CHILD MALTREATMENT AND YOUNG CHILDREN: EXAMINING CONTRIBUTING FACTORS AND IMPACTS OF PARENTING PROGRAMS

A Dissertation presented to the Faculty of the Graduate School University of Missouri-Columbia

In Partial Fulfillment of the Requirements for the Degree Doctorate of Philosophy

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July 2015
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CHILD MALTREATMENT AND YOUNG CHILDREN: EVALUATING CONTRIBUTING FACTORS AND IMPACTS OF PARENTING PROGRAMS

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I would like to thank my advisor and dissertation committee for all the guidance and support they provided during this process.

This work would not have been possible without my family and friends and their constant love and support. I would also like to dedicate this work more specifically to my daughter, whose very existence motivated me to finish.
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ABSTRACT

Child maltreatment is a complicated and ongoing problem. The research and prevention of child abuse is hindered by issues with defining and accurately identifying cases of abuse, but there are millions of reported cases in the United States each year. Furthermore, infants and toddlers are the most frequent and most vulnerable victims of child maltreatment (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2012). Child maltreatment is associated with a wide range of negative consequences for children including cognitive and psychological issues (Crozier & Barth, 2005; Mueller et al, 2010). The current project examines the factors associated with physical child maltreatment of infants and toddlers and efforts to influence these factors and prevent physical child maltreatment. Study 1 examined the data from the Hawaii Healthy Start Program (HSP) to determine the contextual, parental and child variables that predicted the use of severe physical assault on infants and toddlers during their first and second years of life. Results indicate that parental stress, substance use, speaking language other than English, less enriching home environment and child temperament are associated with severe physical assault of young children. Study 2 examined the feasibility of providing Incredible Years: Parents and Babies curriculum to vulnerable families with the intention of preventing physical maltreatment. Results of this study indicate that significant relationship building and parent engagement strategies are necessary to engage this population and data collection strategies must account for positive impression management and reading issues.
Chapter I: Introduction

Child maltreatment is common and associated with many serious negative short- and long-term consequences. The national annual report, *Child Maltreatment 2013* (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2014), estimated 679,000 unique children were determined to be victims of child abuse or neglect in the U.S. in 2013. The true rate of victimization is unknown, but in 2013 there were over 3.9 million children were the subjects of at least one report of abuse or neglect (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2014). Infants and toddlers are especially vulnerable to maltreatment; children age three or younger are the most frequent victims, and between these years the rate and percentage of victimization decrease with age. In addition, 73.9% of the 1,520 fatalities due to child maltreatment were also children ages three or younger, and 46.5% were younger than one (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2014).

Child maltreatment is associated with a wide range of negative consequences for children. Landsford and colleagues (2002) found, even after controlling for family and child characteristics correlated with maltreatment, adolescents maltreated early in life had more school absences, less aspiration for higher education and increased levels of aggression, anxiety/depression, dissociation, posttraumatic stress disorder symptoms, social problems, thought problems, and social withdrawal. Early life stressors, like maltreatment, are considered a risk factor for the development of psychopathologies, including depression, anxiety, post-traumatic stress disorder, psychosis, and substance abuse (Mueller et al, 2010).

One possible explanation for this link has to do with the effect of this stress on the neural development of children. Previous research has documented differences in the neural structure
and cognitive development of maltreated children (Mueller et al, 2010). These differences, like those in executive functioning, emotional regulation, information processing, and conflict detection and resolution (Mueller et al, 2010) can be logically or empirically attributed to the development of various mental health issues. For example, maltreatment has been found to significantly contribute to the development of antisocial behaviors above and beyond genetic factors (Jonson-Reid, Emery & Drake, 2010).

Research has shown that maltreated children display significant cognitive deficits when compared to groups of non-maltreated children (Hoffman-Plotkin & Twentyman, 1984; Dubowitz, Papas, Black, & Starr Jr., 2002; Crozier & Barth, 2005). Maltreated children typically score significantly lower than national averages on standardized tests of cognitive functioning and academic achievement (Crozier & Barth, 2005). Many maltreated children also suffer from attention deficit hyperactivity disorder (ADHD). In one study involving 364 maltreated children in the United States, 22% of the children had ADHD, a much higher rate than the 8-12% that is found in the general population (Streeck-Fischer & Kolk, 2000)

Specific psychological issues (e.g. ADHD) or maladaptive behavioral patterns (e.g. chronic antisocial behavior) can be caused by cognitive deficits and delays (Jonson-Reid, et al., 2010). Further, these same cognitive deficits can also lead to problems with social interactions and social support which is another risk factors for psychopathology. These early changes in brain structure can affect a child throughout the child’s life.

The factors that contribute to child abuse are examined in greater detail later in this paper. Several of the child maltreatment risk factors, like parenting stress, parenting skills and expectations, can be identified and modified. Physical abuse is often accompanied by parental frustration or anger toward the child (Rodriguez & Richardson, 2007).
Maltreating parents are theorized to have knowledge deficits, environmental stressors, limited ability to control their child’s or their own behavior, and/or parental skill deficits in the areas of child management and parent-child interactions (Hansen, Sedlar & Warner-Rogers, 1999). With the vast consequences of child maltreatment, there have been a variety of parenting programs developed to address the risk factors associated with child maltreatment.

One program, Hawaii Healthy Start Program (HSP) uses a home visiting model with the aims of preventing child abuse and neglect and promoting healthy development in at-risk newborns (Duggan, et al. 1999). This program focuses on early identification of vulnerable families before they become involved with child protection agencies. Paraprofessionals visit with families that consent to services weekly and work to link them to community resources, teach them about child development and promote appropriate discipline and child enrichment (Duggan, et al. 1999). A randomized evaluation of the HSP found that it did not reduce child maltreatment as expected. However, the comprehensive and longitudinal data collected as part of this trial provide a unique opportunity to examine predictors of existing and new cases of child maltreatment because it provided longitudinal data on an at-risk population which was used to predict the emergence of new child maltreatment cases.

Other types of programs focus on bringing multiple families together and delivering parenting information in group settings. For example, the Incredible Years Parents and Babies program (IY Babies) is part of a well-established series, Incredible Years (IY), and targets many of the known risk factors through a parenting intervention for new parents. IY Babies is designed for parents and their babies (0-12 months) and is intended to teach parents how to observe and understand their babies’ cues, understand that their babies are intelligent learners, provide physical and tactile stimulation for babies and understand their babies’ cognitive development.
Although the program is fully developed, its efficacy in reducing child maltreatment has not been evaluated. However, based on the success of other IY programs, it is expected that IY Babies will be effective in improving parental knowledge and skills, thereby increase parental competency, confidence, and parent-child bond thus reducing parental stress and the likelihood of child maltreatment.

The specific aims of this project are to (1) examine longitudinal predictors of existing and new cases of child maltreatment during infancy in a longitudinal study with comprehensive assessments of all known risk factors and (2) evaluate the feasibility and promise of the IY Babies program with adolescent parents.

The following specific hypotheses related to Aim 1:

Hypothesis 1a: We predicted that sociodemographic characteristics (child sex, maternal teen birth, low birthweight, and poverty status), parenting stress, family stress, home learning environment, current substance use, maternal depression, socioemotional home environment, partner abuse, maternal mental health, and maternal attachment would each have small to moderate correlations with severe child abuse incidence at baseline (birth) and at 1 year and 2 years of age.

Hypothesis 1b: We predicted that sociodemographic characteristics (child sex, maternal teen birth, low birthweight, and poverty status), parenting stress, family stress, home learning environment, current substance use, maternal depression, socioemotional home environment, partner abuse, maternal mental health, and maternal attachment would each uniquely predict severe child abuse incidence at 1 year and new cases that emerged at 2 years of age.

The following research questions related to Aim 2:
Research question 2a: Would at risk parents be willing to participate in IY Babies and attend and complete the weekly meetings?

Research question 2b: Would at risk parents report they found the IY Babies program helpful?

Research question 2c: Would at risk parents who attended IY Babies report increases in parenting knowledge and skills and reductions in child abuse potential?
Chapter II: Review of Literature

History and Definitional Issues

Children are the most victimized segment of the human population (White, Koss, & Kazdin, 2010). This is due to several factors: children are often smaller, weaker and less experienced than perpetrators who target them; they have less behavioral control, which can place them in dangerous situations; social norms against violence are stronger for adult-to-adult violence than for violence that involves children; and children have less control over whom they associate with and their physical location (White, Koss, & Kazdin, 2010). While this victimization includes many forms of harmful treatment, previous research supports a link specifically between childhood physical abuse and violence in adolescence and adulthood, disruptive behavior disorders, substance abuse, self-injurious and suicidal behaviors, emotional problems, interpersonal problems, and academic and vocational difficulties (Malinosky-Rummell & Hansen, 1993).

Influential researchers in the field, Cicchetti and Toth (2000), explain that the term “child maltreatment” includes four categories: physical abuse, sexual abuse, neglect and emotional abuse. Physical abuse is the infliction of bodily injury on the child by other than accidental means. Sexual abuse includes sexual contact or attempted sexual contact between an adult and a child. Neglect includes both the failure to provided minimum care and the lack of supervision. Emotional abuse involves persistent and extreme thwarting of a child’s basic emotional needs. In a 1991 study, researchers McGee and Wolfe expanded on the notion of emotional maltreatment in offering the operational definition of “psychological maltreatment” which includes psychological abuse and psychological neglect in caretaking behaviors (as cited in Cicchetti and Toth, 2000). It is also important to note that while each of the subtypes of child maltreatment
represents a clear departure from the average expected home environment, it would be a mistake to assume that maltreatment always takes the form of one of these distinguishable categories. Many maltreated children experience more than one type of maltreatment (Cicchetti & Toth 2000).

Furthermore, it should not be assumed that what constitutes abuse is always easily identified or accurately labeled (Mckoy & Keen, 2009). Throughout history people of all ages have experienced victimization and maltreatment. However, child maltreatment was not always recognized as a social problem. Some of the earliest identified local mandates addressing child abuse can be found in Colonial times where specific parental behaviors were proscribed as contrary to community norms. (Mckoy & Keen, 2009). The roots of modern day social institutions and statutes designed to prevent and stop child abuse can be identified as beginning in the 19th century (Giovannoni, 1989; Myers, 2008).

Early laws focused on the parents’ behavior and not the consequences to the child. There were three identified categories of parental failure: endangering morals, exhibiting morally reprehensible behavior or endangering the life and health of the children (Giovannoni, 1989). Once removed from the home, children that had been identified as abused were sent to orphanages or foster homes, or were apprenticed or indentured (Giovannoni, 1989).

In 1875, the Society for the Prevention of Cruelty to Children was founded. This organization served as an early investigative and advocating force, and pressed for the expansion of legal definitions of “child abuse” (Crosson-Tower, 2002). The early part of the 20th century also saw the establishment of the Juvenile Court and the professionalization of social work. This provided for a more uniform system of investigation and service delivery for abused and neglected children (Myers, 2008).
The 1930’s Social Security Act mandated the prevision of child welfare services for children that had been neglected, abused or were in danger of becoming “delinquent” (Williams, 1983). During the 1950’s there was a social work refinement of the definition of child abuse that included a focus on the designation of the problem, its etiology and correction. This new emphasis of prevention also highlighted a newly developing assumption that abusive and neglectful situations could be predicted and identified before they needed judicial intervention (Giovannoni, 1989).

However, despite the number of children and families that were processed under these burgeoning laws, there was little public awareness of this problem. It was not until the 1960’s when Dr. Henry Kempe and his physician colleagues published their research on the blight of the “battered child” (Kempe, Silverman, Steele, Droegemueller & Silver, 1962) and brought it into the public consciousness. Their work advocated for the broadening of the medical diagnosis of child abuse to include symptomatic indicators that could be found in both the child and the parents (Kempe et al., 1962). Kempe and his colleagues are also credited with beginning the campaign for mandated reporting laws (Giovannoni, 1989).

Despite the work of social workers, physicians and those in the legal profession to adequately define the terms of child abuse, there is a continued history of controversy in the legal, medical and social service definitions of child maltreatment (Mckoy & Keen, 2009). This stems from the desire to define the terms in a way that will indicate the distinguishing characteristics of maladaptive and harmful parenting practices while allowing those involved in preventing and intervening abuse a degree of professional judgment (Giovannoni, 1989). As such, many of the legal and policy definitions of child abuse include a “catch all” phrase such as “or otherwise interfere with the child’s general welfare.” However, the inclusion of these
ambiguous terms contributes to definitional issues in both the legal and research arenas (Giovannoni, 1989).

**Prevalence Rates**

As a result of these factors and perhaps issues with reporting rates, it is difficult to determine accurately the prevalence of child maltreatment. Of the identified cases, the majority of child maltreatment victims, an estimated 91.4%, were maltreated by a parent either acting alone or with someone else (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2014).

As stated earlier, in 2013 almost 680,000 children were identified as victims of abuse. This number represents a decrease from previous years. However, it also only represents confirmed or substantiated cases of child maltreatment, and the apparent decrease may be at least partially due to changes in the ways states classify cases. Specifically, there were an estimated 122,159 substantiated cases of childhood physical abuse in the United States and approximately a quarter of these victims were two or younger (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2014).

However, as mentioned earlier this number only represents confirmed or “substantiated” cases of child maltreatment. On a federal level the term substantiated is defined as an investigation disposition that refers to cases where the allegation of maltreatment or risk of maltreatment was supported or founded by state law or state policy. In some states, the term “preponderance of evidence” is used in place of the term substantiated (U.S. Department of Health and Human Services, Administration on Children, Youth and Families, 2012). To help specify the findings of Child Protective Services (CPS) investigations, some states also include
the disposition “indicated” which refers to cases where there is reason to suspect maltreatment has occurred, but evidence does not meet legal or policy criteria (Hussey, 2005).

**Parental and Contextual Influences on Maltreatment**

Traditionally researchers have conceptualized three different pathways for the etiology of child maltreatment: the psychological/psychiatric model, the sociological model and the effect-of-the-child-on-the-caregiver model (Belsky & Vondra, 1989). The psychological model emphasizes the characteristics of the abusive parent as the cause of the abuse. This theory relies on findings that link the parent’s own childhood experiences to his or her child rearing practices (Belsky & Vondra, 1989).

In contrast, the sociological model argues that the psychological model places an undue amount of blame on the victim. The sociological model points to characteristics of society as the cause of child abuse. According to this model, a society that encourages violence as a strategy for solving disputes, regards children as the property of parents and supports the “spare the rod, spoil the child” belief which leads to child maltreatment. Evidence for this theory is found in the links between child abuse and economic concerns and social isolation (Belsky & Vondra, 1989).

Both of these models imply that parent-child relationships are unidirectional and only influenced by the parent’s behavior. The effect-of-the-child-on-the-caregiver model suggests that the child’s behavior also plays a role in determining the parent-child relationship. Support for this model can be found in research that indicates that it is sometimes a single child in a family that is abused, that there is a higher proportion of premature/low birth weight histories in abused children, and that deviations in social interactions and general functioning have been found in mistreated children prior to their reported abuse (Belsky & Vondra, 1989). The interventions studied in this work address portions of each theory by working to reduce parental stress and
isolation while teaching parents more about child development and appropriate expectations and empowering them to impact their child’s environment to improve outcomes.

