child what will happen Have a plan for what you are going to do			
Explain the activity Get child's attention, be positive and excited Explain the activity so child knows what to expect			
Explain the rules Make them simple, clear, and easy to follow Tell the child what to do instead of what not to do			
Explain the consequences For following rules and for not following rules Be realistic; always follow through with what you say			
Give choices Choice of activities, materials, and what comes first Keeps child interested in the activity			
Talk about what you are doing Talk and ask questions about what your child is doing Follow child's lead; teach simple skills			
Use good interaction skills ☐On child's level │ ☐Paying attention to child │ │ ☐Touching affectionately ⁻ ☐Talking to child warmly ⁻			
Ignore minor misbehavior Praise your child for good behavior Don't pay attention to minor problems			
Give feedback Describe what your child did that was great What should he/she work on next time?			
Provide rewards/consequences Use natural rewards, praise, favorite activities, attention Use things your child already likes as rewards			
Percent scored as √ or √+ =			

Please check and rate priority if you see any:
☐Negative verbalizing ⁻   ☐Instructing harshly ⁻   ☐Negative touching ⁻

Scoring:
√   = Completed the step correctly, but could use improvement
√+ = Completed the step well
-     = Completed the step minimally, did not do the step, or did not do the step when it was appropriate to do it
N/A = Not Applicable

Priority Ratings:
U= Urgent   HP=High Priority   M=Monitor

PAT Checklist - Infant: Home Visitor Version

Parent: _____ Date ____ / ____ / ____ Time: _____

Child: _____ Observer: _____

Setting/Activity: _____ Condition: Baseline Training Follow-up

Parent Behavior	Score	Priority Rating	Notes
Smiling* Looking at infant & turning mouth up, Laughing	⬭		
Touching* Patting, kissing, tickling Affectionate/gentle contact	⬭		
Looking* Facing the infant with open eyes	⬭		
Imitating Infant Imitating vocalizations or movements Respectful			
Positive Verbalizing * Endearing terms, praise Talking about activity Talking with eye contact	⬭		
Holding Completely lifting infant off surface Warm, direct contact			
Light Bouncing Gently moving the infant up and down			
Rocking Gently moving infant back and forth			

*Indicates Core Behaviors

Calculating total score:

1. Number of Core Behaviors with √+ or √ = _____
2. **Total Score**: Answer from #1 above x 25% = _____

Please check and rate priority if you see any :

_Negative verbalizing (e.g., negative comments, teasing, yelling) _   _Negative touching ⊔

Scoring:
√+ Completed the step well
√   Completed the step correctly, but could use improvement
-   Completed the step minimally or did not do the step when it was appropriate to do it
N/A Not Applicable (no opportunity, not appropriate for the context)

Priority Ratings:
U=Urgent   HP=High Priority   M=Monitor

Home Accident Prevention Inventory (HAPI)-Revised

Family: _____ Child: _____ Date: _____

Home Visitor: _____ Timing: Baseline   Training   Follow-up

Room: _____ Eye Level Height: _____ Reach Height: _____

Hazard	No. of Hazards*	Comments
1. Poisonous Solids, Liquids		
1 Medications (tube, pill, liquid)		
2 Cleaning Products		
3 Alcoholic beverages		
4 Beauty products		
5 Pesticides, herbicides, and fertilizers		
6 Paints/stains, solvents and thinners, petroleum products, & glues/adhesives		
7 Poisonous plants		
2. Fire and Electrical Hazards		
8 Combustibles		
9 Fireplaces without screens		
10 Outlets/switches without plates		
11 Appliances without protective covers		
12 Hazardous electrical cords/plugs		
3. Mechanical Objects that Can Suffocate		
13 Crib cords		
14 Plastics		
4. Small Objects / Choking Hazards		
15 Ingestible small objects		
5. Sharp Objects		
16 Sharp objects		
6. Firearms		
17 Accessible firearms		
7. Falling, Trip, and Activity Restriction Hazards		
18 Balconies		
19 Steps		
20 Windows		
21 Objects in walkway		
22 Activity restriction hazards		
8. Crush Hazards		
23 Crush Hazards		
9. Drowning Hazards		
24 Standing water in basins		
25 Unsecured toilet		
10. Organic Matter and Allergens		
26 Decaying food/dirty dishes		
27 Excess dust, dirt, animal hair, and other allergens		
28 Evidence of insect/rodent infestations		
Total Hazards		

*Count individual hazards up to 10. For >10 hazards, make an estimate.

Sick or Injured Child Checklist (SICC) – Home Visitor Version

Parent Name: _____   **Observer:** _____   **Date:** _____   **Scenario Type: TH   CD   ER**

Scenario Number: _____   **Condition: Baseline   Training   Post**

A. General First Steps
Regardless of the appropriate treatment, always follow these general steps:

☐ 1. Identifies and states symptoms
☐ 2. Assesses additional symptoms as needed (Health Manual may be helpful)

Key:
+   Correct
−   Incorrect
N/A Not Applicable

B. Treat at Home (TH)

First Check

☐ 3. Looks up symptoms/illness in reference guide/consults health professional
☐ 4. Completes relevant portions of HRC
☐ 5. States and administers appropriate treatments correctly
☐ 6. Reads instructions on medicines or gets specific instructions about medicines from doctor
☐ 7. Records treatment and dose correctly

Follow-up 1

☐ 8. Check   mptoms again after recommended time
☐ 9. If symptoms still present, continues treatment or calls doctor/nurse for advice
☐ 10. Records time, symptoms, treatment, and dose correctly

Follow-up 2

☐ 11. Checks symptoms again after recommended time
☐ 12. If symptoms still present, continues treatment or calls doctor/nurse for advice
☐ 13. Records time, symptoms, treatment, and dose correctly
☐ 14. Appropriately decides whether to continue treatment or stop it

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C. Call the Doctor's Office for an Appointment (CD)

☐ 3. Completes relevant portions of HRC
☐ 4. Calls the doctor 's office
☐ 5. Describes symptoms correctly to the doctor
☐ 6. Asks for or accepts an appointment

D. Go to the Emergency Room (ER)

☐ 3. Goes to the ER or calls 911

Scoring: Add up Total Steps Correct (+) and Total Applicable Steps (+ and -) for all columns used during role-play, then calculate Percent Correct (Correct/ Applicable).

Total Steps Correct = _____   Total Applicable Steps = _____   Percent Correct (Correct/Appropriate) = _____