

A SYSTEMATIC REVIEW OF ATTACHMENT-BASED INTERVENTIONS FOR
CAREGIVERS AND YOUNG CHILDREN LIVING IN POVERTY

By

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A Systematic Review of Attachment-Based Interventions for Caregivers and Young Children
Living in Poverty

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Abstract

Almost half of the 11 million children under the age of three in the United States live in low-income families. Early childhood may be the developmental period most sensitive to the conditions affected by income and living in poverty places children at greater risk for low quality attachment. The purpose of this systematic review was to summarize common themes, differences and shortcomings of interventions that aim to improve child-caregiver attachment and caregiver behaviors with children under the age of three who have been identified as living in poverty or a low socioeconomic background. Eighteen studies met the inclusion criteria. Data extraction identified specific intervention characteristics and the quality of intervention reporting using the TIDieR checklist. Characteristics of the caregivers, children, and interventionists involved in the studies, intervention delivery method, group or individual intervention, location of intervention implementation, the duration, and dose of the intervention were coded from each article. Studies were also analyzed to identify cultural aspects of the participants involved in the interventions, and how those characteristics may have modified or changed the interventions. TIDieR intervention guidelines clearly revealed that more detail was needed in all aspects of intervention reporting. Identification and description of the procedures and materials were most often missing, making it difficult to compare and contrast intervention procedures, and replication of interventions. However, common characteristics of interventions were noted. Mothers were the primary caregivers involved in the intervention, most of were delivered face-to-face (n=18) and in the home (n=17). The majority of interventions (n=14) were provided in individual family/dyad settings as opposed to group settings. Eight studies addressed cultural characteristics regarding the participants involved or how attachment definitions may change regarding participants' culture; most addressed language (n=6). Based on the results of this

systematic review, it is recommended that interventions to enhance child-caregiver attachment and caregiver behaviors for those living in poverty should incorporate a multidimensional and culturally relevant approach, and be reported in a detailed way to allow for deep understanding and replication of the interventions.

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Chapter 1: Introduction

To be vulnerable is to be easily hurt or harmed in a physical, mental or emotional way. In being vulnerable you may be open to attack or harm, and are at risk of being physically or emotionally wounded (Merriam-Webster, n.d.). Although most people are vulnerable in some way due to various situations, such as natural disasters, financial crises, armed conflicts, or social, economic and environmental changes (Malik, 2014), it is clear that some people are more vulnerable than others. It is widely acknowledged that those living in extreme poverty are among the most vulnerable (Malik, 2014).

Living in poverty involves more than having a low-income because it affects multiple dimensions of a person's life. When individuals fall below the poverty threshold they can become vulnerable across multiple dimensions such as health, education, food, material resources, and income (Dutta, Foster, & Mishra, 2011; Malik, 2014). Moreover, beyond an insufficiency in financial assets, people living in poverty are also limited in their access to sufficient health services, education, legal systems, and material goods such as clothing (Malik, 2014; Rouf, 2015). Therefore vulnerability and poverty are linked and multidimensional; a phenomenon that exists in both developing countries and developed countries. By not having access to resources beyond basic needs, people living in poverty, regardless of country, may suffer malnutrition, ill health, lower life expectancy, infant mortality, unemployment and injustice (Rouf, 2015).

According to the Human Development Report, published for the United Nations Development Program, more than 2.2 billion people are vulnerable to multidimensional poverty, including almost 1.5 billion who are classified as multi-dimensionally poor with multiple deprivations in health, education and living standards (Malik, 2014). The report

also states that on a global level 1.2 billion people live on less than \$1.25 a day. Although poverty is undoubtedly a global issue, the depth of poverty deviates from country to country and between regions within specific countries (Rouf, 2015). In the United States, poverty includes individuals living below \$12,071 annually according to the U.S. Census Bureau's Annual Income and Poverty Report issued in 2015 (DeNavas-Walt, Proctor, & Smith, 2015). However, in Bangladesh living in poverty means living off of less than \$1 per day, hence below \$365 annually (Rouf, 2015). Poverty is viewed differently throughout the world and it is important to take into consideration the local conditions and cultures, as well as the economic situation of the region in question. Therefore, it is clear that poverty needs to be defined on a local level in order to promote a more positive and lasting developmental change and wellbeing for individuals and their families living in that region.

In the United States, the official poverty rate is set using thresholds that are issued yearly by the United States Census Bureau. These thresholds represent the annual amount of income that is minimally required to support individuals and families of various sizes. The process for calculating thresholds was established in the 1960's and is the same method still used today (Fisher, 1992), yet the thresholds are updated annually to account for inflation. In the United States, a family is regarded as poor if their income, before tax, is below the poverty threshold in relation to their household size (National Poverty Center, 2015). The U.S Census Bureau (2015) reported 14.8 percent of the population or 46.7 million people were living in poverty in 2014 in the United States. It is crucial to point out that for the fourth consecutive year, the number of people living in poverty in the United States was not statistically different from the previous year's estimates (U.S.

Census Bureau, 2015). Although the poverty rate within the United States is relatively stable, it is important to note the number of people living in poverty in the U.S. includes not only adults, but also the children of families living in poverty.

According to the National Center for Children in Poverty (NCCP) there are at least 11 million children under the age of three in the United States, 47% of which live in low-income families (Jiang, Ekono, & Skinner, 2015). According to the NCCP, research suggests that on average a family needs twice the federal poverty threshold to meet their most basic needs. Thus, families with incomes below twice the amount of the federal poverty threshold are referred to as low income, and may not be able to meet their basic needs. In 2013, if a family of four had an annual income below \$47,248 they were considered low income, but if they had an annual income below \$23,624 they were considered to be living in poverty (Jiang et al., 2015).

Studies have shown that children from families living with low income or in poverty have lower levels of cognitive functioning, academic achievement, and social development compared to children living in more affluent homes (Duncan, Brooks-Gunn, & Klebanov, 1994). Living in poverty and the adverse conditions that may follow have the potential to influence the neurobiology of a developing child in ways that may directly effect negative outcomes later in life, such as poorer health or an increase in maladaptive behavior such as criminal activity (Duncan, Ziol-Guest, & Kalil, 2010). In fact, economic conditions in early childhood appear to have a greater influence for shaping development later in life than the economic conditions present during adolescent years (Duncan et al., 2010).

Developmental theories suggest that early childhood is the developmental period that may be particularly sensitive to environmental conditions affected by income. This is due to the types of developmental tasks, sensitivity to change and relationship to the environment that are present during early childhood (Duncan et al., 2010). It has been shown that by the age of two, young children from families with low social economic backgrounds begin to score lower on intelligence tests (Pettersen & Albers, 2001). Lower socio-economic status is also linked to a lower quality of attachment due to the adverse conditions associated with poverty that can negatively affect the child-caregiver relationship (Belsky & Fearon, 2002).

Attachment between a child and their primary caregiver allows the child a secure base from which the child is able to explore, as well as a safe place for comfort and security (Benoit, 2004). John Bowlby (1969) defined attachment as a “lasting psychological connectedness between human beings” (p.194), and developed the foundation of attachment theory along with Mary Ainsworth (Ainsworth & Bowlby, 1991). The attachment type and quality of attachment that a child develops with a caregiver is greatly affected by the caregiver’s response to the infant when the child’s sense of security is being threatened (Benoit, 2004).

Attachment in both the child and caregiver affects the child’s physical, psychological, developmental and behavioral growth (Rees, 2007). Attachment has also been shown to be an important factor in pediatric situations including: behavioral difficulties, crying, feeding issues, poor eye contact, and failure to thrive (Rees, 2007). The quality of the attachment a child experiences with their caregiver is what is most important (Rees, 2007). Quality of attachment is often a challenge for children living in

poverty placing them at greater risk for having an insecure and low quality of attachment. Overall quality of life may be improved by enhancing the quality of attachment these children experience with their caregivers.

In order to improve the parent-child attachment relationship for those living in poverty, increasing income alone will not be enough to create effective and lasting change. To enable individuals and families who are living in vulnerable situations such as multidimensional poverty, an atmosphere must be created that cultivates resilience, by enhancing an individual's abilities to respond and recover from adversities (Malik, 2014). It is first necessary to understand the region, environment, culture and economic background of the geographical areas of these families so that effective interventions can be built that influence resilience and improve quality of life (Malik, 2014). According to the Human Development Report (2014), the most successful antipoverty initiatives take a multidimensional approach incorporating job creation, income support, expanding health care and education and other community-based development interventions (Malik, 2014).

The purpose of this study is to summarize existing evidence on interventions that aim to improve child-caregiver attachment with children under the age of three who have a low socioeconomic background. This systematic review aims to identify studies that provide a broad amount of information on the variance, outcomes, drawbacks and benefits of interventions that intend to improve child-caregiver attachment for those living in poverty.

Chapter 2: Literature Review

In 2013, children ages 18 years and younger represented 23% of the national population in the United States. Forty-four percent of those children lived in low-income families; almost half (47%) of those in low-income families had children falling under the age of three (Jiang et al., 2015). There are many risk factors associated with growing up in a low-income or poverty-stricken home including: poor academic success, ill health, experiences of trauma and maltreatment, heightened stress responses, difficulty with social, emotional and cognitive development, and insecure and disorganized attachment relationships (Benoit, 2004; Duncan et al., 2010; Malik, 2014; McEwen, 2007). Due to these potentially life-long deficits and difficulties, poverty tends to be a cyclical and intergenerational trend.