**Risk Factors**

Whether or not a child is abused appears to be the result of a combination of familial, parent and child factors. Research has revealed a variety of characteristics that can stress the family system. Greater degrees of stress can transform predisposed or high risk parents into abusive or neglectful parents. Early research in the field identified a variety of psychosocial characteristics that were associated with child maltreatment. For example, one study found social isolation, family history of abuse and neglect, serious maternal problems, inadequate child care arrangements, apathetic and dependent personality styles, and inadequate child spacing were all connected to child abuse (Hunter, Kilstrom, Kraybill, Loda, 1978). Additionally, children who were later abused were less mature at birth, had more congenital defects and had less family contact during the extended hospitalization (Hunter, Kilstrom, Kraybill, Loda, 1978). This provides evidence that stress and early bonding impact abuse potential.

Maternal age as also been identified as a potential risk factor for child abuse, although these findings are inconsistent as some researchers have found that it was not a risk factor (Budd, Heilman & Kane, 2000). In support of the role of maternal age, some research has shown that young mothers demonstrate less desirable parenting skills when observed with their infants (Pianta, Egeland, & Erickson, 1989). This pattern has been found within a sample of adolescent mothers; age positively co-varied with stimulating and responsive caregiving. This body of research supports the notion that parents’ psychological development is directly linked to some parenting behaviors (Pianta, Egeland, & Erickson, 1989). Lee and George (1999) also found that young maternal age and poverty were associated with increased risk for child maltreatment.
Additionally, there has been a substantial body of literature that has focused on personality characteristics that distinguish maltreating and non-maltreating parents. For example, a 1981 study by Brunquell, Crichton and Egeland assessed mothers prenatally and 3 months postpartum and found that mothers who later abused their children had a combination of personality attributes that indicated they were less psychologically complex and personally integrated. Specifically, these mothers had less optimal scores on measures of anxiety, locus of control, aggression, succorance, suspicion and defendence. These mothers also lacked understanding of the complexity of parenting, reacted negatively to pregnancy, described themselves negatively and were more aggressive and suspicious. Engaging in effective child rearing strategies is linked to the ability to take the child’s perspective and understand behavior in terms of the context of the situation and the developmental level of the child (Brunquell, Crichton & Egeland, 1981). However, the ability to do this is related to the developmental level of the parent (Pianta, Egeland, & Erickson, 1989).

Other studies have also shown that parents with personality instability have increased rates of hostile and controlling parenting. Furthermore, irritability, low self-esteem and an external locus of control in parents have all been linked to increased rates of child maltreatment (Belsky & Jaffee, 2006). The link between personality and child abuse may be mediated by the impact of personality traits on parents’ proneness to anger and helplessness. This, combined with family conflict and difficult child temperament, has been shown to predict harsh parental punishment (Belsky & Jaffee, 2006). Another link may be found in the impact of personality characteristics on the attributions that parents make about their children. The intention a parent ascribes to their child’s behavior and their perspective on their child’s dispositions have also been linked to an increased risk for child abuse (Crosson-Tower, 2002). For example, parents
that have maltreated their children misinterpreted developmentally appropriate behavior as willful disobedience or intentional misbehavior when it conflicted with parent’s own needs. These parents have also been found to globally appraise offspring through negative terms such as stubborn, unloving and spoiled (Cicchetti & Carlson, 1989). Abusive parents also see themselves as mistreated or rejected by their child and perceive that the child is not meeting their expectations.

Understandably, there has also been a link established between parents’ own psychological disturbances and an increased potential for undesirable parenting (Cicchetti & Carlson, 1989). While fewer than 10% of child abuse cases can be linked to a psychiatric illness that directly caused the abuse, certain mental health challenges, like learning disabilities, intellectual deficits, and personality disorders, appear to indirectly contribute to abuse by impeding parents’ ability to successfully cope with child related issues (White, Koss, Kazdin, 2010). Furthermore, parents with mental health issues like depression, anxiety, and psychosis have been found to be less active, have lower proportions of parent initiated play and less socially skilled and competent children. In addition, the developmental history of the parents impacts their care giving abilities (Cicchetti & Carlson, 1989). Parents who experienced abuse or did not have their own emotional needs met as children are at an increased risk for being abusers themselves (Crosson-Tower, 2002). However, this may be partially linked to the increased rates of psychological disturbances in adult victims of abuse and neglect. Lastly, parental substance use also impacts parenting; one study found that 11% of maltreating parents reported issues with substance use (Cicchetti & Carlson, 1989).

As mentioned earlier, there has also been a line of research that has investigated child characteristics as risk factors for maltreatment. Children who are born premature, have low birth
weight, or are classified as having “difficult” temperaments are at greater risk for abuse (Crosson-Tower, 2002). Difficult infants may be at increased risk for abuse because of the way caring for these infants impacts parents’ psychological well-being. For example, one study found that fathers of babies with difficult temperaments experienced a decline in their personal efficacy during the transition to parenthood that was not experienced by fathers with calmer babies. However, this can be a difficult avenue of research because child characteristics are also influenced by parenting. As such, the directionality of the relationship between temperament and parenting practices is difficult to determine (Cicchetti & Carlson, 1989). There have also been findings that child effects on parents are short term and short lived (Crosson-Tower, 2002).

The stress generated by caring for an infant is one of the reasons children less than a year old are vulnerable to physical child abuse. In one sample, 5.6% of parents of infants aged six months reported having smothered, slapped or shaken their baby at least once because of his or her crying (Sidebotham & Heron, 2003). However it is important to remember that parents’ perceptions of their child’s behavior are of greater significance in provoking child abuse than the actual behavior of the child (Sidebotham & Heron, 2003). Cultural backgrounds permissive to violence, family breakdown and social isolation are typically associated with child maltreatment (Reijineveld, van der Wal, Brugman, Hira Sing, & Verloove-Vanhorick, 2004) and poor social networks increased the risk of both investigation and substantiation of child abuse (Sidebotham & Heron, 2003).

Neither parent nor child characteristics alone can account for child abuse as evidenced by the fact that not every child or parent with these characteristics are involved in child maltreatment. Abusive parents are enmeshed in multi-problem families with deficits and liabilities (Pianta, Egeland, & Erickson, 1989). Poverty and low socioeconomic status have been
linked to increased rates of neglect and physical abuse. Family structure has also been identified as a risk factor. Specifically, increases in physical abuse and neglect have been found in single parent homes and larger and blended families. Additionally, children in father-only homes are twice as likely to be physically abused. Domestic violence has also been linked to increased rates of child abuse with 30-60% of families that involve intimate partner violence also involving physical child abuse (Pianta, Egeland, & Erickson, 1989).

Another source of influence is the contextual factors of the family; neighborhood context, societal and cultural factors, discrimination and inequality have all been identified as risk factors (White, Koss, Kazdin, 2010). Furthermore, availability of social support buffers stress in parents and increases wellbeing which both indirectly impact parenting (Crosson-Tower, 2002). In addition, perception of support has been linked to specific parenting techniques like use of restrictive or punitive parenting strategies. Social isolation is an identified risk factor for child maltreatment as is family violence, unemployment, poverty and household disorganization (White, Koss, Kazdin, 2010).

Research has also shown that poor empathy and perspective taking also increase the likelihood of abuse. Lower levels of empathy are associated with higher levels of impulsivity (Pianta, Egeland, & Erickson, 1989). This coupled with hostile attribution bias and threat vigilance, increases parents’ reports of child’s negative behaviors. One study found that maltreating parents rated interactions with their children and other children as more difficult and negative than non-maltreating parents rated their and other children (Pianta, Egeland, & Erickson, 1989). In addition, vigilance can lead to chronic feelings of frustration, emotional dysregulation and an increased likelihood of aggressive and punishing responses. It was also
found that these parents are less likely to blame themselves for failed interactions with their children (White, Koss, Kazdin, 2010).

Some of the abovementioned risk factors for physical child maltreatment cannot be addressed by a parenting program. However, research has identified several malleable risk factors to physical child abuse like impulsivity, low frustration tolerance, increased stress, poor sense of parenting competence, sense of role restriction, conflicts with co-parent, lack of social support, increased rates of anger and aggression, and negative and unrealistic views of children, which can be addressed by well-designed interventions. The prevention of child abuse is possible by addressing these risk factors though strengthening the formation of the parent-child relationship, improving parents’ knowledge and ability to cope with stress, and strengthening the child’s adaptive behaviors (White, Koss, Kazdin, 2010). There are several interventions designed to strengthening the bond between parents and their children and/or addressing risk factors for child maltreatment. For example, the Incredible Years Parents and Babies program, which will be discussed in greater detail later, attempts to directly and indirectly address many of the malleable risk factors for the abuse of infants.

**Adolescent Parents and Child Maltreatment**

Becoming a mother as an adolescent is often linked to negative educational, economic and social outcomes for both teen mothers and their children, and some of the characteristics associated with abusive parents (e.g., lack of education, single parenthood, poverty) also are true of adolescent mothers (Budd, Heilman, Kane, 2000). Research has consistently shown that teen mothers are less verbally responsive to their children, less knowledgeable about childrearing, and provide less stimulating learning environments than older mothers (Budd, Heilman, Kane, 2000).
Previous findings show that parent education programs have the potential to prevent some of the negative outcomes for adolescent mothers. For example, a meta-analysis of 8 studies of parenting interventions with adolescent parents found that in four of the studies there were improvements in parent responsiveness to the child, infant responsiveness to mother, and an overall measure of parent-child interactions post-intervention. All of these interventions were considered short term and consisted 1 to 2 hours of intervention for 8-12 weeks (Barlow, et al., 2011).

There is less information about both adolescent fathers and fathers in general; the majority or research and intervention appears to focus on mothers. One systematic review of father involvement in child maltreatment prevention programs found that of the studies that included fathers, most had fewer than 30% of fathers in the sample, and only the two that had greater than 50% of paternal participation reported any father specific findings (Smith, Duggan, Bair-Merrit & Cox, 2012). In a review of eight studies, one included two adolescent fathers, but their data was excluded from the study. There is some evidence to suggest that the partners of adolescent mothers are more likely to be antisocial and abusive or uninvolved (Barlow, Smailagic, Bennett, Huband, Jones, Coren, 2011). However, it is unclear if all of these partners were also adolescents.

Despite the limited research, there is some evidence that adolescent fathers also benefit from targeted parenting interventions. One study found that a co-parenting intervention improved the fathers’ co-parenting behaviors (Fagan, 2008). Another study involving 60 adolescent African American fathers between the ages of 16 and 18 found that fathers benefited more in the experimental condition that include personalized individual, group and case management
components when compared to those that only received group sessions about parenting (Mazza, 2002).

**Preventative Interventions for Child Maltreatment**

There have been a variety of programs designed to decrease the risk for child maltreatment and increase family functioning. Programs designed to prevent child abuse are important not only because they can help prevent many of the negative outcomes mentioned above but also because the current child welfare system is unable to handle the volume of children that may otherwise need to be removed from their homes (Daro & McHurdy, 1994).

Programs aimed to prevent child abuse can be delivered at a universal, selective or indicated level. Prevention at a universal level is addressed to the entire population and is designed to address societal factors that increase the risk for child abuse like acceptance of violence and corporal punishment (Geeraert, Van den Noortgate, Grietens & Onghena, 2004). Selective level preventative measures are designed to focus on specific groups that are identified as being at risk for child maltreatment and are aimed at reducing the risk factors (Geeraert, Van den Noortgate, Grietens & Onghena, 2004). Finally, indicated interventions are designed for families where child maltreatment has already occurred and are aimed at ending maltreatment and minimizing the negative effects of previous abuse for the child and family (Geeraert, Van den Noortgate, Grietens & Onghena, 2004).

There has been much debate about whether these programs should be delivered to all parents at a universal level or only to parents that are at a higher risk for child abuse (Daro & McHurdy, 1994). While universal prevention programs may reach more families and help to create a culture of support for families, they are also much more expensive to provide. As a
result, universal programs are sometimes simplified in an effort to be cost effective and in the process watered down to the point where they are no longer effective (Daro & McHurdy, 1994).

In 2004, Geeraert, Van den Noortgate, Grietens and Onghena conducted a meta-analysis of 40 studies that evaluated the effectiveness of early prevention programs for families with young children at a high risk for physical abuse and neglect (selective interventions). These studies had mostly nonrandomized designs. To be included in the analysis, the studies had to be conducted between 1975 and 2002, focus on early prevention (i.e. involving families sometime between pre-birth and three years of age and taking place before there is identified or substantiated abuse). Additionally the study could not focus on sexual abuse must have examined the impact of the intervention with an independent-groups design or pretest-posttest design (Geeraert, Van den Noortgate, Grietens & Onghena, 2004). This review found a significant positive effect of selective prevention programs. The average effect size across the 40 studies was .29. Overall, these programs produced a decrease in abusive and/or neglectful behaviors and a reduction of risk factors for child abuse (Geeraert, Van den Noortgate, Grietens & Onghena, 2004). Other research suggests that preventative programs have a greater long term impact than indicated programs (Macleod, 1999). Two programs that focus on child abuse prevention, Healthy Start and IY, will be described in more detail; Healthy Start was the focus of a large scale evaluation and IY is a well-established set of curricula designed to increase effective parenting and child management techniques and improve child behavior.
**Healthy Start Program.** Hawaii Healthy Start Program (HSP) is based on Henry Kempe’s lay therapy program and the work of Selma Frailberg. The goal of this program is to identify families before isolation, who have a lack of parenting knowledge, lack of good role models, and daily stressors which lead to abusive and neglectful parenting (Duggan et al., 1999). Interventions like HSP have been documented to improve parenting outcomes. For example, Healthy Families, a version of this program in Alaska, found children in families that had received this treatment had more favorable development and behavioral outcomes at 2 years old (Caldera et al., 2007). Their mothers also had greater parenting self-efficacy, and their families were more likely to use center-based parenting services. Furthermore, fewer of the families that received treatment had home environments that were observed to be poor for child learning. The impact of this intervention was deemed to be greater for those with lower baseline risk. There was no conclusive evidence that efficacy increased with higher dose of service (Caldera et al., 2007). A variety of data has been collected to evaluate the impact of HSP and has generated many research studies.

The initial data collection occurred with families that were recruited from November 1994-December 1995 and followed for three years. This evaluation involved six HSP sites serving geographically defined areas on the island of Oahu. All of the sites were on the same island to minimize the cost of monitoring fieldwork. The sites were operated by three community agencies with each agency responsible for two sites. Early Identification (EID) staff identified families based on the usual HSP criteria. Families were eligible to be in the study if they lived in the target community, were not already known to Child Protective Services, and the mother understood English well enough to be interviewed without a translator and if the family’s HSP site was accepting new referrals (Duggan, et al., 1999). Overall, there were 373 families in the
HSP group, 270 in the main control group, and 41 in the testing control group. Further details about recruitment and the original sample can be found in Duggan, et al., 1999.

A rigorous evaluation of the program found no positive effects on maternal life skills, well- and injured-child health care, social support, substance use, child development, home learning environment, parent-child interactions or child maltreatment. However, significant differences were found in the program implementation at the various agencies. That is, there were agency-specific positive program effects on parent-child interaction, child development, maternal confidence in adult relationships and partner violence (Duggan, et al. 1999).

Specific to child maltreatment, the program did not prevent child abuse or increase use of nonviolent discipline, but it was modestly successful at preventing neglect (Duggan, et al., 2002). Although many of the participants had malleable parental risk factors for child abuse, program staff often failed to recognize these factors and link the parents to relevant resources. As a result, the intervention did not reduce any risk factors for participants (Duggan, et al., 2003). Intervention parents were less likely to use mild forms of physical discipline than control mothers. However, treatment and control mothers were equally likely to use severe forms of physical discipline (Duggan et al., 2007).

As for risk factors for abuse, severe physical assault was associated with maternal depression and partner violence. Assault to child’s self-esteem was also associated with maternal depression, maternal illicit drug use, partner violence, and mothers’ perceptions of child’s demands (Windham, et al., 2004). Similarly, families that reported the birth of an additional child within 24 months of the child enrolled in the study were also more likely to report neglectful parenting of the child enrolled in the study. This child was also more likely to have
behavioral problems and lower cognitive functioning (Crowne, Gonsalves, Burrell, McFarlane, Duggan, 2011).

Additionally, one agency did see improvement in maternal mental health of mother enrolled in the program at the agency. Furthermore, there was a reduction in problem maternal alcohol use and repeated incidents of physical aggression between partners for families receiving 75% or more of the expected home visits while enrolled in HSP (Duggan, et al., 2003).

Incredible Years: Parents and Babies. The Incredible Years (IY) Parents and Babies parenting program is a part of the evidence based IY Series of parent, teacher, and child programs. The series consists of four parenting programs: Babies (for parents of children 0-1), Toddlers (for parents of children 1-3), Preschoolers (for parents of children 3-5) and School age (divided into separate programs for parents of children 6-8 and 9-12). The children’s groups are for children age 3-8 and ideally are used in conjunction with the relevant parenting group (Webster-Stratton, & Reid, 2012).

Both the parent and children programs are designed to be group interventions. This provides many benefits: it reduces the cost of service delivery, allows parents and children to learn from one another, reduces the sense of shame and isolation that can come from struggling with parenting or behavioral issues and fosters the development of family support networks. Service providers are also encouraged to provide child care for participants’ children, meals and potentially transportation to reduce attendance barriers. Each IY group is led by trained facilitators and consists of a series of videotaped vignettes designed to model relevant skills for parents and/or children. The program is designed to be collaborative, interactive and provide models of various cultural and socioeconomic backgrounds, parenting styles and child temperaments.
In an effort to empower parents, the program focuses on the parents’ personal goals and strengths instead of their deficits (Webster-Stratton & Reid, 2012). The IY parenting programs for older children have already been seen to be effective in increasing positive parenting practices with families involved in the child welfare system and therefore have an implied issue or risk of abuse or neglect (Webster-Stratton & Reid, 2010). There have been several informal and quasi-experimental studies that have evaluated the effectiveness with this population. Parents in the child welfare system that have completed the IY parenting program have also shown a reduction in stress, increased empathy toward their children and more family and overall support after participation (Casey Family Programs, 2010).

This innovative program targets many of the risk factors for physical abuse through a parenting intervention for new parents. The Incredible Years Parents and Babies program (IY Babies) is designed for parents to attend with their babies (0-12 months) and is intended to teach parents how to observe and understand their babies’ cues, understand that their babies are intelligent learners, provide physical and tactile stimulation for babies and understand their babies cognitive development (Webster-Stratton & Reid, 2010). Although the program is fully developed, its efficacy in reducing child maltreatment has not been evaluated. However, based on the success of other IY programs, it is expected that IY Babies will be effective in improving parental knowledge and skills and therefore increase parental competency, confidence and bond, reducing parental stress and the likelihood of child maltreatment.

Previous research suggests that a warm, positive bond between parent and child leads to a more socially competent child. In contrast, elevated levels of parental negative affect and hostility is disruptive to children’s ability to regulate their emotional responses and manage conflict appropriately. Deficits in these skills may make a child more vulnerable to child abuse.
The IY parent program for preschoolers has been evaluated with Head Start families. Results indicated a reduction in critical remarks/commands and harsh discipline and an increase in nurturing, positive reinforcement and parent competence. Mothers also reported improvement in their discipline strategies including greater consistency, fewer negative discipline techniques and appropriate limit setting. Analysis of data from Head Start studies also revealed that there are few differential treatment responses based on ethnicity. Caucasian, African American, Asian and Hispanic families all showed improvements relative to controls that were sustained 1 year later (Webster-Stratton, 2005).

Parent education programs designed to prevent child maltreatment typically aim to do so by improving parents’ child rearing skills, encouraging positive child management strategies and increasing parents’ knowledge of child development (Mikton & Butchart, 2009). These techniques are all consistent with the goal of IY Babies. The IY Babies program covers the baby 0-12 months of age and can be completed in 8-10 sessions. The content is divided into six sections: (a) getting to know your baby; (b) parents as responsive communicators and babies as intelligent language learners; (c) providing physical and visual stimulation for your baby; (d) learning to read babies’ minds; (e) gaining support; and (f) the emerging sense of self. The infant accompanies the parent to the group and parents participate in hands-on role plays and exercises with their own baby (Webster-Stratton & Reid, in press).

A comprehensive review of child maltreatment prevention studies found that parent education programs show promise in reducing the risk factors for child maltreatment and for actually preventing child maltreatment (Webster-Stratton & Reid, 2010). Specifically, mothers that complete the IY parenting class reported lower scores on stress, distress, dysfunctional parent-child relationship and difficult child scales (Webster-Stratton & Reid, 2010). There are
comparatively few studies to investigate the effectiveness of the Incredible Years Babies program. One review by the creator of the program cites 10 replication studies that evaluated the IY parenting programs, and none of these evaluated the baby program or specifically examined the reduction of child maltreatment (Webster-Stratton & Reid, in press).

While this program has never been evaluated specifically for this purpose, previous studies have demonstrated the feasibility of completing this intensive parenting program with parents and infants. Parents participating in the Incredible Years Parents and Babies program in Essex rated the program positively on the group, overall teaching format, overall specific parenting techniques, and the group leaders. Specifically parents indicated that the aspects of the program they enjoyed the most were interacting with their baby, talking in groups, exchanging ideas and visual aids, and the relaxed atmosphere. These parents also indicated that they felt the group was too short and that there were not enough sessions (Gordan & Richards, 2008) providing supporting evidence that the meeting schedule for the program is realistic.

**Purpose of this Research**

Building off the foundation of existing evidence from the HSP Families Study and the innovative model of IY Babies, the present study attempted to advance knowledge about and interventions for child maltreatment during infancy. Two separate studies were designed to (1) identify unique predictors of child maltreatment during infancy and (2) evaluate the impact and feasibility of a specific program designed to support parents of infants as a strategy for reducing child maltreatment. Study 1 uses the data gathered in the HSP Families study to examine what variables predicted cases of physical child maltreatment and what variables predicted new cases of physical child maltreatment after the first year of life.
Study 2 examined the feasibility of providing the IY Babies to teen-young adult parents and the promise of this intervention in reducing the risk for physical maltreatment in infants. Given the engaging aspects of IY Parent programs, we expected that young adult parents would be willing to participate in and complete the IY Babies program. Moreover, we expected that they would report favorable views about the benefits the program.
Chapter III: Methods

The following section provides an overview of the research methods, including a description of research participants and setting, independent and dependent variables, and data analysis procedures.

Participants & Sampling

Study 1. The data for study 1 was collected from families recruited from November 1994 through December 1995 at six HSP sites serving Oahu, Hawaii. These sites were operated by three community agencies. Families were identified as at-risk using the standard HSP protocol. Families were eligible for the study if they were not already involved with Child Protective Services (CPS), the mother understood English well enough to not need a translator and if the families’ HSP site was accepting new referrals. Overall, 897 families met this criteria (Duggan et al. 1999).

Of the eligible families, 730 (81%) gave their initial consent to participate in the study and were randomized in control and treatment groups. Of those, 684 were interviewed at baseline. Overall, parents in the study were slightly younger, were more likely to be extremely high risk and to have given birth prematurely and were more likely to have completed an interview in person instead of over the phone than eligible non participants (Duggan et al. 1999). There were 373 families in the treatment group, 270 in the main control group and 41 in the testing control group (Duggan et al. 1999).

Follow up data were collected through structured parent interview, developmental testing of the children, home observation, and review of relevant records. Yearly, 88% of the sample completed a follow up interview, including families who had dropped out of the program itself.
Over the 3 year follow-up period, 89% of participating families completed at least two interviews and 81% completed all three interviews (Duggan, et al., 2004).

For the current study, only families that responded to the item on the Conflict and Tactics scale that asked about the use of any severe physical punishment were included. This resulted in a total sample of 560 families. The sample includes 52.7% female children (n=295). The majority of the sample, 57.7% (n=323) was below the poverty line. 45.9% (n=257) of the caregivers were classified as having poor mental health, and 7.3% (n=41) of the target children had low birth weight (less than 2500 grams or approximately 5.5 pounds). The majority of the sample (27.9%, n=156) identified as multi-racial. As the sample was collected in Hawaii, it had a unique racial composition compared to that of mainland United States of America (see table 1). Initially, 505 families denied the use of any severe physical discipline at Time 1. Of these families, 58 endorsed the use of any severe physical discipline at Time 2.

**Study 2.** The target population for study 2 was parents with infants who were considered at a greater risk for physical child maltreatment because of younger parental age and/or lower parental educational achievement. The IY programs have been created with attention to ethnic diversity and have been shown to be effective in other countries, so it will be appropriate for members of various cultural backgrounds. Initially, attempts were made to recruit a total of 40 adolescent parents to participate in the study. Parents were eligible to participate in the study if they are 19 years old or younger and had an infant that was younger than 12 months. However, when these recruitment efforts failed, eligibility was expanded to include parents up to the age of 22 years old with an infant that was younger than 12 months. Parents who agreed to participate in the study were led through informed consent by a trained researcher. As mentioned above, five families initially agreed to participate in the intervention. Family A was Caucasian and
consisted of a two month old infant, her married mother (20) and father (23) and her maternal grandmother. All adults had high school diploma/GED and the grandmother had attended some community college. None of the adults were currently working and the parents’ income was listed at less than $10,000. The family did receive Women, Infants and Children (WIC) benefits, participate in the Supplemental Nutrition Assistance Program (SNAP), and received medical insurance. Family B consisted of a single, African American pregnant female (22). She worked at a fast food restaurant and made less than $15,000 a year. She had graduated from high school and attended one year of college. She received the same level of financial assistance as Family A. Family C consisted of one 10 month old infant and her married mother and father (both 19). The mother listed her ethnicity as African American/Caucasian and Asian. Both parents were college students and the father also worked. Income and assistance information was unavailable for this family. Families D and E were comprised of mother-infant dyads, but after indicating interest at the recruitment meeting, these families did not actually engage in the data collection or intervention, so no other information is available about them.

Measures

**Study 1.**

*Conflict Tactics Scale (CTS).* The Conflict and Tactics Scales are widely used instruments for identifying domestic violence (Straus, 2007). There are two versions: The CTS2 and Conflict and Tactics Scale-Parent-Child CTSPC. The CTS2 measures violence against a romantic partner with scales to assess for physical assault, psychological aggression, negotiation, injury, and sexual coercion by a partner (Strauss, 2007). Straus (2005) reported that reliability for the CTS2 ranged from .34 to .94, with a mean of .77. Similarly, test-retest correlations ranged from .49 to .90 with a mean of .72.
CTSPC measures how often in the past year a caregiver engaged in specific behaviors ranging from nonviolent discipline to psychologically and physically abusive acts and indicators of neglect (Duggan, McFarlane, Fuddy, Burrell, Higman, Windham, & Sia, 2004). Previous research supports the use of the CTSPC to measure child maltreatment. An in-depth review of the literature using this measure found that in at least nine studies, this measure revealed more cases of maltreatment than had been indicated in CPS reports (Straus, Hamby, Finkelhor, Moore, Runyan, 1998).

The measure originally aggregated the behaviors into six subscales that were labeled nonviolent discipline, psychological aggression, minor physical assault, severe physical assault, very severe physical assault, and neglect. However, additional Cronbach’s alpha was calculated and a factor analysis was conducted by Duggan and colleagues with the HSP sample to determine the psychometric properties of this classification for this sample and whether a different set of subscales might be indicated. This resulted in five consistent factors: common corporal and verbal punishment, assault on child’s self-esteem, hitting with an object, extreme physical violence, and neglect (Duggan, et al., 2004).

Based on the factor analysis, the physical assault subscale included: burned or scalded the child on purpose; grabbed the child around the neck and choked; threw or knocked down the child; hit child with fist or kicked hard. The items making up this subscale were summed to reflect the number of occurrences of physical assaults during the previous year. However, reports of abuse consistent with this definition were rare so the scales were dichotomized. The physical assault outcome resulted from parents reporting any of the respective items as occurring once or more during the year prior to assessment (Windham, et al., 2004).
For this study and consistent with the approach used by Duggan et al., the existence of any extreme physical violence at time one or time two was used as dependent variable. Duggan and colleagues settled on this approach for the following reasons: the CTSPC has been used extensively with low-income and Asian populations (Windham, et al., 2004), substantiated CPS reports were extremely low (less than 1%), and this self-report measure revealed more cases (Windham, et. al, 2004). While there are concerns that the nature of self-reported measures likely leads to underestimates of true rates of abuse, this use of this measure yielded higher rates of abuse than official reports, which is consistent with other studies (e.g. Flisher et al., 1997; Straus & Gelles, 1990 as cited in Windham, et al., 2004) and lends credibility to its use in research (Windham, et. al, 2004).

**Demographic Information and Family Stress Checklist (FSC).** The data gathered as part of the Hawaii Healthy Start Program and used for Study 1 included a variety of demographic information for the target children, their mothers and the family as a whole. As part of the Hawaii Healthy Start program, Early Identification (EID) workers reviewed medical records for all new births to identify families at an increased risk for child abuse and neglect. EID workers measured the families’ risk for abuse based on 15 areas: parents not married, unemployed partner, inadequate income, unstable housing, lack of telephone, less than high school education, inadequate emergency contacts, marital or family problems, history of abortions, abortion unsuccessfully sought or attempted, adoption sought, history of substance abuse, history of psychiatric care, history of depression, and inadequate prenatal care (Dungan, et al., 1999).

What information was not available in medical records was gathered during an interview using Kempe’s (1976) Family Stress Checklist (FSC) which assesses for parental substance use, poor mental health, domestic violence, history of abuse in parents’ childhood, unrealistic
expectations of the child, and if the child was unwanted or had other risk factors for poor bonding (Korfmacher, 2000). Parents’ mental health was also evaluated by EID workers using the Mental Health Inventory-5 (MHI-5, see below for description of measure).

Additional demographic information was gathered during interviews with caregivers. For this study, the child’s sex (biologically male or female), if the child had low birth rate or was born while his or her mother was a teenager, if the family spoke a language other than English, and if the family was classified as living in poverty were used as independent variables.

**Mental Health Inventory-Five Item Version (MHI-5).** The MHI-5 is a five item screener for mental health conditions. It asks respondents to rate on a Likert scale how often during the last month they have “been a very nervous person,” “felt calm and peaceful,” “felt downhearted and blue,” and “felt so down in the dumps that nothing could cheer you up?” The MHI-5 was found to be just as effective as 18 item version, MHI-18, and the 30-item version of the General Health Questionnaire (GHQ-30), and better than the 28-item Somatic Symptom Inventory at detecting diagnosable mental health conditions (Berwick, et al., 1991). The HSP data includes both the parents’ score on the MHI-5 and a dichotomous variable of the EID workers’ classification of the parents’ mental health; parents were indicated as having poor mental health if their score on the MHI-5 was less than or equal to 67, and has not having poor mental health if it was higher. Both this dichotomous version of the MHI-5 information and the parents’ actual MHI-5 score were included in the current analyses.