It is difficult for children who grow up in poverty to break down barriers created by poverty and when those children become adults and have children of their own, the cycle continues. Children are extremely vulnerable to the negative effects associated with multidimensional poverty decreasing the likelihood of resilience. Efforts have been made to provide interventions for children and families living in poverty, but there is little understanding of the characteristics of the interventions and how they address characteristics of multidimensional poverty. Synthesizing evidence on poverty, early childhood development and attachment theory may make it possible to more effectively develop future interventions that promote change and resilience for vulnerable children.

Impact of Poverty on Development

There are many factors that may cause a family to live in poverty such as parental education, employment, and race/ethnicity. In a report by The National Center for

Children in Poverty in 2013, 34% of white children, 70% of African American children, and 65% of Hispanic children all under 3 lived in low-income families (Jiang et al., 2015). Children with parents who have higher levels of education are less likely to live in low-income families. Eighty-eight percent of children under 3 who had parents with less than a high school diploma lived in low-income families. In addition, 77% of children under 3 living with parents who only have a high school diploma, but no higher education, also lived in low-income families. In families where at least one parent has a college diploma, only 34% of these children were still living in low-income families (Jiang et al., 2015). Regarding employment, 32% of children under the age of 3 with at least one parent working full-time and year round lived in low-income families, while 74% of children in the same age range with no full time working parents, but at least one part time working parent, lived in low-income families. Therefore children under 3 with at least one parent employed full time and year round are less likely to live in low-income families than those with parents who work part time (Jiang et al., 2015).

Poverty is also an intergenerational trend; the negative effects of poverty on childhood development tend to make it more difficult for individuals to evade living in poverty as an adult. Children that grow up in low-income families are more likely to change schools, experience family transitions, and move frequently. Often children of low-income families attend schools with low funding and live in disadvantaged neighborhoods (Jiang et al., 2015). Poverty decreases the likelihood that protective factors will be present, and increases the likelihood of a variety of risk factors being present all at once. In addition to increased risk factors and decreased protective factors, there are fewer opportunities available for children in poverty to escape the cycle of

poverty and benefit from interventions aimed to decrease its impact. All of these risk factors likely make it more difficult for children to prosper in development, education and health and transcend the cycle of poverty (Benoit, 2004; Duncan et al., 2010; Malik, 2014; McEwen, 2007).

In early childhood, combined deleterious factors strongly influence the trajectory of a child's life. Such factors include environmental conditions such as living in poverty, developmental biology such as genetic predispositions, and personal experiences such as trauma and living in poverty. In fact, experiences and conditions early in life are shown to affect lifelong health through chronic damage over time or by biologically affecting sensitive developmental periods (Center on the Developing Child, 2010). Scientific research shows that common diseases in adults, such as cardiovascular disease and diabetes are connected to early childhood and sometimes linked back to as early as the prenatal period (Guyer et al., 2009; Shonkoff, Boyce, & McEwen, 2009). The common thread remains the same; increased experiences of adversity in early childhood lead to greater risk for poor health and adversity in adulthood.

Economic conditions present in early childhood have a stronger effect for shaping individual development than economic conditions during adolescence (Duncan and Brooks-Gunn (1999). As adults, children that grew up in poverty have less success in the job market, difficulty maintaining employment, poorer health, and are more likely to commit crimes (Duncan et al., 2010; Malik, 2014). These setbacks in early childhood may negatively affect the rest of an individual's life. It can be concluded that economic conditions in early childhood may play a more crucial role in shaping an individual's

development and success later in life than economic conditions in adolescence and adulthood (Duncan et al., 2010; Malik, 2014).

Biological processes, individual health, caregiver capacities and quality of attachment in both the caregiver and child provide a framework for improving the physical and cognitive development and mental well being of young children (Center on the Developing Child, 2010). Biological processes play an important role in early childhood development. During early childhood the developing brain is extremely sensitive to the surrounding environment both positively and negatively (Center on the Developing Child, 2010; Johnson, 2005). Research suggests that adult disease and risk for poor health as an adult can be biologically rooted in the brain and other systems of the body during the sensitive period of early childhood (Center on the Developing Child, 2010). In addition, children that grow up with low socioeconomic status appear to be more at risk for biological embedding of disease (Center on the Developing Child, 2010). Researchers have also linked socioeconomic patterns to emotional, cognitive and social development. These differences are observed in areas of brain development that are linked to regulation of emotion, language, social behavior, reasoning capacity, and stress reactivity (McEwen, 2007). For example, Farah et al. (2006), suggest that caregiving related to socioeconomic status, such as responsiveness in caregiver-child interaction, can alter the growth of the prefrontal cortex.

A strong foundation in health, including efficient immune systems and proper nutrition, are important aspects of healthy development (Center on the Developing Child, 2010). In The Adverse Childhood Experiences study (Felitti et al., 1998) connections were made among occurrences of traumatic childhood events and a wide range of

conditions later in life that include: cancer, depression, cardiovascular disease, chronic lung disease, and addiction (Center on the Developing Child, 2010; Edwards, Holden, Felitti, & Anda, 2003; Felitti et al., 1998). Mental health problems and teen pregnancy are reported more often in individuals who have reported adverse childhood experiences (Anda et al., 2006; Center on the Developing Child, 2010; Hillis et al., 2004).

Children that grow up in lower economic backgrounds are more likely to have heightened stress response systems (S. J. Lupien, 2001; Sonia J. Lupien, King, Meaney, & McEwen, 2000). The regulatory systems that manage stress are also linked to the bodies immune and inflammatory responses, these responses are crucial in fighting illnesses and diseases (Center on the Developing Child, 2010). Due to the stressors caused by poverty that are linked to work, housing, health, and family, the caregivers living in these situations are likely to find it difficult to provide sensitive, available and responsive care to their children (World Health, 2004). If caregivers are responsive and available for their children, the children will likely have less stress, and develop healthy emotional regulation, potentially improving the child's development of an efficient immune system (Center on the Developing Child, 2010; Shirtcliff, Coe, & Pollak, 2009).

It is important that a child is able to develop in an environment that facilitates growth and safety, which may allow their biological systems to develop positively and healthily (Center on the Developing Child, 2010). Biological processes affect emotion regulation, sleep patterns, and psychological functioning and these processes are greatly affected by the care that infants and children receive from their caregivers (Center on the Developing Child, 2010; Morris, Silk, Steinberg, Myers, & Robinson, 2007; Scaramella & Leve, 2004). Secure and stable care early in an individual's life is associated with

education achievement, better mental and physical health, consistent employment, fewer behavior problems, and less criminal activity in adulthood (Heckman, 2007). A strong, lasting, and healthy bond between children and their caregivers is an important aspect of growth that affects a child's mental and physical well-being and their development (Center on the Developing Child, 2010). Infants that are securely attached show more positive emotion, decreased anxiety and establish more relationships with peers (Cassidy, 1988). The quality of attachment in both the child and the caregiver affects the child's physical, psychological, developmental and behavioral growth (Cassidy, 1988; Rees, 2007).

Attachment Theory

Attachment theory is based on the works of John Bowlby and Mary Ainsworth. Bowlby and Ainsworth drew on the theories of ethology, cybernetics, information processing and developmental psychology (Ainsworth & Bowlby, 1991; Bretherton, 1992). Bowlby formulated the basic concepts of attachment theory and transformed the way people viewed a child's tie to his/her mother. Ainsworth expanded on Bowlby's theory and contributed the idea that a caregiver is a secure base from which an infant can explore his or her surroundings (Bretherton, 1992). Ainsworth was able to complete research in Uganda and in the United States through which she developed methodology and classification systems based on Bowlby's attachment theory (Ainsworth, 1979; Ainsworth & Bell, 1970). Ainsworth also formulated the idea of maternal sensitivity to infants and the role this plays in the development of infant-mother attachment patterns (Bretherton, 1992).

John Bowlby (1969) defined attachment as a "lasting psychological

connectedness between human beings” (p.194), with the concept of security as a key aspect in attachment theory (Ainsworth, 1979; Rees, 2007; Waters & Cummings, 2000). Attachment between a child and their primary caregiver allows the child a secure base from which they are able to explore, as well as a safe place for comfort and security (Benoit, 2004). A secure infant is able to return to their caregiver for a sense of safety, and identifies their caregiver as available, responsive and confident (Waters & Cummings, 2000). The attachment type and quality of attachment that a child develops with a caregiver is greatly effected by the caregivers response to the infant when the child’s sense of security is being threatened (Benoit, 2004).

Attachment theory suggests that attachment is constructed through an individuals experiences and is not predetermined (Waters & Cummings, 2000). The quality of the attachment a child experiences with his/her caregiver is what is most important, and plays a vital role in the development of behavior and emotion in close relationships through out an individual’s life (Rees, 2007; Waters & Cummings, 2000). Overall quality of life may be improved by enhancing the quality of attachment children experience with their caregivers.

There are four types of attachment between an infant and his/her caregiver. Of these four types, three are organized types and one is considered disorganized (Benoit, 2004). The three types of organized attachment are secure, insecure-avoidant, and insecure-resistant. The disorganized type of attachment is insecure-disoriented (E. A. Carlson, 1998; V. Carlson, 1989; Main & Solomon, 1986). When caregivers consistently respond to an infant who is experiencing distress with sensitivity and comfort, and is available and responsive, such as picking the child up when crying, an infant will likely

feel secure in their relationship with that caregiver (Benoit, 2004; Waters, Hamilton, & Weinfield, 2000). In this situation the child's way of dealing with stress is secure and organized. Securely attached infants may feel that they are able to express their stress to a caregiver who is identified by that child as a safe base from stressful situations (Benoit, 2004; Rees, 2007).