**Center for Epidemiological Studies Depression Scale (CES-D).** Maternal depression was measured using the CES-D (Radloff, 1977) which is a self-report inventory measuring the frequency of 20 depressive symptoms of individuals in the past week. The 20 items are rated on a scale of 0 to 3. The total scores are in a range from 0 to 60. Scores above 16 represents
clinically significant depression symptoms (Radloff, 1977). The CES-D provides four factor scores to describe different clinical features, of depression: depressed affect (e.g., “I felt sad”), positive affect (e.g., “I felt hopeful about the future”), interpersonal problems (e.g., “People were unfriendly”), and somatic complaints (e.g., “I could not get going”, “My sleep was restless”). Schroevers et al. (2000) reported that the Cronbach's α coefficient for Depressed Affect was high, in the patient and reference group 0.87 and 0.88 respectively; Cronbach's a for Positive Affect was in the patient and reference group 0.75 and 0.76 respectively. In addition, CES-D has displayed adequate validity. In order to test the construct validity, Radloff (1977) tested the convergence between CES-D and clinical ratings, as well as other well-recognized self-report measures of depression. The correlations of the CES-D with the Hamilton Clinician’s Rating scale and with the Rask Rating scale were .69 and .75, respectively, in a clinical population. Results indicated that in the patient group, the correlation between the CES-D scale and ratings of severity of depression by the nurse-clinician was .56. The CES-D was used in Study 1 to measure maternal depression.

**Parenting Stress Index-Short Form (PSI-SF).** PSI-SF is a self-report assessment to evaluate parents’ level of stress related to caring for their children (Abidin, 1983, 1995). Parents use a 5-point scale to indicate the degree to which they agreed with each 36 statements designed to assess two dimensions of parent stress: personal distress and child-bearing stress. (Abidin, 1995). Personal distress refers to the level of distress caused by personal factors like depression and spousal conflict due to the demands of child-rearing. In contrast, the child-bearing stress refers to parents’ level of satisfaction with their interactions with children, and the parents’ perception of their child’s ability to regulate their emotion.
This scale has been found to have internal validity, be stable over time, relate to overall distress have good convergent validity (Reitman, Currier, & Stickle, 2002). For example, scores on the personal distress subscale were significantly related to Global Severity Index scores on the SCL–90–R ($r = .54$) (Haskett, Smith Scott & Sabourin Ward, 2004). It has also been found to match observed parent behavior (Haskett, Ahern, Ward & Allaire, 2006). Furthermore, correlations between assessments taken one year apart were $r=.61$ (Personal Distress), $r=.75$ (Childbearing Scale), and $r=.75$ for the total measure (Haskett et al., 2006). PSI-SF was used in Study to measure maternal stress.

*Home Observation for Measurement of the Environment (HOME).* HOME is an observational measure that gathers information about the quality and quantity of stimulation and support available for children in the home environment (Bradley, 1993; Bradley & Caldwell 1981). There is an infant-toddler version (birth to age 3) of the HOME and an early child version (3 to 6 year old). In HSP study both of these two versions are used to measure parenting behavior over the time (Caldera et al., 2007). Study 1 only uses data from the infant-toddler version which is composed of 45 items. These items are clustered into 6 subscales: Parental Responsivity (e.g., “Parent caresses, kisses, or cuddles child during visit”), Acceptance of Child (e.g., “Parent encourages child to contribute to the conversation”), Organization of the Environment (e.g., “Parent does not interfere with or restrict child more than three times during visit”), Provision of Play Materials (e.g., “Child has toys that teach colors, size, and shapes”), Parental Involvement (e.g., “Parent reads to child at least three times a week”), and Variety in Experience (e.g., “Family member has taken child to museum during past year”). To this information a trained rater conducts a 45- to 90-min home visit, during which the target child and the child's primary caregiver are present and awake. Higher scores indicate more favorable
parenting behaviors and/or home environment (Bradley 1981), and scores lower than 33 indicating a poor environment and/or parenting behaviors (Bradley et al., 1989).

The test manual for this inventory describes its psychometric properties (Bradley & Caldwell, 1981). In regards to construct validity, HOME was compared to the parent-child Conflicts and Tactics Scale (CTSPC) and Adult-Adolescent Parenting Inventory (AAPI). Result indicated moderate convergence between HOME and CTSPC ($r = .45$), and a significant correlation between HOME and AAPI ($r = .95$) (Caldera et al., 2007). In addition, HOME scores were indicated to be predictive of children’s early achievement (Bradley, 1981) and family’s socio-economic status (Wachs & Gruen, 1982). Furthermore, previous literature indicates that inter-rater pass levels of HOME exceed 85% and most often greater than 90% (Adams, Campbell, & Ramey, 1984; Gottfried & Gottfried, 1984; Lanphear et al., 2005). The estimates of internal consistency have been above .80 for the total scores and have ranged from .30 to .80 for subscales (Bradley, Mundfrom, Whiteside, Casey, & Barrett, 1994; Bradley 1993).

**Attachment Style Questionnaire (ASQ).** The Attachment Style Questionnaire (Feeney, Noller & Hanrahan, 1994) consists of 40 items rated on a 6 point Likert scale ranging from totally disagree (1) to totally agree (6). Sample items include “I find it hard to trust people” and “I worry a lot about my relationships” (Feeney, Alexander, Noller, & Hohaus, 2003). The ASQ targets attachment security for multiple types of relationship including parent-child relationship. In the HSP study, only the first four scales (34 items) were used because the fifth scale was not relevant to the purpose of the research. Two major factors were yielded from the five subscales: attachment anxiety and attachment avoidance, which are suggested to predict maternal depression, stress, and readiness to end abusive relationships (Feeney, Alexander, Noller, & Hohaus, 2003; Meredith, Strong, & Feeney, 2006; Shurman &Rodriguez, 2006). The
revised anxiety factor measures individuals’ worry about others not being available and the attachment avoidance dimension includes items indicating discomfort being close with others. Confirmatory factor analysis revealed that the original ASQ subscale structure was not a good fit for the HSP sample in Hawaii, so an exploratory factor analysis was conducted by HSP staff to identify the latent construct (Duggan, 1999). Reliability analyses revealed high internal consistency on both the attachment anxiety factor ($\alpha=.80$) and the attachment avoidance factor ($\alpha=.88$) (Duggan, 1999, 2002, 2007). The ASQ was used in Study 1 as a measure of maternal attachment style.

**The Nursing Child Assessment Teaching Scale (NCATS).** The NCATS (Barnard, 1994) includes 73 yes or no questions designed to measure the quality of the caregiver’s behavior while teaching the child a new skill during an interaction that is up to 6 minutes in length. During the HSP study, the measure was coded live by certified research staff who had been trained to code at least 66 of the 73 items correctly during five consecutive observations (Duggan, Berlin, Cassidy, Burrell & Tandon, 2009). This measure has been determined to have acceptable construct and predictive validity, internal consistency and test-retest validity (Duggan, et al., 2009). The NCATS was used in Study 1 as a measure of parental teaching behavior.

**Study 2.**

**Parental Stress Scale (PSS).** The PSS is an 18 item questionnaire for parents that assess the positive and negative aspects of parenting. Higher scores on the measure indicate a higher level of stress related to parenting. The Parental Stress Scale demonstrated satisfactory levels of internal reliability (.83), and test-retest reliability (.81) (Berry & Jones, 1995). The scale demonstrated satisfactory convergent validity with various measures of relevant constructs including stress, emotion, and role satisfaction, and social support. Discriminant analyses
revealed this scale's ability to discriminate between parents of typically developing children and parents of children with both developmental and behavioral problems (Berry & Jones, 1995).

**Child Abuse Potential Inventory.** The CAP is a self-report screening tool designed to evaluate parents’ risk for physical child abuse. The CAP measures variables that represent elements of psychiatric and social-interactional models of physical child abuse. It includes 77 items that assess six factors including Distress, Rigidity, Unhappiness, Problems with Child and Self, Problems with Family, and Problems with Others. It also contains three validity scales that assess for lying, random responses, and inconsistency. The CAP has demonstrated high internal consistency ranging from alpha .92 to .98 and has also shown adequate stability over time (Milner, 1986).

**Parenting Questionnaire.** This measure was designed for use during study 2. This 21 item form was originally designed for use with adolescent parents and includes questions about academic achievement, parent’s confidence in their ability to calm their baby, specific parenting behaviors and specific knowledge based content that was covered by the curriculum. There were not enough participants to examine the psychometric properties of this measure.

In addition to these measures, a parent demographic form was used to gather information about parent and family characteristics. Furthermore, weekly session rating forms were used to assess parents’ perceptions of each session, parent attendance was tracked and an end-of-program rating form of social validity was collected to assess the feasibility and utility of this parenting curriculum with this target population. At follow up, parents were also be asked if they had any referrals to child protective services. If so, they were asked to provide a release of information so that the details of the case may be obtained. This provided an additional source of information about child maltreatment in the families. Fidelity of intervention delivery was
tracked using session leader checklists that are included in the program and ongoing supervision with an experienced faculty member.

**Procedure**

**Study 1.**

*Data Collection.* As previously described, the HSP data was gathered in Hawaii with families initially recruited for approximately a year beginning in November of 1994 and subsequently followed for three years (Duggan, et al., 1999).

*Analytic Plan.* To examine hypothesis 1a concerning the correlation between severe abuse and various risk factors, Pearson point biserial correlations were calculated between all predictors and severe abuse at time 1 and time 2. Risk factors included intervention group status, sociodemographic variables (child sex, low birth weight, poverty and if child was born when mother was an adolescent), parental stress ratings on the PSI, maternal baseline risk indicated by FSC total, quality of home environment via the HOME total, current substance abuse, parents’ behavior when teaching children new tasks via the NCATS, partner abuse as measured by the Conflict and Tactics scale, parent mental health symptoms on the MHI-5, maternal depression as measured by the CES-D, and attachment styles and concerns as measured by the ASQ.

To examine hypothesis 1b, separate binary logistic regressions were conducted to examine the unique contribution of correlated predictors on the likelihood of severe physical discipline at Time 1 and Time 2. Given the large number of predictors entered in these first set of regression analyses, we repeated the binary logistic analyses with only significant predictors to identify a set of the most salient predictors. A final binary logistic regression was conducted to examine which variables uniquely explained to new cases of severe physical discipline at Time 2 (i.e. only families that answered “no” at Time 1, but “yes” at Time 2).
Study 2.

Recruitment. There were many attempts to recruit for the IY Babies group, but success was limited. The developer of the curriculum has had success with similar studies when focused on recruiting from child welfare agencies (Webster-Stratton & Reid, 2012). A similar strategy was attempted for this study, however, representatives from the local child welfare agency were not open to providing the IY Babies group to their constituents. Without an existing connection to this agency it was difficult to access families that may be more motivated to participate in more intensive programs in an effort to improve maladaptive parenting and/or regain custody of their children. Eventually several families were recruited from a local agency providing pregnancy support (see Results section for more information on recruitment efforts).

The caregivers who participated in the study completed a battery of pre-assessments after being consented into the project. This battery included the PSS, a Parenting Questionnaire developed by the researchers and CAP. Post-assessments were delivered upon completion of the curriculum and included the abovementioned measures in addition to the Parent Report of Social Validity. Those who completed the program also completed the CAP, Parenting Questionnaire, and PSS approximately three months after they completed the parenting group. Each caregiver received $25 for their time and effort in complete each of the three assessments, for a total of $75 throughout the course of the project.

Treatment Procedures. Treatment was delivered by two advanced level doctoral students who attended IY Babies group leader training sessions that were sanctioned by the program developer. These students were supervised by a faculty member experienced with this and other IY curricula. The treatment was delivered in eight sessions and followed the IY Babies training format; each session was delivered in a group format and included discussion, role-play, video
vignettes and practice. Participants were also given homework assignments that were reviewed at
the beginning of each session.

Chapter IV: Results

Study 1. Study 1 investigated the impact of socio-demographic characteristics, parental
mental health and stress levels, child timing and birth weight, partner conflict, and neighborhood
and home resources on the use of any severe physical assault at Time 1, Time 2, and for new
cases only at Time 2. Severe physical assault was defined as a dichotomous variable as
indicated by the occurrence of any of the following actions as reported on the CTSPC: burning or
scalding the child on purpose, grabbing the child around the neck and chocking, throwing or
knocking down the child, hitting the child with a fist or kicking the child hard (Windham, et. al,
2004).

Descriptive Statistics. All analyses were conducted using IBM SPSS (Statistical Package

Table 1

Race of HSP Participants

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>45</td>
<td>8.0</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>64</td>
<td>11.4</td>
</tr>
<tr>
<td>White</td>
<td>67</td>
<td>12.0</td>
</tr>
<tr>
<td>Multi-racial</td>
<td>156</td>
<td>27.9</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>119</td>
<td>21.3</td>
</tr>
<tr>
<td>Filipino</td>
<td>109</td>
<td>19.5</td>
</tr>
<tr>
<td>Total</td>
<td>560</td>
<td>100.0</td>
</tr>
</tbody>
</table>
**Correlations.** Pearson point biserial correlations were calculated between all risk factors (intervention group status, sociodemographic variables parental stress ratings, maternal baseline risk, quality of home environment, current substance abuse, parents’ behavior when teaching children new tasks, partner abuse, parent mental health symptoms, and Attachment styles and concerns) and severe abuse at time 1 and time 2. Results revealed several small correlations. Physical assault at time one was correlated with lower gestational age, lower birthweight, mother’s involvement with Child Protective services, lower quality of the home environment, caregiver total and caregiver/child total scores generated during teaching task, mother’s unrealistic expectations of the child, anxious attachment, and higher mental health concerns for parents.

Severe physical assault at time 2 was associated with severe physical assault at time 1, parent being classified as having mental health concerns, parents’ behavior when teaching a task and the caregiver/child rating generated during this task, speaking a language other than English, mother’s alcohol use during the previous year, anxious attachment style, insecure attachment style, parental depression, parental stress, and child temperament.

**Table 2**

*Pearson Point Biserial Correlations Among Key Study Variables*

<table>
<thead>
<tr>
<th></th>
<th>Any Severe Assault Time 1</th>
<th>Any Severe Assault Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Severe Assault Time 1</td>
<td>--</td>
<td>0.38**</td>
</tr>
<tr>
<td>Study Group Assignment</td>
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<td></td>
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<tr>
<td>(1= Control, 2= intervention)</td>
<td>0.03</td>
<td>-0.01</td>
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<tr>
<td>Baby’s Sex</td>
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<td>-0.05</td>
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<tr>
<td>Race</td>
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<tr>
<td>Variable</td>
<td>Coefficient 1</td>
<td>Coefficient 2</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Baseline Poverty (0 = under, 1 = Over)</td>
<td>-0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>Mental Health MHI-5</td>
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<td>-0.07</td>
</tr>
<tr>
<td>Mental Health MHI-5 (Dichotomous)</td>
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<td>-0.09*</td>
</tr>
<tr>
<td>Gestational Age</td>
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<td>-0.02</td>
</tr>
<tr>
<td>Birthweight</td>
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</tr>
<tr>
<td>Birthweight less than 2500 grams</td>
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<tr>
<td>Mother history of childhood abuse</td>
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<td>0.01</td>
</tr>
<tr>
<td>Mother CPS involvement</td>
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<td>-0.05</td>
</tr>
<tr>
<td>Mother Multiple Life Stressors</td>
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<td>0.04</td>
</tr>
<tr>
<td>Mother Unrealistic Expectations for Child</td>
<td>0.09*</td>
<td>0.00</td>
</tr>
<tr>
<td>Mother Harsh Punishment of Child</td>
<td>0.07</td>
<td>-0.04</td>
</tr>
<tr>
<td>Mother Perceives child as Difficult</td>
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<td>0.03</td>
</tr>
<tr>
<td>Mother Child Unwanted or Risk for Poor Bonding</td>
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<td>-0.08</td>
</tr>
<tr>
<td>EID FSC Mother Total</td>
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<td>0.00</td>
</tr>
<tr>
<td>EID FSC Mother Very High Risk (&gt; 45)</td>
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<td>-0.02</td>
</tr>
<tr>
<td>Father history of childhood abuse</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Father CPS involvement</td>
<td>-0.07</td>
<td>-0.05</td>
</tr>
<tr>
<td>Father Multiple Life Stressors</td>
<td>-0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>Father Unrealistic Expectations for Child</td>
<td>0.09</td>
<td>0.00</td>
</tr>
<tr>
<td>Father Harsh Punishment of Child</td>
<td>0.05</td>
<td>0.00</td>
</tr>
<tr>
<td>Father Child Unwanted or Risk for Poor Bonding</td>
<td>0.00</td>
<td>-0.03</td>
</tr>
<tr>
<td>EID FSC Father Total</td>
<td>0.02</td>
<td>0.00</td>
</tr>
<tr>
<td>Teen at Current Birth</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Adolescent at Current Birth</td>
<td>-0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Completed Schooling</td>
<td>0.00</td>
<td>-0.01</td>
</tr>
<tr>
<td>Variable</td>
<td>t-value</td>
<td>p-value</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Language other than English</td>
<td>0.13**</td>
<td>0.11*</td>
</tr>
<tr>
<td>Mother Drug Use Past Year</td>
<td>0.09*</td>
<td>0.05</td>
</tr>
<tr>
<td>Mother Alcohol Use Past Year</td>
<td>0.04</td>
<td>0.09*</td>
</tr>
<tr>
<td>Current Alcohol Problem</td>
<td>0.02</td>
<td>0.08*</td>
</tr>
<tr>
<td>Current Drug Problem</td>
<td>0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>Current Substance Use Problem</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Mother’s Race</td>
<td>0.00</td>
<td>-0.06</td>
</tr>
<tr>
<td>Verbal Aggression by MOB</td>
<td>0.05</td>
<td>0.02</td>
</tr>
<tr>
<td>Physical Aggression by MOB</td>
<td>0.02</td>
<td>0.08</td>
</tr>
<tr>
<td>Verbal Aggression by FOB</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Physical Aggression By FOB</td>
<td>0.02</td>
<td>0.00</td>
</tr>
<tr>
<td>Anxious Attachment Score</td>
<td>0.11**</td>
<td>0.12**</td>
</tr>
<tr>
<td>Avoidant Attachment Score</td>
<td>-0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>Insecure Attachment</td>
<td>0.04</td>
<td>0.10*</td>
</tr>
<tr>
<td>HOME Total</td>
<td>-0.12**</td>
<td>-0.10</td>
</tr>
<tr>
<td>Sensitivity to Cues</td>
<td>-0.07</td>
<td>0.01</td>
</tr>
<tr>
<td>NCATS Caregiver Total</td>
<td>-0.10*</td>
<td>-0.07</td>
</tr>
<tr>
<td>NCATS Child Total</td>
<td>-0.04</td>
<td>-0.04</td>
</tr>
<tr>
<td>NCATS Caregiver/Child Total</td>
<td>0.10*</td>
<td>-0.07</td>
</tr>
<tr>
<td>CES-D Total</td>
<td>0.11*</td>
<td>0.13**</td>
</tr>
<tr>
<td>MHI-5</td>
<td>-0.12**</td>
<td>-0.15**</td>
</tr>
<tr>
<td>PSI Total</td>
<td>0.26**</td>
<td>0.23**</td>
</tr>
<tr>
<td>Bates Temperament Scale Total</td>
<td>0.10</td>
<td>0.12**</td>
</tr>
<tr>
<td>HOME Total (Time 2)</td>
<td>-0.08</td>
<td>-0.07</td>
</tr>
<tr>
<td>NCATS Sensitivity to Cues (Time 2)</td>
<td>-0.06</td>
<td>-0.03</td>
</tr>
</tbody>
</table>
Regression Analyses. Binomial logistic regressions were conducted to evaluate hypothesis 1b that sociodemographic characteristics, parenting stress, family stress, home learning environment, current substance use, maternal depression, socioemotional home environment, partner abuse, maternal mental health, and maternal attachment would each uniquely predict existing severe physical assault incidences at 1 year follow up and 2 year follow up, and new cases that emerged at 2 year follow up.

Time 1. Based on the significant relations observed in the correlation analysis, a logistic regression was performed to examine the effects of the following variables at time 1 on the likelihood that participants engaged in severe assault of the child at time 1: gestational age, birthweight, mother’s involvement with child protective services, mother’s unrealistic expectation of child’s development, speaking a language other than English, mother’s drug use during the past year, anxious attachment, HOME total, NCATS caregiver total, NCATS child/caregiver total, CES-D total, MHI-5 total, PSI total and Bates temperament score. The regression analysis was conducted twice. Once with the dataset as is and once with removing cases classified as outliers by using the criteria of studentized residuals greater than +/- 2. Both
models were significant, but removing outliers increased correct prediction from 90.5% to 94.9%. The following are the results of the analysis without outliers.

The logistic regression model was statistically significant, $\chi^2(14) = 82.26$, $p < .0001$. The model explained 50.2% (Nagelkerke R2) of the variance in severe assault cases and correctly classified 94.9% of cases. This model correctly predicted 98.6% of the cases without severe physical assault and 26.1% of the case with severe physical assault. Four predictor variables had statistically significant ($p < .05$) relations with Time 1 severe abuse: parental stress as measured by the PSI ($p < .001$), maternal drug use during the past year ($p < .001$), speaking a language other than English ($p < .001$), and the child’s temperament as indicated by the Bates Temperament Scale ($p = .04$; see Table 3). The HOME score approached significance (.06) and thus was included in subsequent analyses in the event that other similar predictors in the original analyses were blunting its relations with severe abuse.

Table 3

Results of Binary Logistic Regression Analysis for Severe Physical Assault at Time 1

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp (B)</th>
<th>95% C.I. for EXP(B)</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational Age</td>
<td>-0.19</td>
<td>0.17</td>
<td>1.29</td>
<td>0.26</td>
<td>0.83</td>
<td>0.60</td>
<td>1.15</td>
<td></td>
</tr>
<tr>
<td>Low Birthweight</td>
<td>0.00</td>
<td>0.00</td>
<td>0.49</td>
<td>0.48</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Mother CPS involvement</td>
<td>-3.64</td>
<td>860.13</td>
<td>0.00</td>
<td>1.00</td>
<td>0.03</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother Unrealistic Expectations</td>
<td>-0.01</td>
<td>0.10</td>
<td>0.01</td>
<td>0.93</td>
<td>0.99</td>
<td>0.81</td>
<td>1.22</td>
<td></td>
</tr>
<tr>
<td>Language other than English</td>
<td>1.95</td>
<td>0.68</td>
<td>8.17</td>
<td>0.00</td>
<td>7.05</td>
<td>1.85</td>
<td>26.91</td>
<td></td>
</tr>
</tbody>
</table>


A second logistic regression was conducted with only significant predictors (language other than English, drug use during the past year, home environment, parent stress and child temperament). Results revealed that this model was also statistically significant, χ²(5) = 66.67, p < .0001. The model explained 41.4% (Nagelkerke R²) of the variance in severe assault cases and correctly classified 94.3% of cases. This model correctly predicted 98.6% of the cases without
severe physical assault, but only 13% of the case with severe physical assault. In this new model, all of the predictor variables remained statistically significant predictors with the exception of child’s temperament as indicated by the Bates Temperament Scale (as shown in Table 4).

**Table 4**

*Results of Binary Logistic Regression Analysis with significant predictors for Severe Physical Assault at Time 1*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% C.I.For EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language other than English</td>
<td>1.60</td>
<td>0.59</td>
<td>7.35</td>
<td>1.00</td>
<td>0.01</td>
<td>4.94</td>
<td>1.56 15.68</td>
</tr>
<tr>
<td>Mother drug use during past year</td>
<td>1.68</td>
<td>0.67</td>
<td>6.20</td>
<td>1.00</td>
<td>0.01</td>
<td>5.35</td>
<td>1.43 20.04</td>
</tr>
<tr>
<td>HOME Score</td>
<td>-0.08</td>
<td>0.04</td>
<td>4.14</td>
<td>1.00</td>
<td>0.04</td>
<td>0.93</td>
<td>0.86 1.00</td>
</tr>
<tr>
<td>PSI</td>
<td>0.07</td>
<td>0.01</td>
<td>23.72</td>
<td>1.00</td>
<td>0.00</td>
<td>1.07</td>
<td>1.04 1.10</td>
</tr>
<tr>
<td>Bates Temperament Scale</td>
<td>0.03</td>
<td>0.02</td>
<td>2.53</td>
<td>1.00</td>
<td>0.11</td>
<td>1.03</td>
<td>0.99 1.06</td>
</tr>
<tr>
<td>Constant</td>
<td>-9.61</td>
<td>2.38</td>
<td>16.36</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note. Bold indicates significant effects; PSI=Parent Stress Inventory; HOME= Home Observation for Measurement of the Environment; T1= Time 1; T2=Time 2; Df=1

Similarly, based on the same correlation analysis, a binomial logistic regression analysis was conducted to examine the predictive power of significant correlated variables from time 1 and time 2 on the endorsement of the use of severe physical assault at time 2. The variables included in the regression were having poor mental health indicated by scores on the

47
MHI-5, speaking a language other than English, alcohol use during the year prior to time 1, current alcohol use at time 1, anxious attachment style at time 1, insecure attachment style at time 1, HOME, CES-D, MHI-5 and PSI scores at time 1, NCATS caregiver score at time 2, NCATS child/caregiver score at time 2, and MHI-5, PSI and CES-D scores at time 2. Time 1 variables were entered in the first block and Time 2 variables were entered in the second block. The following results are without outliers (studentized residuals greater than +/- 2).

The logistic regression model was statistically significant, $\chi^2(17) = 91.6, p < .0001$. The model explained 33.7% (Nagelkerke $R^2$) of the variance in new severe assault cases with an overall correct classification of 86.4%; it correctly identified 97.4% of cases without severe physical assault and 19.4% of cases with it. Three predictors were statistically significant at the .05 level: mother alcohol use in the first year of life ($p<.001$), Bates Temperament at Time 1 ($p<.001$), and parental stress at Time 2 ($p<.001$; as shown in Table 5).

Table 5

*Results of Binary Logistic Regression Analysis for Severe Physical Assault at Time 2*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp (B)</th>
<th>95% C.L for EXP(B)</th>
</tr>
</thead>
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<tr>
<td>Poor Mental Health</td>
<td>0.36</td>
<td>0.36</td>
<td>1.01</td>
<td>0.32</td>
<td>1.43</td>
<td>0.71 - 2.87</td>
</tr>
<tr>
<td>Language other than English</td>
<td>0.63</td>
<td>0.38</td>
<td>2.69</td>
<td>0.10</td>
<td>1.87</td>
<td>0.89 - 3.95</td>
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<tr>
<td>Mother alcohol use year prior T1</td>
<td>1.46</td>
<td>0.39</td>
<td>13.83</td>
<td>0.00</td>
<td>4.30</td>
<td>1.99 - 9.26</td>
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<tr>
<td>Current Alcohol Use T1</td>
<td>0.34</td>
<td>0.45</td>
<td>0.57</td>
<td>0.45</td>
<td>1.40</td>
<td>0.58 - 3.38</td>
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<tr>
<td>Anxious Attachment Style T1</td>
<td>0.01</td>
<td>0.02</td>
<td>0.09</td>
<td>0.77</td>
<td>1.01</td>
<td>0.97 - 1.04</td>
</tr>
<tr>
<td>Variable</td>
<td>T1</td>
<td>T2</td>
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<td></td>
<td></td>
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</tr>
<tr>
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<td>----------</td>
<td>----------</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Insecure Attachment T1</td>
<td>0.03</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOME Score T1</td>
<td>-0.01</td>
<td>0.02</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CES-D T1</td>
<td>-0.03</td>
<td>0.02</td>
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</tr>
<tr>
<td>MHI-5 T1</td>
<td>0.01</td>
<td>0.01</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PSI T1</td>
<td>0.00</td>
<td>0.01</td>
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<td></td>
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<tr>
<td>Bates Temperament T1</td>
<td>0.04</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>NCATS Caregiver Total T1</td>
<td>-0.02</td>
<td>0.06</td>
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<tr>
<td>NCATS Child/Caregiver Total T1</td>
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<td>0.05</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>MHI-5 T2</td>
<td>-0.02</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSI T2</td>
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<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CES-D T2</td>
<td>0.02</td>
<td>0.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bates Temperament T2</td>
<td>0.01</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Constant</td>
<td>-7.01</td>
<td>2.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time 1 variables entered in Step 1; Time 2 variables entered in Step 2

Note. CES-D= Center for Epidemiological Studies Depression Scale; MHI-5=Mental Health Inventory 5; PSI=Parent Stress Inventory; NCATS=Nursing Child Assessment Satellite Training Scale; T1= Time 1; T2=Time 2; Df=1

As with the model for severe physical assault at time 1, a second logistic regression was conducted with only significant predictors from the first regression (language other than English,
mother alcohol use during the first year, parent stress, and child temperament). This model was also statistically significant, $\chi^2(5) = 81.42, p < .0001$. The model explained 30.3\% (Nagelkerke $R^2$) of the variance in severe assault cases and correctly classified 84.8\% of cases. This model correctly predicted 96.8\% of the cases without severe physical assault, and 11\% of the cases with severe physical assault. In this new model, all of the predictor variables remained statistically significant with the exception of the family speaking a language other than English (as shown in Table 6).

Table 6

Results of Binary Logistic Regression Analysis with significant predictors for Severe Physical Assault at Time 2

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% C.I.for EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Language other than English</td>
<td>0.63</td>
<td>0.36</td>
<td>3.11</td>
<td>0.08</td>
<td>1.87</td>
<td>0.93 - 3.76</td>
</tr>
<tr>
<td>Mother alcohol use year prior to T1</td>
<td>1.43</td>
<td>0.35</td>
<td>16.95</td>
<td>0.00</td>
<td>4.17</td>
<td>2.11 - 8.22</td>
</tr>
<tr>
<td>Bates Temperament T1</td>
<td>0.04</td>
<td>0.01</td>
<td>11.52</td>
<td>0.00</td>
<td>1.04</td>
<td>1.02 - 1.07</td>
</tr>
<tr>
<td>PSI T2</td>
<td>0.05</td>
<td>0.01</td>
<td>33.50</td>
<td>0.00</td>
<td>1.05</td>
<td>1.03 - 1.07</td>
</tr>
<tr>
<td>Constant</td>
<td>-9.53</td>
<td>1.17</td>
<td>66.29</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Note. PSI=Parent Stress Inventory; T1- Time 1; T2=Time 2; Df=1

New Cases of Abuse at Time 2. Lastly, the same variables were entered again into a binomial logistic regression to assess their prediction of new cases of severe physical assault against the child at time 2. There were 58 new cases of severe assault at time 2. Cases that endorsed physical assault at time 1 were removed from the analysis; remaining cases were
assigned a 1 if severe abuse was reported at Time 2 and a 0 if not. The binomial logistic regression model was statistically significant, $\chi^2(16) = 31.29, p = .012$. The model explained 13.1% (Nagelkerke $R^2$) of the variance in severe assault cases and correctly classified 88.1% of cases. Sensitivity (correct prediction when the event did occur) was 3.7% and specificity (correct prediction when the event did not occur) was 100%. None of the predictor variables in the model were statistically significant (as shown in Table 7).