If a caregiver responds to a child in a stressful situation in an insensitive or evasive way the child will likely develop an insecure-avoidant and organized attachment to their caregiver (Benoit, 2004). These infants are less likely to cry in response to separation from their caregiver, and are identified by ignoring their caregiver or failure to greet their caregiver following a separation (Waters et al., 2000). If a caregiver responds to a child in distress in unpredictable ways, such as being inconsistent in how he or she responds to the child distress, a child may develop an insecure-resistant and organized attachment (Benoit, 2004). These infants are often identified by crying not only during separation from their caregiver, but also when they are reunited with their caregivers. These infants often do not cling to their caregivers when picked up and are not easily comforted, and amplify negative expressions of their emotions to possibly draw attention to their inconsistent caregiver (Van Ijzendoorn, Schuengel, & Bakermans–Kranenburg, 1999; Waters et al., 2000). Both avoidant and resistant attachment are considered insecure attachments as they are associated with an increased risk for the child developing delays in emotional and social development (Benoit, 2004). Although it is not ideal for children to display insecure-avoidant and insecure-resistant attachment, these children are able to rely on an organized method of behavioral and emotional regulation (Cyr, Euser, Bakermans-Kranenburg, & Van Ijzendoorn, 2010).

Children that do not fit in the criteria of organized attachment have disorganized attachment. Research studies suggest that disorganized attachment may be the outcome of infants exposure to unusual, atypical and distorted caregiving (Benoit, 2004; Van Ijzendoorn et al., 1999). The term “disorganized” emerged from cases of infants being difficult to classify in any of the three organized types of attachment. Disorganized attachment can be described as the destruction of a reliable and organized construction of emotion regulation (Van Ijzendoorn et al., 1999). Contradictory behavior, misdirected behavior, stilling or freezing and clear apprehension and fear of a caregiver are all signs for disorganized attachment. Contradictory behavior may be identified when an infant does not appear to care when a caregiver returns after stressful separation. Misdirected behavior may be seen when an infant seeks closeness to a stranger instead of a caregiver after stressful separation. Freezing appears to happen when a child is unable to choose between seeking out or avoiding the caregiver and “freezes” for several moments within the thought process. Apprehension is identified when the infant shows fear upon return of the caregiver (Van Ijzendoorn et al., 1999).

This disorganized display of attachment in infants likely occurs because the caregivers, possibly the only source of security for their infants, also frighten their infants through their erratic and unpredictable behavior (Cyr et al., 2010; Lyons-Ruth & Block, 1996). This type of attachment is common with infants who have maltreating parents, but may also occur in families where the caregiver experiences unresolved loss of their own attachment figure or has experienced other traumas (Van Ijzendoorn et al., 1999). Disorganized attachment may cause children more stress during infancy, and may cause aggression by the time they are in kindergarten. These children may also be vulnerable to

such states of mind as absorption and dissociation in young adulthood. Children who are identified as insecurely attached and showing behaviors that are disorganized are at a greater risk for stress dysregulation, behavior problems, poor academic achievement, and poor health (Bakermans-Kranenburg, van Ijzendoorn, & Kroonenberg, 2004; Cyr et al., 2010; Lyons-Ruth & Block, 1996). All of these negative aspects considered, disorganized attachment is likely a major risk factor in the development of child psychopathy (Lyons-Ruth & Block, 1996; Van Ijzendoorn et al., 1999).

Studies have shown that children who have caregivers that are abusive and neglectful are more likely to show disorganized attachment behaviors than non-maltreated children that live in low socio-economic families (Cyr et al., 2010). From an ecological perspective, connections can be seen in child development in various levels. Such influences may be found between cultural values (macro system), poverty (exosystem), marital conflicts (microsystem), genetics, and the subsequent outcomes (Cyr et al., 2010). However, it is the risk factors that are more closely linked to the child, such as the behaviors of the caregiver, that are seen to have the most influence on a child's development. Therefore, while maltreatment and neglect may put a child at greater risk for less than ideal developmental outcomes, socioeconomic risks may still jeopardize a child's sense of security and development (Cyr et al., 2010). Risks related to low socioeconomic status such as low income, low educational achievement, adolescent or single parenthood, ethnic minority, and substance abuse may compromise the quality of caregiving a child receives (Cyr et al., 2010).

Many attachment theorists support the hypothesis that the cultural differences in attachment are minor and that attachment is universally valid. Three core hypotheses

frame attachment theory: the sensitivity hypothesis, the competence hypothesis and the secure base hypothesis. In Western culture, these hypotheses are used to emphasize the importance of a child's individualization, exploration and autonomy (Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000). However, there is some evidence that contradicts the universality hypothesis, particularly questioning the core aspects of attachment theory, suggesting attachment theory is based in Western culture and ideals. In Japan, competence, a secure base and sensitivity are viewed very differently. Differences in maternal sensitivity have been noted when comparing mothers in the United States and Japan. For example when Japanese mothers communicate with their children maternal speech is focused on emotions rather than on information as in the United States. Contact is another area in which marked differences can be seen between the two cultures; in Japan contact is focused on prolonged physical contact and in the U.S. eye contact is the main focus. Americans' beliefs about attachment lead them to negatively view Japanese caregiving practices. Japanese mothers were viewed as "misguided, rather than simply different" (Rothbaum et al., p. 1101). If these values are viewed differently in various cultures then it is likely that misconceptions about attachment relationships will occur, which may skew the quality of attachment designated to an infant and their caregiver. Nevertheless, attachment theory has served as a theoretical foundation for therapeutic interventions and programs (Rothbaum et al. (2000).

Therapeutic programs and interventions utilizing a theoretical framework of attachment theory should take into consideration the family's culture and values to effectively address attachment relationships. However, the universality of these concepts has been questioned, suggesting that the core concepts of attachment theory and the

subsequent interventions may not cross cultural lines (Bakermans-Kranenburg et al., 2004; McKenna, 2009; Rothbaum et al., 2000). Although there has been research that identifies specific environmental factors and the effects and outcomes that correlate with secure and insecure attachment, there is little to no research on how these factors and attachment hypotheses correlate in different cultures (McKenna, 2009; Rothbaum et al., 2000). If attachment theory has been developed through the core beliefs and ideology of the Western culture, then the interventions that stem from this theory need to be reviewed and analyzed when taking into account other cultural perspectives and beliefs (Rothbaum et al., 2000)

Building A Framework for Interventions and Intervention Reporting

Complex interventions are used in areas such as health services, public health practice and in social policy. These complex interventions are usually identified by containing several interacting components, and have many characteristics that need to be considered (Craig et al., 2008). In attachment interventions these interacting components might include, but are not limited to, the ethnicity, age, socioeconomic status, personal experiences, educational background, and culture of the involved child-caregiver dyad. Craig et al. (2008) identified two key questions when evaluating complex interventions. First, are the interventions effective in everyday practice? Second, how does the intervention work? It is very important to understand all of the aspects of the intervention and how they will work to create effect.

There are many crucial steps that need to be taken in order to develop an effective complex intervention. The first, and most important step is to develop a theoretical framework for the intervention by identifying existing evidence. Through this, an

intervention is likely to be developed with a reasonable expectation that it will have an effect (Craig et al., 2008). Certain questions need to be answered about existing interventions. For instance, what is already known about similar interventions, and what methods are used to evaluate them? Is there a recent high quality systematic review on this subject? If there is no existing review, conducting a systematic review is an important first step in the development of an intervention (Craig et al. (2008). By synthesizing existing evidence and theory related to the intervention, the expected outcomes of the intervention and how those outcomes will be achieved will be theoretically supported and developed.

An intervention development study might be very useful regarding complex interventions, where there are several interacting components (Craig et al., 2008; Hoddinott, 2015). A development study reports the reasoning, decision process, method and outcomes that occur throughout the beginning and end of the intervention development until it is ready to be tested (Hoddinott, 2015). Understanding all aspects about the development of an intervention such as the what, why, when and how is crucial when attempting to replicate an intervention. An intervention manual provides the detailed information needed to implement an intervention (Hoddinott (2015).

In addition to understanding intervention development, interventions need to be reported in a way that makes it possible and attainable for readers to understand and replicate the intervention. The Template for Intervention Description and Replication (TIDieR) checklist and guide is used to describe interventions in a way that makes this possible (Hoffmann et al., 2014). The TIDieR checklist was developed by extending the CONSORT Statement (Schulz, Altman, & Moher, 2010), and the SPIRIT statement

(Chan et al., 2013), existing checklists to help identify the breadth of information needed to effectively replicate and report an intervention. To help authors improve intervention reporting, the TIDieR checklist requests the following information be identified to describe the intervention: brief name, rationale and theory, materials, procedures, interventionist, delivery method, frequency, location and duration, intervention tailoring modifications, assessment of intervention adherence or fidelity, and finally how well was the intervention was delivered. The TIDieR checklist could be a useful tool to describe existing interventions within a systematic review as an initial step in developing complex interventions and insure a clear understanding of the intervention components (Hoffmann et al., 2014).