Table 7

Results of Binary Logistic Regression Analysis for new Severe Physical Assault at Time 2

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% C.I.for EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Mental Health</td>
<td>.46</td>
<td>.34</td>
<td>1.89</td>
<td>.17</td>
<td>1.59</td>
<td>.82 3.06</td>
</tr>
<tr>
<td>Language other than English</td>
<td>.49</td>
<td>.37</td>
<td>1.75</td>
<td>.19</td>
<td>1.62</td>
<td>.79 3.33</td>
</tr>
<tr>
<td>Mother alcohol use year prior to T1</td>
<td>.58</td>
<td>.35</td>
<td>2.73</td>
<td>.10</td>
<td>1.78</td>
<td>.90 3.52</td>
</tr>
<tr>
<td>Current Alcohol Use T1</td>
<td>.09</td>
<td>.49</td>
<td>.03</td>
<td>.86</td>
<td>1.09</td>
<td>.42 2.88</td>
</tr>
<tr>
<td>Anxious Attachment Style T1</td>
<td>-.00</td>
<td>.02</td>
<td>.01</td>
<td>.91</td>
<td>.10</td>
<td>.96 1.03</td>
</tr>
<tr>
<td>Insecure Attachment T1</td>
<td>.10</td>
<td>.15</td>
<td>.41</td>
<td>.52</td>
<td>1.10</td>
<td>.82 1.48</td>
</tr>
<tr>
<td>CES-D T1</td>
<td>-.02</td>
<td>.02</td>
<td>.68</td>
<td>.41</td>
<td>.98</td>
<td>.94 1.03</td>
</tr>
<tr>
<td>MHI-5 T1</td>
<td>-.01</td>
<td>.01</td>
<td>.38</td>
<td>.54</td>
<td>.99</td>
<td>.97 1.02</td>
</tr>
<tr>
<td>PSI T1</td>
<td>.01</td>
<td>.01</td>
<td>1.43</td>
<td>.23</td>
<td>1.01</td>
<td>.99 1.04</td>
</tr>
<tr>
<td>Bates Temperament</td>
<td>.01</td>
<td>.01</td>
<td>.61</td>
<td>.43</td>
<td>1.01</td>
<td>.98 1.04</td>
</tr>
<tr>
<td>NCATS Caregiver Total T2</td>
<td>-.06</td>
<td>.05</td>
<td>1.16</td>
<td>.28</td>
<td>.95</td>
<td>.85 1.05</td>
</tr>
<tr>
<td>NCATS Child/Caregiver Total T2</td>
<td>.02</td>
<td>.05</td>
<td>.19</td>
<td>.67</td>
<td>1.02</td>
<td>.93 1.11</td>
</tr>
<tr>
<td>MHI-5 T2</td>
<td>-.01</td>
<td>.01</td>
<td>.31</td>
<td>.58</td>
<td>.99</td>
<td>.97 1.02</td>
</tr>
<tr>
<td>PSI T2</td>
<td>.02</td>
<td>.01</td>
<td>2.43</td>
<td>.12</td>
<td>1.02</td>
<td>1.00 1.03</td>
</tr>
<tr>
<td>CES-D T2</td>
<td>-.00</td>
<td>.02</td>
<td>.02</td>
<td>.90</td>
<td>.10</td>
<td>.95 1.04</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.95</td>
<td>2.51</td>
<td>1.38</td>
<td>.24</td>
<td>.05</td>
<td></td>
</tr>
</tbody>
</table>
Study 2. The purpose of Study 2 was to investigate the feasibility, social validity, and effectiveness of the IY Babies curriculum to prevent physical maltreatment in infants. To examine the feasibility of using IY Babies with at risk families the success of recruitment, social validity, and participation rates were examined as meaningful indicators of feasibility.

Recruitment efforts began with an emphasis on finding parents at-risk for future child maltreatment. Based on the work of the developer of IY Babies, the researcher attempted to recruit from families involved with Boone County Children’s Division (CD). It initially appeared that this would be a successful avenue of recruitment. However, a requested letter of support for the IRB application was not provided by the agency after the CD contact for the project shared that her supervisor was uncomfortable providing this letter. Efforts were made to clear up any confusion about the purpose of the letter, but it was unsuccessful.

Next, efforts turned to identifying vulnerable parents in another fashion, and the project began to focus exclusively on adolescent parents. A principal at a local alternative high school with approximately 35 student mothers agreed to the intervention being delivered on campus to her students. However, when it was time to identify and consent parents, it was discovered that only 5 of the mothers had children that were younger than 12 months. Two of these children would be turning a year within the month, one mother had not been attending school recently and one mother did not consent. The final mother indicated that she would participate in the project, but did not respond to attempted contact.
The researcher then contacted a local agency that offered support services to those struggling with unplanned pregnancy. A representative from this organization allowed the researcher to present to their monthly support group, and shared information about the project with a network of similar organizations. From this presentation, five families (discussed below) initially indicated interest in the intervention, and a group was run with the families from this organization.

A partnership was also attempted with the local Head Start program. Staff at the regional administrative Head Start office was extremely receptive to this intervention being delivered to parents with children in the Early Head Start program as it would count as an in-kind donation to the organization. Flyers were delivered to the Early Head Start Centers and the researcher presented on the intervention at regional staff training. From these efforts, one parent indicated that she would be willing to participate in the group. The researcher was able to contact her once to discuss the group, but subsequent attempts to contact the parent were unsuccessful. Head Start staff later shared that the parent’s work schedule and family issues would make it difficult for her to attend the group.

In addition there were a variety of other community recruitment efforts. With IRB approval, recruitment flyers were posted online, mailed to local daycares, posted at the local Women Infants and Children (WIC) office, posted at a local psychological clinic, sent via electronic mail to student parents at the University of Missouri, and shared by a local pediatrician with her patients. Throughout the 18 months of recruitment efforts, this led to a total of four parents contacting the researcher. Unfortunately, the timing of each parent contacting the researcher combined with the age of their child meant that there were never enough willing and eligible participants available at the same time to run another group intervention. Efforts were
also made to connect with Parents as Teachers, an organization that works with children at risk for developmental delays to recruit from families receiving this service. However, efforts to contact the organization were unsuccessful.

**Attendance and Social Validity.** Incredible Years Parents and Babies curriculum sessions were offered over the course of 8 weeks from April –May 2013. Post intervention data was collected at the end of the last session and there were two additional meetings (one before the parenting group began and one follow up) for data collection. See table 8 for further details about each family’s attendance to IY sessions and participation in data collection points.

**Table 8**

*Family Members Attendance to IY sessions and Data Collection*

<table>
<thead>
<tr>
<th>Family</th>
<th>Session Attendance</th>
<th>Data Collection Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100%</td>
<td>Pre and post (all family members); Follow up (mother and grandmother only)</td>
</tr>
<tr>
<td>B</td>
<td>50%</td>
<td>Pre only</td>
</tr>
<tr>
<td>C</td>
<td>25%</td>
<td>Pre (mother only); Post (both present, data only gathered from mother.)</td>
</tr>
<tr>
<td>D</td>
<td>0%</td>
<td>None</td>
</tr>
<tr>
<td>E</td>
<td>0%</td>
<td>None</td>
</tr>
</tbody>
</table>

**Weekly Evaluations of Sessions.** At the end of each session, participants answered questions about the quality of the content, videotaped examples, group leader’s teaching and group discussion for that week (See appendix). Participants rated each of these components as “not helpful,” “neutral,” “helpful,” and “very helpful.” These responses were then coded as 1, 2, 3 and 4 respectively so that averages could be reported.
Results reveal that participants consistently reported enjoying and benefiting from the group. Specifically, 100% of responses indicated that the content of each session and the group leaders’ teaching was helpful or very helpful (averages=3.81 and 3.78 respectively) and 96.9% of responses indicated that the videotaped examples and group discussion were helpful or very helpful (averages=3.88 and 3.81 respectively).

**Social Validity Measure.** At the end of the program, a measure of social validity was given to the remaining participants (family A; n=3). It was also given to Family C after the last session they attended before they moved out of state. Parents were asked to rate on a scale of 1 (least positive response) to 4 (most positive response) how important, effective, intrusive, and helpful they found the project. They were also asked how reasonable they found the amount of time and effort required of them, how confident they were they could confidently implement the intervention and their overall reaction to the project, what they liked best and what tips they had for working with families in the future. Results indicated that participants generally had a positive reaction to the program. Two of the respondents selected all of the most favorable responses (very important, not intrusive, very helpful, etc.). A third respondent had a similar pattern with the exception of reporting that the program was very intrusive, and the last participant also gave 3’s for how important, intrusive, and helpful she found the program, but also gave 4’s for all other questions.

None of the respondents provided any tips for modifying the intervention for future families. For what they liked best about the project, two responded interacting with their child with one also adding learning how to take care of her baby better. One responded “everything” and one shared that the videos were helpful because they showed multiple families, and each family “had a different way of coping with the same topic.”
Parenting Stress and Knowledge. The results of the Parental Stress Scale were inconclusive because of the small amount of data and the concern that some of the respondents did not appropriately attend to the questions as evidenced by answering all items in the extreme (e.g. selecting only “strongly agree” or “strongly disagree”) despite the fact that some of the items are written to be reverse coded, or by continuing to answer all items in the extreme after accounting for this reverse wording (e.g. selecting “strongly agree” for all the positively worded items and “strongly disagree” for all the negatively worded items). Possible scores can range from 18 – 90 and the higher the score, the higher the measured level of parental stress.

Table 9
Parental Stress Scale (PSS) Scores

<table>
<thead>
<tr>
<th>Participant</th>
<th>PSS Time 1</th>
<th>PSS Time 2</th>
<th>PSS Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>58*</td>
<td>18*</td>
<td>--</td>
</tr>
<tr>
<td>3</td>
<td>58*</td>
<td>30*</td>
<td>58*</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
<td>25**</td>
<td>--</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*Evidence respondent did not attend to items
**Family moved, data point collected before intervention was completed

There were no meaningful improvements noted in parenting knowledge which was assessed using the parenting questionnaire generated by the researchers to assess parents’ ability to attend to the content of the curriculum. The questionnaire is not normed, so no larger comparisons can be made. Furthermore there was little change in the respondents’ answers; A visual analysis of responses reveal that the majority of the group members remained consistent in their answers (some correct and some incorrect). The only exception was one parent did appear to have a better understanding of at what age it became possible to “spoil” a baby.
Unfortunately, there were similar issues with the Child Abuse Potential Inventory. The majority of the protocols from all time points were invalid due to “fake good” or inconsistency profiles. The only exception, one protocol that was valid was from a participant that did not finish the intervention.
Chapter 5: Discussion

The purposes of this study were to identify predictors of child maltreatment and to evaluate the promise of a program to reduce child maltreatment. In Study 1, although most research based risk factors were correlated with child maltreatment, the strength of these relations were all characterized as small. Specifically, the first study found that severe physical assault of children within the first two years of life was correlated with the family speaking a language other than English, the child’s gestational age, birthweight and temperament, mother’s use of substances and alcohol, stress and mental health concerns, unrealistic expectations of the child, less enriching home, difficulties teaching children new tasks, and an anxious attachment pattern between mother and child. Although these variables were all significant correlates of abuse only parent stress had a correlation that exceeded .20 and no correlations were higher than .30.

Previous correlation results for this dataset could not be located in available published manuscripts. However, other studies have found stronger correlations between measures of similar constructs and physical abuse. For example, parental stress, parental age, and family dysfunction have often been found to be strongly correlated with physical child abuse (as cited in Tucker & Rodriguez, 2014). Similarly, studies examining the use of physical discipline with infants and toddlers have found that it is associated with child sex, SES, maternal age and lack of experience, maternal depression and anxiety, having other children in the home, conflict in parental relationship, and single motherhood, but the strength of these correlations was not discussed. Studies have also found mixed evidence for the impact of ethnicity and child temperament (MacKenzie, Nicklas, Brooks-Gunn, Waldfogel, 2011).
When entered into multiple regression analyses, very few of the hypothesized predictors had significant unique relations with severe abuse at either time point. Only speaking a language other than English, maternal drug use, home environment and maternal parental stress predicted severe assault cases during the first year of life in these models. Language, maternal alcohol use during the first year of life, child temperament and current maternal parenting stress predicted severe abuse that occurred during the child’s second year of life. Unfortunately, no variables predicted the occurrence of new cases of severe physical assault at time 2.

It is also important to note that the use of severe physical assault at time 1 was strongly correlated with the use of severe physical assault at time 2. The use of severe physical assault at time 1 was added to the model to predict time 2 for a cursory examination of the relationship between the variables at these two time points. However, it made the model less effective and is therefore not included in the model reported in this study. Intuitively, the strong correlation between the variable at these two time points makes sense. However, it was not a perfect correlation. It would be interesting to example the factors that contributed to some families endorsing severe physical assault at time 1, but not at time 2.

As previously mentioned, less than 1% of the sample in study 1 had substantiated CPS reports, which is considered low for this high risk sample (Windham, et. al, 2004). While there were a higher number of parental behaviors that could be classified as physically abusive on the CTSPC and our use of the CTSPC is consistent with how abuse was defined in the original study, it is likely that this is an underestimate of abusive acts due to the nature of self-report measures on sensitive issues and potentially reading level and attending issues. It is also unclear if participants were informed that reported abusive acts may be reported. Regardless of the reason, the low incidence made it very difficult to predict this infrequent outcome as prediction is
always more accurate with more common behaviors.

Despite this issue, some noteworthy findings from Study 1 include the relation of parental substance use to child maltreatment. Results from the current study indicate that maternal drug use during the previous year significantly predicted severe assault during the child’s first year of life and maternal alcohol use during the child’s first year of life significantly predicted severe physical assault at time 2. This is consistent with prior studies that show that substance use is consistently identified as a risk factor for physical child abuse (Slack, et al, 2011).

Notably, neither parenting program discussed in the present study (HSP and IY Babies) directly addresses parent substance abuse. The Healthy Start program has identified 14 areas that high risk families often need support with including substance abuse treatment programs. Other needs include child care, respite, adult education, counseling, housing, support groups, legal assistance, transportation and financial assistance (Duggan, et al., 1999). While parenting groups like IY may meet some of these needs (e.g. child care, respite, and support group) during the time parents are attending group sessions, addressing additional areas of needed support continue to be an area that is lacking in child maltreatment prevention.

Parent stress emerged as a significant predictor of abuse in nearly all analyses. This is consistent with prior research that has found significant connections between parental stress and physical abuse and neglect of young children (Slack, Berger, DuMont, Yang, Kim, Ehrhard-Dietzel, Holl, 2011; Whipple & Webster-Stratton, 1991). Surprisingly, the measures of maternal mental health (MHI-5; CES-D) were correlated with abuse but did not predict cases of severe physical assault when entered into regression equations with other predictors. This contradicts the findings of multiple other studies that have found links between maternal stress and depression symptoms and inappropriate physical discipline (Belsky, 1993; Slack, Berger,
DuMont, Yang, Kim, Ehrhard-Dietzel, Holl, 2011; Whipple & Webster-Stratton, 1991). Given that stress and mental health symptoms are highly correlated, the present findings suggest that parent stress may be driving the observed correlations between parent mental health and abuse and so should be the focus of abuse prevention efforts rather than more targeted aspects of parent mental health.