Conclusion

Early childhood interventions may be most effective in enhancing quality of life and increasing developmental and educational perspectives. The concept of early neurological sensitivity combined with environmental conditions such as living in poverty, personal experiences such as trauma and maltreatment, and the possible irreversible effects of those impacts on brain development in the first three years of life promote the importance of early childhood interventions (Bakermans-Kranenburg et al., 2004; Center on the Developing Child, 2010; Farah et al., 2006; McEwen, 2007). It is crucial that early interventions take into account the cultural influences of the child and caregiver, as it has been shown that the concepts and definitions of attachment theory are based in Western ideals and beliefs and may not cross cultural boundaries (Bakermans-Kranenburg et al., 2004; McKenna, 2009; Rothbaum et al., 2000). The cultural aspects related to attachment also need to be considered as they may affect the acceptability,

compliance and delivery of interventions. Additionally, it has been suggested that poverty be addressed and defined as a multidimensional entity including deprivations in health, education, material goods, food, and income (Dutta et al., 2011; Malik, 2014).

Addressing poverty in this way and the subsequent interventions based on those findings will promote more positive and lasting change (Rouf, 2015). Cultivating healthy attachment relationships between children and their caregivers is a critical step in creating environments in which children living in low-income families might be able to transcend the cycle of poverty, ultimately creating lasting change.

Therefore, the purpose of this study is to conduct a systematic review to summarize existing evidence on interventions that aim to improve child-caregiver attachment and caregiver behaviors such as sensitivity, responsiveness, and involvement with children under the age of three who have been identified as living in poverty or a low socioeconomic background. This systematic review aims to identify the variance, outcomes, drawbacks and benefits of interventions that strive to improve child-caregiver attachment within the current published literature. In addition, this systematic review will identify the quality of the intervention reporting in the studies included in this review. More specifically this systematic review will be an aggregative and configurative review that will seek to inform decisions about improving child-caregiver attachment by combining and organizing similar forms of research to provide a greater understanding of the problem and potential solutions (Gough, 2012).

Studies that include interventions that have been published within the last 20 years will be included in this systematic review. Although intervention reporting was not as common until 2010 with the development of the CONSORT Statement, an overview

of the extant literature suggests an insufficient number of studies are available from 2010 forward to provide adequate information. Therefore, studies from 1996 through March 2016 will be included in an effort to provide the most current published research on this subject. Identifying the characteristics of the interventions included in this review, and establishing their effectiveness, will inform readers about the current scope of interventions available and provide recommendations for characteristics to be considered in the selection and development of effective interventions. These recommendations may be helpful to choose the most appropriate and efficacious pre-existing interventions for a clinical setting. Additionally, the synthesis provided in this review might be used to develop more effective attachment based interventions for young children and their caregivers who live in poverty.

This systematic review will address the following research questions:

1. Are the studies included in this review reported in a way that makes it possible and attainable for readers to understand and replicate the intervention?
2. What are the specific characteristics of interventions that aim to improve child-caregiver attachment (via enhancing caregiver behaviors such as sensitivity, responsiveness, or involvement) with children 3 or younger living in poverty?
3. How do interventions account for cultural characteristics of the participants being studied and how those characteristics may change the Western definitions of secure attachment? In other words, establish whether or not the intervention is generalizable and universal (cross-cultural).
4. What are the characteristics of effective interventions?

5. What are recommendations for developing characteristics of effective interventions aimed to improve attachment relationships with children 3 or younger and their caregivers who are living in poverty?

Chapter 3: Methods

The purpose of this systematic review to ascertain the characteristics of effective interventions targeting attachment and attachment-related behaviors and make recommendations for future selection and development of attachment based interventions for young children (ages 0-3 years) and their caregivers living in poverty.

Search Strategies

Studies for this systematic review were identified using keywords for two search strategies: keyword database search and a hand search of reference lists. Keywords were selected to adequately describe the types of research articles and interventions intended for this study identified from words repeatedly utilized in the background and literature review on attachment theory, early childhood, and poverty for Chapters 1 and 2 of this study. Quality of attachment was often described as a relationship and measured by characteristics such as sensitivity, responsiveness, or involvement. Living in low socioeconomic conditions was described as poverty, low-income, or low socioeconomic conditions. Children under 3 years were often described as children, toddlers, or infant. Lastly, intervention, program, therapy and prevention were also used frequently within the background literature reviewed for this study. The search terms were combined in order to capture the most relevant literature; yet limit the literature unrelated to the research questions.

The keywords are indicated in Table 1. Keyword searches in each database utilized combinations of each term in Column 1 with the terms in the other columns. For example: attachment, poverty, caregiver, child and intervention would be one search. The second search might be: attachment, low-income caregiver, child, and intervention. This

was continued until all word combinations in each column had been searched. Search limits were set in each database as allowable, such as age range (0-3 years, childhood, neonatal, infancy or infant, toddler and/or preschool), publication year (1996-2016), and English language publication.

Table 1

Keywords

| Term 1 | Term 2 | Term 3 | Term 4 | Term 5 |
|----------------|--------------------------|---------------|---------|--------------|
| Attachment | Poverty | Caregiver | Child | Intervention |
| Sensitivity | Low-income | Mother | Infant | Program |
| Responsiveness | Low socioeconomic status | Father | Toddler | Therapy |
| Involvement | | Parent | | Prevention |
| Relationship | | Foster parent | | |

An initial keyword search was conducted on/from insert date or dates/range of search using the following databases: PUBMED, MEDLINE, PsychINFO, and Web of Science (Science Citation Index Expanded, Social Sciences Citation Index, Arts and Humanities Citation Index and Emerging Sources Citation Index). A secondary keyword search of titles was conducted on/from (insert date/dates/range of search) using the reference lists of articles, books, and websites used in the first two chapters of this thesis and from the articles found in the initial database search in order to conduct a comprehensive search of the existing literature. Keywords were used to identify the published literature on databases and were used in the secondary search when the researcher reviews reference lists.

Articles included in this study met the following criteria:

- An intervention study of any design (qualitative, quantitative, mixed methods).

- Interventions addressed one or more of the following outcomes: caregiver-child relationships, attachment, sensitivity, responsiveness, or involvement.
- Interventions took place in any setting and could include: residential homes, hospitals, outpatient settings, community settings, and educational or day-care settings.
- Studies targeting children ages 0-3 years and their caregivers. Caregivers could be identified as: caregiver, parent, mother and/or father, or foster parent.
- Demographic characteristics of participants were categorized as low income, low socioeconomic status, or living in poverty.
- Studies published between January 1996 and March 2016.
- Publications were peer-reviewed.

Articles were excluded for the following reasons:

- A review or meta-analysis study.
- Described a program or are an intervention manual.
- Not an intervention study.
- A book or book chapter.
- Not a peer-reviewed article
- Participants included children who were 4 years and older, and/or did not involve a caregiver.
- Participants were not identified as living in poverty, low income, or having low socioeconomic status.

- Interventions developed specifically for caregivers with depression, children with disabilities or for premature infants, as these interventions may be specialized and not generalizable.
- Not available in English.

Study Selection

The researcher conducted the initial keyword search; titles and abstracts were reviewed for relevance based on the inclusion and exclusion criteria. The full text of relevant articles were downloaded and entered into the article tracking form. The article tracking form functioned as a method to trace the full data set of relevant records and identify any duplicate studies. This form listed the full reference including study authors, title, year of publication and journal title. From the article tracking form, duplicate articles were eliminated and full text articles were further reviewed for inclusion. All full text articles were analyzed for inclusion or exclusion criteria. Studies excluded during full text review were entered on the article tracking form, with the reason for exclusion noted. An external reviewer, who is familiar with the process of systematic reviews, crosschecked all articles identified for exclusion. The external reviewer noted discrepancies and a rationale for the discrepancy on the article tracking form. The researcher reviewed the full text article specific to the suggestions made by the external reviewer and either agreed with the external reviewer's discrepancy or had a discussion with the external reviewer until consensus was reached. Articles identified in each database and the by-hand secondary searches are identified in a flow diagram in the Results Chapter. The PRISMA Flow Diagram is illustrated in Figure 1 (see <http://prisma-statement.org/>) in accordance with the PRISMA Statement for the transparent reporting

of systematic reviews (Liberati, et al., 2009). It accounts for duplicate articles and specifies the number of articles excluded, the reason for exclusion at each level of the process, and the number of articles coded and analyzed through the process of the review. Once crosschecking and agreement were reached, the researcher began the data extraction process.

Data Extraction

The data extraction method for this review utilized a data extraction tool developed by the researcher based on the TIDieR checklist for intervention reporting (see <http://www.consort-statement.org/resources/tidier-2>), as well as a separate data extraction form developed to answer all research questions, also partially based on the TIDieR checklist. The data extraction form is available in the Appendix. Research Question 1 was answered by assessing whether or not each item of the TIDieR checklist was present in the article included in this review. Research question 2 was answered with the data extracted using items 2 through 16 on the data extraction form. This included the materials used in the intervention, the procedures and process of the intervention, who provided the intervention, where the intervention occurred, and when and how often the intervention was delivered. Research Question 3 was analyzed through items 17 through 19 on the data extraction form. Items 2 through 18 on the data extraction form were examined for patterns to address Research Question 4. This data assessed whether or not the intervention was designed to be tailored, modified or adapted, and if so, how it was changed. Interventions were analyzed to see if any specific cultural characteristics were identified and taken into consideration about the participants of the study to establish

intervention generalizability and universality through item 15 on the data collection form. Research Question 5 was based on the synthesis of information extracted in this review.

Data Analysis

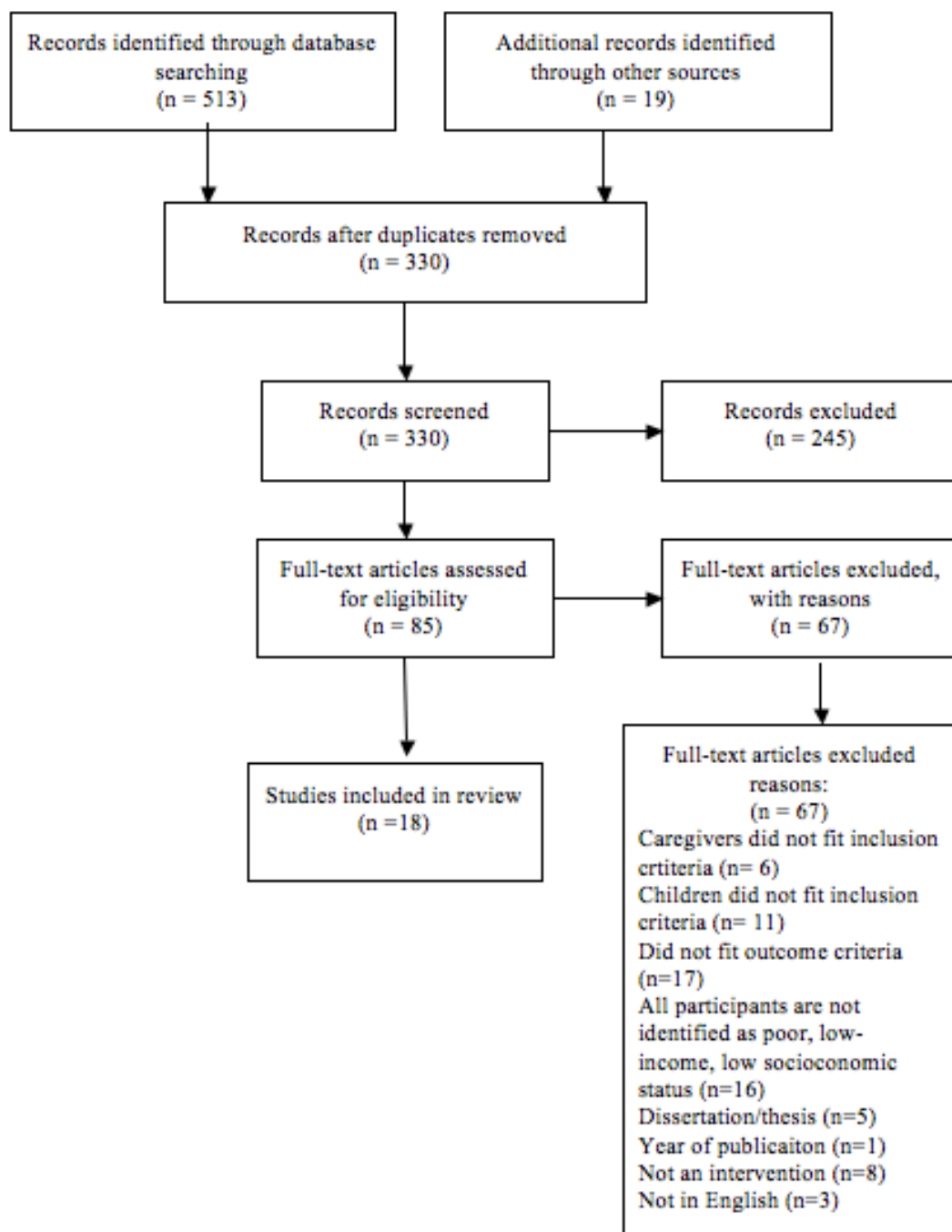
Data were analyzed using descriptive statistics and pattern identification of the narrative descriptions extracted from the reviewed studies to answer the research questions. During data extraction, if it was unclear whether or not items on the TIDieR checklist were included in the studies presented in this review, the item on that checklist was marked as not included, as items need to be clearly addressed in order for readers to be able to identify them and use them for replication. The researcher read through the included studies in this review and with as much detail as possible entered any information found within the data extraction form seen in the Appendix. After the data extraction form was filled out for each article, the researcher filled out the data extraction tool based off of the TIDieR checklist. The researcher then coded for common themes regarding each question on the extraction form, and data extraction tool based TIDieR checklist.

Chapter 4: Results

The database keyword search resulted in 513 articles, with another 19 articles identified through other sources (e.g. reference lists of articles, books, and websites). Authors and titles were reviewed for duplicates (n=202) resulting in 330 articles that were screened for inclusion. Screening of the titles and abstracts resulted in another 245 records being excluded for relevance based on the inclusion and exclusion criteria. Eighty-five full-text articles were assessed for eligibility by the researcher. Articles excluded were independently cross checked by an external reviewer. If the external reviewer had a discrepancy with the researcher's decision to exclude, a rationale for inclusion was provided to the researcher. The researcher reviewed the article a second time and either agreed or disagreed with the external reviewer. The external reviewer and the researcher discussed those articles with further discrepancies until consensus was reached. An additional 67 articles were excluded and the reason for exclusion was noted. See Figure 1 for the PRISM Flow Diagram. This diagram traces the process of article identification, screening, and the number of articles excluded, as well as the reason for exclusion for following full-text review.

Figure 1.

Flow diagram of study inclusion process



Eighteen articles met all inclusion criteria and were reviewed for this study. See Table 2.

Table 2

Included Studies

| Study | Title |
|--|--|
| Aspoas & Amod, 2014 | A South African study on caregiver perceptions of a parent-infant intervention implemented to foster secure attachment |
| Canfield et al., 2015 | Primary Care Parenting Intervention and its effects on the use of physical punishment among low-income parents of toddlers |
| Carrasco & Fox, 2012 | Varying treatment intensity in a home-based parent and child therapy program for families living in poverty: A randomized clinic trial |
| Cassidy, Woodhouse, Sherman, Stupica, & Lejuez, 2011 | Enhancing infant attachment security: an examination of treatment efficacy and differential susceptibility |
| Cicchetti, Rogosch, & Toth, 2006 | Fostering secure attachment in infants in maltreating families through preventive interventions |
| Cooper et al., 2002 | Impact of a mother-infant intervention in an indigent peri-urban South African context: Pilot study |
| Cooper et al., 2009 | Improving quality of mother-infant relationship and infant attachment in socioeconomically deprived community in South Africa: randomised controlled trial |
| Hans et al., 2013 | Promoting Positive Mother-Infant Relationships: A Randomized Trial of Community Doula Support For Young Mothers |
| Heinicke et al., 1999 | Relationship-based intervention with at-risk mothers: Outcome in the first year of life |
| Huebner, 2002 | Evaluation of a clinic-based parent education program to reduce the risk of infant and toddler maltreatment |
| Kemp et al., 2011 | Child and family outcomes of a long-term nurse home visitation programme: a randomised controlled trial |
| Knoche et al., 2012 | Getting ready: Results of a randomized |

| | |
|--|--|
| | trial of a relationship-focused intervention on the parent-infant relationship in rural early head start |
| Lee, McCreary, Breitmayer, Kim, & Yang, 2013 | Promoting mother-infant interaction and infant mental health in low-income Korean families: attachment-based cognitive behavioral approach |
| Mayers, Hager-Budny, & Buckner, 2008 | The chances for children teen parent-infant project: Results of a pilot intervention for teen mothers and their infants in inner city high schools |
| Murphy et al., 2015 | Group attachment-based intervention: Trauma-informed care for families with adverse childhood experiences |
| Olds, 2008 | Preventing child maltreatment and crime with prenatal and infancy support of parents: The nurse-family partnership |
| Svanberg, Mennet, & Spieker, 2010 | Promoting a secure attachment: A primary prevention practice model |
| Vallotton, 2012 | Infant signs as intervention? Promoting symbolic gestures for preverbal children in low-income families supports responsive parent-child relationships |

Intervention Reporting

In order to address whether or not the studies included in this review were reported in a way that makes it possible and attainable for readers to understand and replicate the intervention articles were analyzed utilizing the TIDieR checklist for better reporting of interventions (Hoffmann et al., 2014). This is a twelve-item checklist of information that should be included when describing an intervention and the location of the information. This information includes: brief name, why (rationale, theory, goal), what materials, what procedures, who provided, how was the intervention delivered and where did it take place, tailoring, modifications, how well the intervention was planned, and how well the intervention was implemented. Table 3 lists each item on the TIDieR

checklist, and how many of the eighteen studies included in this review contain the item on the checklist, or do not include the item on the checklist. If it was unclear as to whether or not the item was included in the study it was coded as not included. Further description and definitions of the items on the checklist are discussed in Chapter Five.

Table 3

Intervention Reporting

| Item on Checklist | Number of Studies that Include Item | Number of Studies that Do Not Include Item |
|---|-------------------------------------|--|
| Name or Title | 14 | 4 |
| Rationale, Theory or Goal | 18 | 0 |
| Materials | 0 | 18 |
| Procedures | 2 | 16 |
| Who Provided | 17 | 1 |
| How was the Intervention Delivered | 18 | 0 |
| Where did the Intervention Take Place | 18 | 0 |
| When and How Much | 17 | 1 |
| Was the Intervention Tailored or Personalized | 7 | 11 |
| Was the Intervention Modified | 2 | 16 |
| Was Fidelity assessed Pre-implementation | 18 | 0 |
| Was Fidelity Assessed During/After Implementation | 18 | 0 |

Establishing characteristics of interventions

The following results based on intervention characteristics are broken down into specific characteristics in order to establish common intervention features. These include identifying characteristics about the interventionists, the caregivers, and children involved in the studies, the methods of delivery of the intervention (i.e. fact-to-face, phone calls, internet), provided as a group or individually, location of intervention

implementation (in home or in a clinic/laboratory), and the duration and dose of the intervention. Two of the studies included in this review implemented 2 interventions (Canfield et al., 2015; Cicchetti et al., 2006) therefore there are a total of 20 interventions included in this review. The Canfield et al., 2015 study included the Video Interaction Project (VIP) and Building Blocks (BB) interventions. The Cecchetti et al., 2006 study included the Psychoeducational Parenting Intervention (PPI) and the Infant Parenting Psychotherapy (IPP) interventions. As this study was interested in examining intervention characteristics rather than outcomes of the interventions, a statistical analysis of synthesized results was not conducted, nor were the individual studies assessed for bias.