Speaking a language other than English was correlated with severe physical assault at both time 1 and time 2, and uniquely predicted abuse at time 1 even after accounting for other variables such as parenting stress. No previous research was found on the connection between language and child maltreatment so this finding needs replication. It clearly highlights the need for further research and theory regarding the link between various cultural factors and child maltreatment (Korbin, 2002). It should be noted that HSP occurred in a unique cultural setting (Hawaii) with a wide range of languages represented among participants in this predominantly Asian American sample. Moreover, it has also been documented that Hawaiian Americans may be overrepresented in the Hawaiian child protective agency cases (Dubanoski, 1981). It is not known if these aspects of the study contributed to this finding.

Similarly, poor quality home environment (as measured by the HOME) was correlated with severe physical assault at time 1, and accounted for unique variance in predicting severe physical assault. Other studies using the same measure and a similar intervention found connections between poor home quality and child maltreatment and found that the intervention was able to improve home quality (Duggan et al., 2007). These findings suggest that the social, emotional, and early academic aspects of the home environment are important risk factors for severe abuse during infancy and are appropriate targets for preventive interventions.
Study 2 provided insight about the difficulty of recruiting high risk parents to attend a parenting group from their infants without having child welfare services involvement. The reasons for recruitment challenges in this study were varied, and I can only speculate about what the critical barriers were. It is possible that children in these families have not yet developed some of the behavioral challenges that may motivate the parent of an older child to devote time to learning new skills. Probably most important, as a doctoral candidate, I was an outsider to most of these agencies, and thus relied on agency staff to assist with recruitment. It’s likely that recruiting vulnerable populations into sensitive groups like IY Babies requires longer term relationships and more resources to support interest in and participation in such programs.

As previously mentioned, the small number of research participants limited the number and type of conclusions that could be drawn. However, another issue emerged as well: much of the data that was collected could not be interpreted because it was invalid. This could be a product of reading difficulties with some of the participants which may be an explanation for the inconsistency profiles on the CAP or the lack of attending to reverse coded items on the PSS. However, it could also represent a desire to present in an overly positive light as evidenced by the “fake good” profile on the CAP and selecting only the positive extreme answers on the PSS. With the limited number of participants it is impossible to speculate if these issues would occur with a larger number of similar participants or if it was specific to these individuals, but future research should monitor and attempt to minimize positive impression management. Additionally, participants should be screened for reading skills and accommodations should be provided as needed.

The results of these studies confirm that abuse during infancy is difficult to predict. Even with a comprehensive assessment of known risk factors like the one used in this study it
accounted for a meager amount of variance in predicting present and future abuse. We may need to expand our models to account for different measurement strategies to provide valuable information towards generating a more comprehensive theory of the causal mechanisms for infant physical child abuse. There are multiple pathways to maltreatment and complex interactions between environmental and individual factors (parent[s] and child) that contribute to abuse (Belsky, 1993). Assessment of abuse risk may need to capture this interplay of factors rather than the static, single time point assessments that occurred in this study. Still, the results of Study 1 provide support that a preventative intervention for child maltreatment and a treatment option for maladaptive parenting and family dynamics by revealing malleable risk factors that help to predict incidents of severe physical assault against young children. Other studies using this data have found that the HSP intervention was able to indirectly impact maternal alcohol use and mental health by linking families to relevant resources (Duggan, et al., 2004) which were correlated with incidence of physical assault. Furthermore, while it has been noted that the impact of the program was modest during the first year, it became more pronounced after the second year (Duggan, et.al., 1999).

The results of study 2 reveal difficulties in connecting with at-risk families and garnering support and interest in parenting programs, and of gathering useful data from participants that may be overly motivated to present in a positive manner. For this reason, it is important to disseminate findings to clinicians and child protection agency employees through trusted informational sources to both help provide more of these programs and to help motivate relevant clientele to participate in them. Parents that participated in IY Babies during study 2 reported enjoying the curriculum and group sessions. As such it is possible that with improved recruitment strategies and relationship building with the relevant populations there will be more
success in delivering this program to community members as has been reported with parents who received the program in court mandated settings.

There is extensive research on motivating parents to engage and persist in parenting intervention that details the extra effort needed to get parents to participate in mental health or prevention services for their children including using motivational interviewing strategies alone or incorporated in evidence based interventions like the Family Check Up Model (Herman, et al, 2014). There is also a line of research that illustrates improved parental participation in the context of positive relationships with staff (Kohl, Lengua, & McMahon, 2000; Waanders, Mendez & Downer, 2007). Future research should incorporate these engagement strategies and should also include a follow up with this population that tracks maltreatment reports to continue to evaluate the long term effectiveness of this intervention at reducing the risk of maltreatment.

Limitations

Several limitations to these studies should be noted. Study 1 involved a sample of participants in an innovative home visitation program. However, as the original sample was drawn from Hawaii and included participants from specific racial, ethnic, and cultural backgrounds with identified risk profiles, the findings may not generalize to other populations in other settings.

As described throughout this manuscript, the very definition of child abuse presents a challenge for investigations of the topic. We chose to use the dichotomous occurrence of abuse rather than treat it as a continuous variable to be consistent with the original study. This limited variability of the construct and may have resulted in lower correlations with predictors. However, unreported analyses using abuse as a continuous variable did not result in vastly improved predictor or stronger relations among predictors and the continuous measure of abuse.
The present study relied on a self-report strategy, as was used in the original study which generated this dataset. However, self-report comes with a range of limitations. First and foremost it can only account for information that respondents are willing to share. With such a sensitive subject matter, it is logical to assume that some parents would be reluctant to reveal actual or potentially abusive behaviors. Other studies have found patterns in what information respondents leave blank on questionnaires. A study on a similar intervention found that parents with CPS involvement were more likely to leave questions about physical assault blank (DuMont, et al., 2008). Additionally, with self-report there is the possibility that participants do not fully attend to questions or have limited reading comprehension which interferes with accurate measures as was suspected in study 2. Moreover, self-reported data present a source bias problem that results in overestimates of relations among variables. That is, self-reported variables are often highly related because the same informant brings the same perception and bias to each study variable. In this study, however, the relations among self-report abuse and its correlates were all in the small range suggesting source bias had a minimal effect on the findings.

Although some of the research generated from this dataset report the additional use of CPS reports (e.g. Duggan et al., 1999 and Duggan et al., 2004), such data has its own limitations. For instance, it is widely recognized that CPS reports vastly underestimate the incidence of abuse. There is also reporter biases that may be a factor in which reports get made and vulnerable families may interact with more service providers that are required to report suspicions. Language difficulties may also make it difficult for families to fully understand and engage in public health care and education systems and thus they may also be more susceptible to negative interactions with systems. Prior studies also do not comment on comparisons between the self-reported rates of abusive behaviors and substantiated CPS reports. Additionally, it is common in
research to define maltreatment in terms of discrete and measurable behaviors. However this may represent an oversimplification of parental behaviors that harm children physically and psychologically.

As with all large research efforts, there were also concerns about attrition of the original sample. It is noted that it is difficult to keep families engaged in home visiting programs (Duggan et al., 1999). Although this was a high quality study that employed best practices in participant retention, many participants did not persist. There was also greater numbers of missing data for fathers which is common in this type of research. Even still the predictive power of variables at time 1 and 2 was comparable suggesting that attrition was not a major reason for the limited strength of prediction. Duggan and colleagues (1999) note that of the agencies involved in the original study, there was substantial differences in the rates of father involvement in the intervention. This raises questions about the impact of fathers’ characteristics on the mothers’ use of severe physical assault and factors that contribute to fathers’ involvement in physical maltreatment. The majority of the data available on father attributes was not incorporated into this study which represents another limitation and direction for future research.

In Study 2, the primary limitation of participant recruitment was already noted as well as concerns about data collection problems. Additionally, the struggles with recruitment meant that for several of the sessions there were only members of one family present. The Incredible Years curriculum is meant to encourage community amongst parents and facilitate the sharing of parenting wisdom which is not achieved to the same degree when all of the participants already share a home.

Conclusions
Child maltreatment is a complicated topic impacted by a variety of complex, difficult to define and difficult to measure constructs. The Hawaii Healthy Start project collected comprehensive data on factors that have previously been linked to child maltreatment. However, the array of previously identified predictors of abuse gathered in this study provided only modest predictive value in identifying present and future occurrence of severe abuse. Parent stress, substance abuse, speaking a language other than English, home environment and child temperament emerged as the only consistent predictors of abuse so these variables warrant continued attention in the literature. Curricula like the IY Babies program are designed to lessen parent stress in part by building social support for parents in the group delivered format; however, as noted in study 2, the group format creates some barrier to program participation because of the challenges of recruiting enough parents simultaneously to participate in groups. There were also noted challenges recruiting parents of infants to commit to attending weekly parenting sessions, especially without an existing relationship with the families or the organizations that serve these families, and collecting useable data on sensitive topics. Perhaps the most important lesson of this project though is the need for more systematic definition and measurement of child maltreatment and its correlates.
References


Casey Family Programs (2010). Evaluation shows parent training program holds promise for a child welfare population. Retrieved from:


McGee & Wolfe, 1991


Appendix A. Consent and Assent Forms

CONSENT FORM TO PARTICIPATE IN IY PARENTS AND BABIES PROGRAM

Researcher’s Name: Jennifer Sykes, Keith Herman
Project Title: Evaluating the Incredible Years Parents and Babies Program for Promoting Effective Parenting
Project Number: 1204108

INTRODUCTION

You are being asked to participate in the Incredible Years (IY) Parenting Program. Participation in the program is voluntary. You can withdraw from the program at any time and may withdraw your data at the end of your participation. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may also discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

This research is funded by the University of Missouri. The principal investigator is Jennifer Sykes, graduate student at the Department of Educational, School, and Counseling Psychology at the University of Missouri. The project is being supervised by Keith Herman, faculty at the University of Missouri.

WHY IS THIS STUDY BEING DONE?

The purpose of the program is to support parents in building parenting skills and promoting babies’ early development. This study is being done to see whether or not the parenting program is effective.

WHAT AM I BEING ASKED TO DO?

You will be asked to attend and participate in 8-12 weekly, 2-hour group sessions of the IY Parenting Program with the infant for whom you provide care. You will also be asked to complete a set of surveys to see how helpful the program is. You will be asked to fill the surveys out twice during the program, and again at a one month follow-up, and a 3 month follow up. The surveys will take about one hour to complete. You will also be asked to share your perceptive about the group in a brief interview that will take about 15-30 minutes. If applicable, we will also ask that you complete a release of information document so that we may communicate with your referral source. You may choose to participate in this research project even if you do not give us permission to contact your referral source.

WHAT ARE THE BENEFITS OF BEING IN THE STUDY?

You may benefit from participating by learning more about how to support your babies' development.

WHAT ARE THE RISKS OF BEING IN THE STUDY?
The researchers are mandated reporters and any previously unreported, disclosed incidents of child abuse or neglect or elder abuse must be reported to Children's Division. Also, confidentiality cannot be assured in group settings. However, all participants will be asked to verbally agree not to discuss group members’ information outside of the group.

**WHAT ARE THE COSTS OF BEING IN THE STUDY?**

There is no cost to you for participating in this program. You may have transportation costs for getting to and from the sessions.

**CONFIDENTIALITY**

Data and information produced by this study will be stored in a secure, locked location to which only the researchers have access. The data will be identified by a code number only. The key connecting your name to the code number will be kept in a separate, secure location. The data will be compiled across participants, analyzed, and submitted in a report. No participant data will be identified by name at any stage of the data analysis or in the final report. Information contained in your records may not be given to anyone unaffiliated with the study in a form that could identify you without your written consent, except as required by law. Confidentiality cannot also be assured in group settings; group members may share personal information outside of the group setting.

**WILL I BE COMPENSATED FOR PARTICIPATING IN THE STUDY?**

You will be paid $25 for each set of surveys, up to $100. Payment will be in the form of gift cards. If you decide to withdraw part way through the program, you will still be paid for any surveys you have already completed. Snacks and child care for participants other children will also be provided during each session.

**WHAT ARE MY RIGHTS AS A PARTICIPANT?**

Participation in this study is voluntary. You do not have to participate in this study. You will also be informed of any new information discovered during the course of this study that might influence your health, welfare, or willingness to be in this study.

**WHO DO I CONTACT IF I HAVE QUESTIONS, CONCERNS, OR COMPLAINTS?**

Please contact Keith Herman at 573-884-2419 if you have questions about the research. Additionally, you may ask questions, voice concerns or complaints to the research team.

**WHO DO I CALL IF I HAVE QUESTIONS OR PROBLEMS?**

If you have any questions regarding your rights as a participant or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact the University of Missouri Campus Institutional Review Board (which is a group of people who
review the research studies to protect participants’ rights) at (573) 882-9585 or umcresearchcirb@missouri.edu. A copy of this Informed Consent form will be given to you before you participate in the research.

SIGNATURES

I have read this consent form and my questions have been answered. My signature below means that I do want to be in the study. I know that I can remove myself from the study at any time without any problems.

-----------------------------------------------------------------------------------
Participant |
Date

-----------------------------------------------------------------------------------
Legal Guardian/Advocate/Witness (if required)* | Date

*The presence and signature of an impartial witness is required during the entire informed consent discussion if the subject or subject’s legally authorized representative is unable to read.

PARENTAL CONSENT FORM TO PARTICIPATE IN IY PARENTS AND BABIES PROGRAM

Researcher’s Name: Jennifer Sykes, Keith Herman
Project Title: Evaluating the Incredible Years Parents and Babies Program for Promoting Effective Parenting
Project Number: 1204108

INTRODUCTION

Your child is being asked to participate in the Incredible Years (IY) Parenting Program. Participation in the program is voluntary. Your child can withdraw from the program at any time and you or your child may withdraw your child’s data at the end of her participation. Refusal to participate will involve no penalty or loss of benefits to which your child is otherwise entitled. You or your child may also discontinue participation at any time without penalty or loss of benefits to which your child is otherwise entitled.

This research is funded by the University of Missouri. The principal investigator is Jennifer Sykes, graduate student at the Department of Educational, School, and Counseling Psychology at the University of Missouri. The project is being supervised by Keith Herman, faculty at the University of Missouri.

WHY IS THIS STUDY BEING DONE?

The purpose of the program is to support parents in building parenting skills and promoting babies’ early development. This study is being done to see whether or not the parenting program is effective.
WHAT AM I BEING ASKED TO DO?

Your child will be asked to attend and participate in 8-12 weekly, 2-hour group sessions of the IY Parenting Program with their infant. Your child will also be asked to complete a set of surveys to see how helpful the program is. Your child will be asked to fill the surveys out twice during the program, and again at a one month follow-up, and a 3 month follow up. The surveys will take about one hour to complete. Your child will also be asked to share his/her perceptive about the group in a brief interview that will take about 15-30 minutes. If applicable, we will also ask that you and your child complete a release of information document so that we may communicate with the referral source if needed. You may choose to allow your child to participate in this research project even if you do not give us permission to contact your referral source.

WHAT ARE THE BENEFITS OF BEING IN THE STUDY?

Your child may benefit from participating by learning more about how to support her babies' development.

WHAT ARE THE RISKS OF BEING IN THE STUDY?

The researchers are mandated reporters and any previously unreported, disclosed incidents of child abuse or neglect or elder abuse must be reported to Children's Division. Also, confidentiality cannot be assured in group settings. However, all participants will be asked to verbally agree not to discuss group members' information outside of the group.

WHAT ARE THE COSTS OF BEING IN THE STUDY?

There is no cost to you for participating in this program. You or your child may have transportation costs for getting to and from the sessions.

CONFIDENTIALITY

Data and information produced by this study will be stored in a secure, locked location to which only the researchers have access. The data will be identified by a code number only. The key connecting your name to the code number will be kept in a separate, secure location. The data will be compiled across participants, analyzed, and submitted in a report. **No participant data will be identified by name at any stage of the data analysis or in the final report.** Information contained in your child’s records may not be given to anyone unaffiliated with the study in a form that could identify your child without your written consent, except as required by law. Confidentiality cannot be assured in group settings; group members may share personal information outside of the group setting.

WILL I BE COMPENSATED FOR PARTICIPATING IN THE STUDY?

Your child will be paid $25 for each set of surveys, up to a total of $100. Payment will be in the form of gift cards. If you decide to withdraw your child part way through the program, your child
will still be paid for any surveys that have already been completed. Snacks and child care for participants other children will also be provided during each session.

**WHAT ARE MY RIGHTS AS A PARTICIPANT?**

Participation in this study is voluntary. Your child does not have to participate in this study. You and your child will also be informed of any new information discovered during the course of this study that might influence your health, welfare, or willingness to be in this study.

**WHO DO I CONTACT IF I HAVE QUESTIONS, CONCERNS, OR COMPLAINTS?**

Please contact Keith Herman at 573-884-2419 if you have questions about the research. Additionally, you may ask questions, voice concerns or complaints to the research team.

**WHO DO I CALL IF I HAVE QUESTIONS OR PROBLEMS?**

If you have any questions regarding your child’s rights as a participant or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact the University of Missouri Campus Institutional Review Board (which is a group of people who review the research studies to protect participants’ rights) at (573) 882-9585 or umcresearchcirb@missouri.edu. A copy of this Informed Consent form will be given to you before you participate in the research.

**SIGNATURES**

I have read this consent form and my questions have been answered. My signature below means that I do want my child to be in the study. I know that I can remove my child from the study at any time without any problems.

________________________________________________________________________

Participant’s Name

________________________________________________________________________

Legal Guardian/Advocate/Witness (if required)*   Date

*The presence and signature of an impartial witness is required during the entire informed consent discussion if the subject or subject’s legally authorized representative is unable to read.

**ASSENT FORM TO PARTICIPATE IN IY PARENTS AND BABIES PROGRAM**

**Researcher’s Name:** Jennifer Sykes, Keith Herman  
**Project Title:** Evaluating the Incredible Years Parents and Babies Program for Promoting Effective Parenting  
**Project Number:** 1204108
STUDY TITLE: EVALUATING THE INCREDIBLE YEARS PARENTS AND BABIES PROGRAM FOR PROMOTING EFFECTIVE PARENTING

This is a study about mothers and their relationship with their infants.

Why YOU are invited:
You are being invited to participate because you have an infant under the age of 1 and because you are part of a local agency or school interested in supporting the parenting skills of its clients or students.

What will happen?
You will be asked to attend and participate in 8-12 weekly, 2-hour group sessions of the IY Parenting Program with your infant. You will also be asked to complete a set of surveys to see how helpful the program is. You will be asked to fill the surveys out twice during the program, and again at a one month follow-up. The surveys will take about one hour to complete. You will also be asked to share your perception about the group in a brief interview that will take about 15-30 minutes.

Can anything bad happen to me?
The researchers are mandated reporters and any previously unreported, disclosed incidents of child abuse or neglect or elder abuse must be reported to Children's Division. Also, confidentiality cannot be assured in group settings. However, all participants will be asked to verbally agree not to discuss group members' information outside of the group.

Can anything good happen to me?
You may learn more about how to support your babies' development. You will receive a $25 gift card for each set of surveys, for a possible total of $100 in gift cards. If you decide to stop coming part way through the program, you will still be paid for any surveys you have already completed. Snacks and child care for any other children you may have will also be provided during each session.

What if I don’t want to do this?
If you say you do not want to be in the study, you just have to tell us. No one will be mad at you. You can also say yes, and later if you change your mind, you can quit the study. The choice is up to you and your parent(s).

Who will see my information?
It will be stored in a secure, locked location to which only the researchers have access and will only have a code number on it. The key connecting your name to the code number will be kept in a separate, secure location. Information contained in your records may not be given to people outside of the study in any form that could identify you without written consent from your parent, except as required by law. Confidentiality cannot also be assured in group settings; group members may share personal information outside of the group setting.

Who can I talk to about the study?
You can ask questions any time. You can ask now. You can ask later. You can talk to me your parents, or you can call Dr. Keith Herman at 573-884-2419 if you have questions about the research.

Do you have any questions about the study?

Do you want to be in the study?

☐ YES  ☐ NO

________________________________________  ____________________________
Signature of Child                      Date
Appendix B. Measures

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Maria A. Gartstein
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Infant Behavior Questionnaire – Revised
Very Short Form

Subject No. _______________ Date of Baby’s Birth _______ _____ _____
Today’s Date _______________ Age of Child _______ _____
Sex of Child _______________

INSTRUCTIONS:
Please read carefully before starting:

As you read each description of the baby’s behavior below, please indicate how often the baby did this during the LAST WEEK (the past seven days) by circling one of the numbers in the left column. These numbers indicate how often you observed the behavior described during the last week.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Never</td>
<td>Very Rarely</td>
<td>Less Than Half the Time</td>
<td>About Half the Time</td>
<td>More Than Half the Time</td>
<td>Almost Always</td>
<td>Always</td>
<td>Does Not Apply</td>
</tr>
</tbody>
</table>

The “Does Not Apply” (X) column is used when you did not see the baby in the situation described during the last week. For example, if the situation mentions the baby having to wait for food or liquids and there was no time during the last week when the baby had to wait, circle the (X) column. “Does Not Apply” is different from “Never” (1). “Never” is used when you saw the baby in the situation but the baby never engaged in the behavior listed during the last week. For example, if the baby did have to wait for food or liquids at least once but never cried loudly while waiting, circle the (1) column.

Please be sure to circle a number for every item.

1. When being dressed or undressed during the last week, how often did the baby squirm and/or try to roll away?

   1 2 3 4 5 6 7 NA

2. When tossed around playfully how often did the baby laugh?
1 2 3 4 5 6 7 NA

3. When tired, how often did your baby show distress?
1 2 3 4 5 6 7 NA

4. When introduced to an unfamiliar adult, how often did the baby cling to a parent?
1 2 3 4 5 6 7 NA

5. How often during the last week did the baby enjoy being read to?
1 2 3 4 5 6 7 NA

6. How often during the last week did the baby play with one toy or object for 5-10 minutes?
1 2 3 4 5 6 7 NA

7. How often during the week did your baby move quickly toward new objects?
1 2 3 4 5 6 7 NA

8. When put into the bath water, how often did the baby laugh?
1 2 3 4 5 6 7 NA

9. When it was time for bed or a nap and your baby did not want to go, how often did s/he whimper or sob?
1 2 3 4 5 6 7 NA

10. After sleeping, how often did the baby cry if someone doesn’t come within a few minutes?
1 2 3 4 5 6 7 NA

11. In the last week, while being fed in your lap, how often did the baby seem eager to get away as soon as the feeding was over?
1 2 3 4 5 6 7 NA

12. When singing or talking to your baby, how often did s/he soothe immediately?
1 2 3 4 5 6 7 NA
13. When placed on his/her back, how often did the baby squirm and/or turn body?

1 2 3 4 5 6 7 NA

14. During a peekaboo game, how often did the baby laugh?

1 2 3 4 5 6 7 NA

15. How often does the infant look up from playing when the telephone rings?

1 2 3 4 5 6 7 NA

16. How often did the baby seem angry (crying and fussing) when you left her/him in the crib?

1 2 3 4 5 6 7 NA

17. How often during the last week did the baby startle at a sudden change in body position (e.g., when moved suddenly)?

1 2 3 4 5 6 7 NA

18. How often during the last week did the baby enjoy hearing the sound of words, as in nursery rhymes?

1 2 3 4 5 6 7 NA

19. How often during the last week did the baby look at pictures in books and/or magazines for 5 minutes or longer at a time?

1 2 3 4 5 6 7 NA

20. When visiting a new place, how often did your baby get excited about exploring new surroundings?

1 2 3 4 5 6 7 NA

21. How often during the last week did the baby smile or laugh when given a toy?

1 2 3 4 5 6 7 NA

22. At the end of an exciting day, how often did your baby become tearful?

1 2 3 4 5 6 7 NA
23. How often during the last week did the baby protest being placed in a confining place (infant seat, play pen, car seat, etc.)?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

24. When being held, in the last week, did your baby seem to enjoy him/herself?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

25. When showing the baby something to look at, how often did s/he soothe immediately?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

26. When hair was washed, how often did the baby vocalize?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

27. How often did your baby notice the sound of an airplane passing overhead?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

28. When introduced to an unfamiliar adult, how often did the baby refuse to go to the unfamiliar person?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

29. When you were busy with another activity, and your baby was not able to get your attention, how often did s/he cry?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

30. How often during the last week did the baby enjoy gentle rhythmic activities, such as rocking or swaying?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

31. How often during the last week did the baby stare at a mobile, crib bumper or picture for 5 minutes or longer?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|

32. When the baby wanted something, how often did s/he become upset when s/he could not get what s/he wanted?

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA |
---|---|---|---|---|---|---|---|----|
33. When in the presence of several unfamiliar adults, how often did the baby cling to a parent?

1 2 3 4 5 6 7 NA

34. When rocked or hugged, in the last week, did your baby seem to enjoy him/herself?

1 2 3 4 5 6 7 NA

35. When patting or gently rubbing some part of the baby’s body, how often did s/he soothe immediately?

1 2 3 4 5 6 7 NA

36. How often did your baby make talking sounds when riding in a car?

1 2 3 4 5 6 7 NA

37. When placed in an infant seat or car seat, how often did the baby squirm and turn body?

1 2 3 4 5 6 7 NA

Parenting Questionnaire

1. Are there times when your baby is fussy or crying and can’t be soothed or calmed down by you?

   Never   Sometimes   Often   Always

2. Do your worries every get in the way of you enjoying your child?

   Never   Sometimes   Often   Always

3. How often do you read to your baby?

4. How is your baby put to bed?
5. Who makes parenting decisions for your baby?

6. Who do you share your parenting worries and joys with?

7. Beginning at what age is it possible to “spoil” a baby with too much cuddling?

8. How often should you offer your baby a pacifier?
   a. Every time it cries
   b. Half the time it cries
   c. Only at night
   d. Only when your baby needs self-comforting

9. What is a normal temperature for a baby?
   a. 80-90.4
   b. 95-99.6
   c. 97-100.4
   d. 98.6

10. How many “soft spots” does a baby have when it is born?

11. At what age is a baby ready for solid foods?

12. How can you encourage crawling?
13. The number of words that babies hear each day is an important predictor of:  

14. What is one benefit of massaging your baby?  

15. How much do you enjoy playing with your baby?  

Not at all 1 2 3 4 5 6 7 8 9 very much  

16. How confident are you in your ability to meet your baby’s needs?  

Not at all 1 2 3 4 5 6 7 8 9 very much  

17. How confident are you that you will graduate high school?  

Not at all 1 2 3 4 5 6 7 8 9 very much  

18. How stressful is your academic role?  

Not at all 1 2 3 4 5 6 7 8 9 very much  

19. Current GPA? ________  

20. Number of High School Credits complete ________________  

21. How many days a week do you attend classes? ________________  

Parental Stress Scale  

Read each statement carefully. Tell us how well the statement describes the way you feel today.  

<table>
<thead>
<tr>
<th>Strongly</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly</th>
</tr>
</thead>
</table>

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### Parent Group Weekly Evaluation

1. I found the content of this session:

   not helpful  neutral  helpful  very helpful

2. I feel the videotape examples were:

   not helpful  neutral  helpful  very helpful
3. I feel the group leader’s teaching was:

- not helpful
- neutral
- helpful
- very helpful

4. I found the group discussion to be:

- not helpful
- neutral
- helpful
- very helpful

Additional comments:

**Parent Report of Social Validity**
Incredible Years Babies Project
ID: ______________________

Relationship to child: ______________________  Date: __________

How helpful did you find the information provided by the University of Missouri clinician?

☐ not at all helpful  ☐ somewhat helpful  ☐ fairly helpful  ☐ very helpful

What tips can you provide for effectively working with families in the future?

________________________________________________________________________

________________________________________________________________________

What did you like best about the project?
Appendix C. Institutional Review Board Approval Letter

October 4, 2012

Principal Investigator: Sykes, Jennifer Elizabeth
Department: Special Education

Your application to project entitled Evaluating the Incredible Years Parents Babies Program for Promoting Effective Parenting and Reducing Child Maltreatment was reviewed and approved by the MU Campus Institutional Review Board according to terms and conditions described below:

<table>
<thead>
<tr>
<th>IRB Project Number</th>
<th>120408</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding Source</td>
<td>University of Missouri - Columbia</td>
</tr>
<tr>
<td>Initial Application Approval Date</td>
<td>October 4, 2012</td>
</tr>
<tr>
<td>IRB Expiration Date</td>
<td>September 26, 2013</td>
</tr>
<tr>
<td>Level of Review</td>
<td>Full Board</td>
</tr>
<tr>
<td>Project Status</td>
<td>Active - Open to Enrollment</td>
</tr>
<tr>
<td>Risk Level</td>
<td>More than Minimal Risk</td>
</tr>
<tr>
<td>Child Category</td>
<td>45 CFR 46.405</td>
</tr>
<tr>
<td>Type of Consent</td>
<td>Parental Consent (One Parent) Written Consent</td>
</tr>
</tbody>
</table>

The principal investigator (PI) is responsible for all aspects and conduct of this study. The PI must comply with the following conditions of the approval:

1. No subjects may be involved in any study procedure prior to the IRB approval date or after the expiration date.
2. All unanticipated problems, serious adverse events, and deviations must be reported to the IRB within 5 days.
3. All modifications must be IRB approved prior to implementation unless they are intended to reduce risk.
4. All recruitment materials and methods must be approved by the IRB prior to being used.
5. The Continuing Review Report must be submitted to the IRB for review and approval at least 30 days prior to the project expiration date.
6. Maintain all research records for a period of seven years from the project completion date.
7. Utilize the IRB stamped consent documents and other approved research documents located within the document storage section of eIRB.

If you have any questions, please contact the Campus IRB at 573-882-9585 or umcresearch@missouri.edu.

Thank you,

[Signature]
Charles Borduin, PhD
Campus IRB Chair
Jennifer Elizabeth Sykes was born in Melrose Park, Illinois. She graduated from the North Carolina School of Science and Mathematics in 2003. She attended Spelman College from 2003-2007 where she earned her Bachelor of Arts degree in Psychology. Jennifer earned her Master of Arts in Counseling from Fayetteville State University in 2010. She began the Counseling Psychology doctoral program the same year at the University of Missouri.