Interventionists: All eighteen of the included studies identified an individual or multiple individuals that implemented the intervention involved in the study. However, the descriptions of the individuals varied. Table 4 identifies the study and the discipline or title identified for the interventionist (i.e. psychologist, nurse, counselor, health visitor), and any special qualifications given (level of education, and specific training) of the individual/s that implemented the interventions.

Table 4

Interventionists

| Study | Title Given to Interventionist | Special Qualifications |
|---|--|---|
| Aspoas & Amod, 2014 | Psychologist, and multi lingual social worker-auxiliary worker | N/A |
| Canfield et al., 2015) | VIP: Interventionist BB: information was mailed, none | Bachelor's degree and experience working with children. |
| Carrasco & Fox, 2012 | Professional counselors Graduate students | Professional counselors had bachelors degree |
| Cassidy, Woodhouse, Sherman, Stupica, & | Clinicians | 4 Master's level 2 doctoral level |

| | | |
|--|---|---|
| Lejuez, 2011 | | |
| Cicchetti, Rogosch, & Toth, 2006 | IPP: Therapist PPI: Therapists | IPP: Master's degree PPI: Master's degree and experience in working with multi-problem families. |
| Cooper et al., 2002 | 4 Khayelitsha women | Trained in the interventions Trained in basic counseling skills |
| Cooper et al., 2009 | 4 Mothers | Previously untrained lay community workers |
| Hans et al., 2013 | 4 African American Doulas | From the community Previous experience working with young mother 10-week training |
| Heinicke et al., 1999 | Mental Health professionals | Experience in child development and family systems approaches |
| Huebner, 2002 | Interdisciplinary team: nurse specialist or early childhood educator, social worker, and registered nutritionist. | Core staff had master's degree and experience in conducting parenting classes |
| Kemp et al., 2011 | Child family health nurses | N/A |
| Knoche et al., 2012 | 64 Early Childhood Professionals (ECP's) | N/A |
| Lee, McCreary, Breitmayer, Kim, & Yang, 2013 | Nurse | Trained |
| Mayers, Hager-Budny, & Buckner, 2008 | Therapists | N/A |
| Murphy et al., 2015 | 2 Lead Clinicians 2-6 graduate students who work interchangeably as a team | |
| Olds, 2008 | Nurses | Training in women's and children's health |
| Svanberg, Mennet, & Spieker, 2010 | Health visitors Parent/infant Psychologists | N/A |
| Vallotton, 2012 | Research Team | N/A |

Note: N/A, not applicable means that no other information was available.

The most prevalent interventionist titles fall under the mental health professional category, including psychologist, counselor, therapist or social worker (n=7). Nurses

were the next most common interventionist category (n=4). Two studies identified the interventionist as an early childhood educator/specialist and 2 studies utilized community women as the interventionists. Interventionists identified as mother, doula, registered nutritionist were identified in one study each, while more general terms were used in other studies (e.g. research team, interventionist, graduate student). Seven of the studies describe the educational qualifications of the interventionists including bachelors, masters, and doctoral degrees. One study identifies bachelor's degree, five identify master's degrees, and one identifies doctoral degrees as special qualifications of the interventionist. Out of the eighteen studies, only four state that training occurred or was required for the interventionists.

Caregivers: All eighteen studies identify the caregivers involved in the interventions. Table 5 identifies the caregivers involved in the included studies. Fifteen studies identified mothers as the majority (no study less than 95%) of caregivers included in the interventions. In three studies (Hans et al., 2013; Kemp et al., 2011; Olds, 2008), the mothers received intervention prenatally and postnatally.

Table 5

Caregivers

| Study | Title of Caregiver |
|--|--------------------|
| Aspoas & Amod, 2014 | Caregivers |
| Canfield et al., 2015) | Mothers |
| Carrasco & Fox, 2012 | Family |
| Cassidy, Woodhouse, Sherman, Stupica, & Lejuez, 2011 | Mothers |
| Cicchetti, Rogosch, & Toth, 2006 | Mothers |
| Cooper et al., 2002 | Mothers |
| Cooper et al., 2009 | Mothers |
| Hans et al., 2013 | Mothers |
| Heinicke et al., 1999 | Mothers |
| Huebner, 2002 | Mothers |

| | |
|--|----------------------|
| Kemp et al., 2011 | Mothers |
| Knoche et al., 2012 | Mothers (5% Fathers) |
| Lee, McCreary, Breitmayer, Kim, & Yang, 2013 | Mothers |
| Mayers, Hager-Budny, & Buckner, 2008 | Mothers |
| Murphy et al., 2015 | Mothers |
| Olds, 2008 | Mothers |
| Svanberg, Mennet, & Spieker, 2010 | Mothers |
| Vallotton, 2012 | Families |

Children: All eighteen studies identified the children that participated in the intervention. All children included in the interventions were 0-36 months old. At the start of the included interventions, fourteen of the included child participants were either specifically classified as infants, or identified as 0-12 months old (Aspoas & Amod, 2014; Cassidy, Woodhouse, Sherman, Stupica, & Lejuez, 2011; Cicchetti, Rogosch, & Toth, 2006; Cooper et al., 2002; Cooper et al., 2009; Hans et al., 2013; Heinicke et al., 1999; Huebner, 2002; Kemp et al., 2011; Knoche et al., 2012; Lee, McCreary, Breitmayer, Kim, & Yang, 2013; Mayers, Hager-Budny, & Buckner, 2008; Olds, 2008; Svanberg, Mennet, & Spieker, 2010), two were either classified as toddlers or identified as 12-36 months old (Carrasco & Fox, 2012; Vallotton, 2012), and two of the included studies classified the child participants as both infants and toddlers, or 0-36 months old (Canfield et al., 2015; Murphy et al., 2015).

Methods of delivery: All eighteen interventions utilized a face-to-face method of intervention delivery. In addition, the Canfield et al. (2015) study also implemented an intervention that was implemented by mailing information and materials.

Provided individually or as a group: All eighteen studies reported on whether or not the intervention was implemented on an individual family/dyad bases, as a group, or both. Twelve of the studies utilized the individual family/dyad approach, three studies

utilized a group approach (Aspoas & Amod, 2014; Huebner, 2002; Murphy et al., 2015), and three utilized a combination of both individual and group approaches (Heinicke et al., 1999; Lee et al., 2013; Mayers et al., 2008).

Where did the interventions take place: Seventeen out of the eighteen studies identified a specific place (home, clinic, or high school) where the intervention took place. Thirteen studies took place in the participant's homes including the 2 interventions in the Cecchetti et al., 2002 study (Canfield et al., 2015; Carrasco & Fox, 2012; Cassidy et al., 2011; Cicchetti et al., 2006; Cooper et al., 2002; Cooper et al., 2009; Hans et al., 2013; Heinicke et al., 1999; Huebner, 2002; Kemp et al., 2011; Knoche et al., 2012; Olds, 2008; Svanberg et al., 2010; Vallotton, 2012), four took place in clinics (Aspoas & Amod, 2014; Hans et al., 2013; Huebner, 2002; Murphy et al., 2015), one took place in a high school (Mayers et al., 2008), one was unidentified other than occurring in South Korea (Lee et al., 2013), and one involved individual home visits and group visits at an unidentified location (Heinicke et al., 1999).

Were interventions personalized or adapted: Nine of the studies included in this review utilized interventions that were planned to be personalized or adapted for the participants involved (Canfield et al., 2015; Cassidy et al., 2011; Heinicke et al., 1999; Kemp et al., 2011; Knoche et al., 2012; Mayers et al., 2008; Murphy et al., 2015; Olds, 2008; Svanberg et al., 2010). Ten of the interventions reviewed did not appear to involve personalization or adaptations to the interventions (Aspoas & Amod, 2014; Canfield et al., 2015; Carrasco & Fox, 2012; Cicchetti et al., 2006; Cooper et al., 2002; Cooper et al., 2009; Hans et al., 2013; Huebner, 2002; Lee et al., 2013; Vallotton, 2012). In the

Canfield et al., 2015 study the VIP intervention was personalized and the BB intervention was not.

Establishing cultural characteristics of interventions

In order to establish whether or not the interventions in the included studies address cultural characteristics, all studies were analyzed to identify any identified cultural characteristics and how those may have affected or changed the interventions. Eight out of eighteen studies included in this review address cultural characteristics regarding either the participants involved or how attachment definitions may change regarding participants culture. Of the eight studies that address cultural characteristics, six studies address language. Participants of these studies were allowed to participate even if they did not speak English. The languages included in the six studies were English (separate the citations for each language, i.e. citation so English here, the ones for Spanish after Spanish, etc.), Spanish, Korean and Xhosa (Aspoas & Amod, 2014; Canfield et al., 2015; Cooper et al., 2002; Knoche et al., 2012; Lee et al., 2013; Vallotton, 2012).

In three of the studies included, influences of culture are recognized. In Huebner (2002a) and Murphy et al. (2015) influences of culture are recognized regarding the caregivers involved in the studies. However, it is unclear what these cultural characteristics were, and how they affected the intervention. In the study by Aspoas and Amod (2014), cultural context is recognized and described as a blending of Western psychoanalytic thinking with African indigenous knowledge.

Chapter 5: Discussion – Summary of Evidence

Intervention Reporting: Without adequate and complete published intervention reporting, researchers cannot reproduce or further address and build upon research findings (Hoffmann et al., 2014). It is crucial that a full description of the key characteristics included in the intervention are adequately described and explained so that other researchers may be able to understand the process and rationale behind those characteristics. In addition, to understand intervention development, interventions need to be reported in a way that makes it possible and attainable for others to understand and replicate the intervention. The studies included in this review were analyzed using the TIDieR checklist, a template for intervention description and replication (Hoffmann et al., 2014). The following discussion includes a description and discussion of each item on the checklist (n=12) and the number of studies that included or did not include that item. If it was unclear as to whether or not the item was included, the item was marked as not included.

TIDieR Item 1 requested the name or title of the intervention. Fourteen of the eighteen studies included a title for the intervention. This information is important as it allows for easy identification of the specific type of intervention and enables a link to other studies utilizing the same intervention (Hoffmann et al., 2014). Such a link might allow researchers to quickly locate all research literature regarding a specific intervention.

TIDieR Item 2 describes the rationale, theory or goal of the elements essential to intervention. The item is important because it allows readers to understand what elements are essential and why (Hoffmann et al., 2014). All of the articles included in this study

identified a rationale, theory or goal regarding the essential elements in their interventions. Many studies included like Aspoas and Amod (2014) and Cassidy et al. (2011) include a rationale for attachment based interventions as well as information on attachment theory. In addition, some studies also included information on the background and development of the interventions implemented in the studies (Canfield et al., 2015; Carrasco & Fox, 2012).

None of the studies included an adequate list of materials used in the intervention, nor did they include where intervention materials could be accessed, as required in TIDieR Item 3. Descriptions of interventions should describe what physical and informational materials were used in the intervention, including where they can be viewed or accessed. According to Hoffmann et al. (2014), Item 3 is the most commonly missing characteristic of intervention reporting. The list of materials is sometimes related to a list of ingredients, essential to a recipe. In order to sufficiently understand and replicate an intervention it is crucial that materials used are explicitly identified, but also where they can be found. In addition, what information the materials provide is valuable as they may have direct relevance to the intervention characteristics and outcomes. The description and identification of the materials is directly related to Item 4: Procedures. Only two of the studies (Lee et al., 2013; Vallotton, 2012) provide a sufficient description of the procedures involved in the intervention. This includes what process, activities or procedures the intervention implementers carried out. This is the recipe of the intervention, essential in understanding what happened and how it happened (Hoffmann et al., 2014).

Item 5 on the checklist asks who provided the intervention. Seventeen of the studies provided at minimum, a title for the interventionist. In the Mayers et al. (2008) study it was unclear as to who provided the intervention, and it was subsequently marked as not included. If the studies provided at least a title for the interventionist (e.g. nurse, clinician, therapist), they were marked as including that information. However, it is strongly suggested that the studies describe not only their title, but also their backgrounds, expertise and any specific training they received especially as related to the chosen intervention. Item 6 requests a description of how the intervention was delivered (i.e. mode of delivery). For example, was the intervention delivered face-to-face, or via mail, telephone or internet? All eighteen interventions utilized a face-to-face method of intervention delivery. In addition, Canfield et al. (2015) implemented a second intervention that was executed by mailing information and materials. This aspect of intervention reporting is crucial to others' ability to replicate the intervention (Hoffmann et al., 2014).

Item 7 included a description of the locations where the intervention occurred. All eighteen studies included some information on this topic; however, details regarding the locations varied. Seventeen of the eighteen studies identified a specific place (i.e. home, clinic, or high school) where the intervention took place. Thirteen studies took place in the participant's homes, four took place in clinics, one took place in a high school, one was unidentified other than occurring in South Korea, and one involved individual home visits and group visits at an unidentified location. It is important to describe not only where the intervention occurred, but also any necessary infrastructure or relevant features. Only one article (Murphy et al., 2015) included in this review described a more

detailed description of the location where the intervention took place. Murphy et al. (2015), describes a clinical setting, established to provide a sense of safety for the participants that specifically omitted commercial entertainment and traditional holiday decorations. These specific features are important in that they may impact aspects of the intervention, and might be crucial to intervention replication (Hoffmann et al., 2014).

Item 8 on the checklist describes the number of times the intervention was delivered and over what period of time. This would include the number of sessions, the schedule and the duration of the intervention. If the studies included incorporated at least one aspect of this item (number of session, schedule, duration) then they were marked as included. The study by Aspoas and Amod (2014) did not include any aspects of this item within the article, all other studies included some aspects of this item. The Aspoas and Amod (2014) article was a qualitative study designed to understand the caregiver's experiences of the intervention, not how it was implemented or how effective the intervention. It is however, still highly suggested that when reporting an intervention a full description of the duration of the intervention be described in order to fully understand and replicate the intervention (Hoffmann et al., 2014).

Item 9 addresses whether or not the intervention was tailored. This refers to whether or not it was planned for the intervention to be personalized, titrated, or adapted. In addition, authors should describe what, why, when, and how the interventions were tailored (Hoffmann et al., 2014). Nine of the studies included in this review utilized interventions planned to be personalized or adapted for the participants involved. Ten of the interventions reviewed did not appear to involve tailoring or adaptations to the interventions. All of the articles that identified the tailoring or adapting of interventions

as a part of the description adapted the intervention based on the specific needs of the clients. The interventions were personalized so that they were tailored to the client's needs, skills and strengths (Canfield et al., 2015; Cassidy et al., 2011; Heinicke et al., 1999; Kemp et al., 2011; Knoche et al., 2012; Mayers et al., 2008; Murphy et al., 2015; Olds, 2008; Svanberg et al., 2010). Although nine of the articles included information regarding intervention tailoring, it is suggested that more specific information regarding what, why, when and how be included in the intervention reporting. Specifically what was tailored and how was not addressed in detail, therefore it would be difficult to replicate this aspect of the interventions.

Item 10 addresses any modifications that occurred during the course of the intervention study. This is often seen in early studies and it is important to describe what the modification was and why it was needed. Modifications may happen due to various circumstances and by reporting these modifications and why they occurred, time may be saved in future implementations of the intervention (Hoffmann et al., 2014). Only two of the included studies describe any form of modification to the intervention (Huebner, 2002b; Murphy et al., 2015). It is suggested that more information on why, what and how the modifications were made be discussed.

Items 11 and 12 both identify how well the adherence or fidelity of the interventions was assessed for pre-implementation and during and after implementation. Addressing the fidelity before implementation (item 11) might include things like training the interventionist to ensure that the intervention is implemented the way it was intended, enhancing internal validity. If the intervention fidelity or adherence was assessed during and after implementation (item 12) it may refer to whether or not the

interventions were delivered as planned, and how mediators may have affected outcomes. Studies that assessed any aspect of pre or post intervention fidelity or adherence were identified as including items 11 and 12. All studies reviewed addressed at least one aspect of pre and post fidelity or adherence. It is important that fidelity be addressed, but equally important that the researchers also describe how it was done, and by whom.

Establishing characteristics of interventions: The following discussion is based on specific intervention characteristics. The researcher identified the characteristics using the TIDieR checklist. The researcher then configured the information derived from the included studies in this review. This included identifying characteristics about the caregivers, children, and interventionists involved in the studies, the methods of delivery of the intervention (i.e. fact-to-face, phone calls, internet), provided as a group or individually, location of intervention implementation, the duration and dose of the intervention, and whether or not interventions were adapted or personalized to the participants involved.

Although most of the interventionists titles falling under the mental health professional category (psychologist, counselor, therapist, or social worker) the single most prevalent title given to the interventionists is nurse, however not by an overwhelming amount or majority. Based on this information no suggestion is made regarding who implements the intervention. However, regarding effective intervention reporting it is recommended that for each interventionist (nurse, psychologists and so on) their expertise, background, and special qualifications or any training necessary to implement the intervention be described (Hoffmann et al., 2014).

All of the eighteen articles describe the caregiver title (i.e., mother, father, caregiver or parent) involved in the interventions. The vast majority of articles (n=15) identify the mother as the caregiver involved in the intervention. Only one article (Knoche et al., 2012) identified a small majority of fathers (5%) specifically involved in the intervention. Some research has been done regarding father involvement, specifically regarding play and how it is associated with better child relationships and emotional regulation (Roggman, Boyce, Cook, Christiansen, & Jones, 2004). Research on attachment also suggests that the support of fathers to their children is critical in the development of secure attachment in childhood (Grossmann, 2002). However, as evidenced in this review, most of the research focused on improving attachment relationships and behaviors such as parental sensitivity with involvement primarily directed to mothers (Roggman et al., 2004). It is suggested that the reasoning for this be explored in further investigation of these types of interventions, and that interventions involving both parents, or targeting fathers be designed.

In three studies (Hans et al., 2013; Kemp et al., 2011; Olds, 2008), the mothers received the intervention both prenatally and postnatally. In Olds (2008), the authors suggest programs that engage mothers during pregnancy may enhance the effectiveness of the intervention by supporting positive parenting through specialized focus, starting prenatally at the very beginning of the mother-infant relationship. In study by Kemp et al. (2011), all women received prenatal care, and the results showed that mothers assessed prenatally as having psychosocial distress benefited from the intervention. However, the description about what took place during the intervention for the intervention group that received prenatal visits is extremely limited. The only information given is that all

mothers, in both the intervention and comparison group received usual prenatal care, and that 82% of the women in the intervention group received prenatal visits. More information is needed regarding the procedures of interventions that incorporate prenatal visits as an aspect of the intervention.

All eighteen studies included interventions that utilized face-to-face implementation. However in the study by Canfield et al. (2015), the authors compared two interventions and a control group. The Video Interaction Project (VIP) utilizes face-to-face delivery where the interventionist meets with the families one-on-one. In the Building Blocks intervention, mailed information and learning materials are mailed monthly to the family from the child's birth until they are 36 months old. Outcomes of this study demonstrate that lower physical punishment scores identified among the VIP families were mediated through increases in responsive parenting and decreases in maternal depression as compared to the BB intervention (Canfield et al., 2015). Although this only represents one study that utilizes mail as the mode of intervention delivery, it is emerging evidence that face-to-face interventions may be more effective.

Six studies utilized group-implemented interventions, of those six, three utilized both group and individually implemented interventions. In the study by Aspoas and Amod (2014), aspects of the group delivery model were both positive and negative. Caregivers in the intervention expressed they were unaware they were not the only ones experiencing problems, and that was comforting to know that they were not alone. However, due to the group delivery mode, they were scared of what others might think, and indicated that the individuals received intervention were judged. There was little information in the included studies as to why the group model was chosen as a delivery

mode. In order to provide effective intervention reporting, and to better understand why some interventions use group, individual, or a combination of delivery model, more information is needed on the reasoning behind the selected delivery of interventions.

Establishing how interventions account for cultural characteristics.

Very little information is discussed regarding the cultural characteristics of the participants involved, and how those characteristics may change from the Western definitions of secure attachment in the studies included in this review. The cultural characteristics that are identified and discussed include language, and the cultural context or characteristics of the caregivers involved in the study. Although, Huebner (2002) and Murphy et al. (2015) discuss cultural context regarding the caregivers, they do not describe what the characteristics were, and how they effected the intervention. In the study by Aspoas and Amod (2014), cultural context is recognized and described as a blending of Western psychoanalytic thinking with African indigenous knowledge. The authors explain that this is important because the concept of self, contrasts sharply in Western cultures compared to the South African culture addressed in this study. The universality of attachment definitions has been questioned suggesting that the core concepts of attachment theory and the subsequent interventions may not cross cultural lines (Bakermans-Kranenburg et al., 2004; McKenna, 2009; Rothbaum et al., 2000). Therefore, although some characteristics of cultural context are described, such as language and differences in definitions of self, more information is needed to fully account for the cultural characteristics of the interventions and the participants involved in them in order to adequately assess, and implement interventions.

Conclusion

As there was little information regarding the materials, and procedures of the interventions involved in the included studies, it was difficult to pull out specific characteristics of the interventions included in this review. These characteristics might have included specific materials and information that the participants received during the intervention. For example, in the study by Cicchetti et al. (2006), two interventions are described: Infant-parent psychotherapy (IPP), and psychoeducational parenting intervention (PPI). The authors derived the IPP intervention from Freiberg, Adelson, and Shapiro, (1975, as cited in Cicchetti, et al., 2006) in which home visits engage the mother and therapist in joint observation of the infant. The article also states that the therapist offered respect, empathetic concern, and unfailing positive regard. This however, is an extremely vague description of what specifically went on during the home visits. How did the therapist engage the mother? Did they discuss specific observations? Did the therapist model or demonstrate any parenting techniques? If so, what were the techniques and how?

Information regarding the procedures of the interventions including how the interventionist provided information or modeled specific techniques used in the interventions was extremely limited. Based on the information extracted from the studies included in this review a few common themes regarding the caregivers, delivery of the intervention (face-to-face), how the intervention was provided (individual families/dyads or groups), and where the interventions took place were compiled.

First, the vast majority of caregivers involved in the included studies were mothers. It is suggested that more research be done to address the fathers, and both

parents in these types of interventions. Secondly, all of the studies in this review utilized an intervention that was implemented in person, or face-to-face. Although there is little information as to specifically why this mode of delivery was chosen, the face-to-face model was more effective in the Canfield et al. (2015) study suggesting that face-to-face delivery may be more effective than delivery by mail. The tailoring and personalization of the interventions based on the needs, strengths and skills of the participants in the included studies is most likely made possible due to the in person, face-to-face delivery. It appears that this is an effective mode of intervention delivery although it is suggested that the reasoning behind this method of delivery be addressed in more depth through stronger and consistent intervention reporting so readers may understand why this method was chosen, and why it is or is not effective.

Thirdly, the majority of the interventions included in this review (n=14) were provided in an individual family/dyad setting. Little information is given regarding why these settings were chosen however the Aspoas and Amod (2014) study does discuss positive and negative aspects regarding a group setting. More information regarding why these settings were chosen is needed in order to fully understand how this may affect the effectiveness of interventions. Lastly, the majority of the interventions (n=17) took place in the homes of the participants. Information regarding why this occurred was limited, but in the study by Aspoas and Amod (2014), the group intervention takes place in a clinic. The participants in this study express their need for the interventions to come to them, and meet them where they are at, suggesting that it would be easier to participate if the interventions were implemented in their homes, on an individual basis. This suggests that in home, individual interventions might be more effective.

A few common themes were recognized in the included studies regarding the participants, location and delivery of the interventions, and tailoring of the interventions. However, there was very little information addressing the cultural characteristics of the participants and how those characteristics may change the definitions of attachment and subsequent interventions involving attachment relationships. It is highly suggested that more research be done on this subject. It is also strongly suggested that researchers address and discuss the cultural characteristics of the participants involved in their studies and if and how those interventions adhere to those cultural characteristics. Overall, it is concluded that more information and detail is required regarding intervention reporting, especially with the procedures of the intervention and the details of the materials. This information is highly important to the accurate and consistent replication of effective interventions.

Overall, the intervention reporting was quite limited for the reviewed studies, making it difficult to go beyond generalizations in the characteristics of interventions that improve child-caregiver attachment for children under 3 years of age and their caregivers who live in poverty. Poor intervention reporting could be due to limited awareness or enforcement of intervention reporting guidelines that have emerged in the literature over the last six years. This systematic review included studies published over a span of almost 20 years (1996-2016), the majority of which (61%) were published after the emergence of the first reporting guidelines (Altman & Simera, 2016). The TIDieR guidelines are the most recent modifications of the CONSORT reporting guidelines (<http://www.consort-statement.org/>) and require considerably more detail of the intervention than is currently being reported in the literature. Only 11% of studies

reviewed were published after the TIDieR checklist was published in March 2014 (Hoffmann et al., 2014). Since 89% of the articles reviewed for this study were published prior to the TIDier checklist, it is not surprising that the intervention reporting is lacking. However, 61% of the reviewed studies were published since the release of the CONSORT statement in 2010, suggesting the publication details may have needed more emphasis on intervention reporting as a prerequisite to publication. Nevertheless, it was still important to analyze and discuss the intervention reporting for the included studies in this review, in attempt to discover effective characteristics of the interventions.

It is apparent that early childhood interventions may be most effective in enhancing quality of life and increasing developmental and educational perspectives. The concept of early neurological sensitivity, combined with environmental conditions such as living in poverty, personal experiences such as trauma and maltreatment, and the possible irreversible effects of those impacts on brain development in the first three years of life, promote the importance of early childhood interventions (Bakermans-Kranenburg et al., 2004; Center on the Developing Child, 2010; Farah et al., 2006; McEwen, 2007). It is important that the cultural characteristics of the participants involved, as well as how culture may change definitions of attachment, be acknowledged and implemented within interventions. It has been suggested that poverty be addressed and defined as a multidimensional entity including deprivations in health, education, material goods, food, and income (Dutta et al., 2011; Malik, 2014). Therefore, it is suggested interventions designed to enhance the quality of life of those living in poverty should incorporate a multidimensional, and culturally relevant approach.

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Appendix: Data Extraction Form

| Data To Be Extracted | Is Data Included ? Yes/No | Page # | Data Extracted: | Notes: |
|---|---|--------|-----------------|--------|
| 1. Intervention name or Title | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 2. Outcome Variable | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 3. Materials: List all materials used in intervention? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 4. Procedures: Describe each of the procedures, or processes of the intervention? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 5. Who implemented the intervention? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 6. Participants: describe the caregiver involved in the intervention? (mother, father, caregiver, or foster parent) | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 7. Participant: Describe the <u>child or children</u> in interventions. | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 8. How: Describe method of delivery? (i.e. | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |

| | | | | |
|---|---|--|--|--|
| face-to-face, internet, phone). | | | | |
| 9. How: Provided individually or as a group? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 10. Where: Describe the locations/s where the intervention occurred? Please include any necessary infrastructure or features. | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 11. How Much: Describe how many times the intervention was delivered? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 12. How much: how long the intervention lasted per session? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 13. When: Over what time period was the intervention delivered? (# of sessions/ dates, specific ages) | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 14. Adaptions or Personalizations? Was intervention planned to | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |

| | | | | | | |
|---|---|-----|--|-------------|---|---------------|
| adapted or personalized ? | | | | | | |
| 15. Cultural Characteristics: where any cultural characteristic addressed or identified within the study? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| 16. Modifications: Was the intervention modified during the duration of the study? How? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| 17. Outcomes: Was the intervention effective? How? Measures? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | Outcome | Measurement | Statistically Sig at .05 level: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No | Results show: |
| 18. Does the intervention include all items on the TIDieR checklist? Fill out attached TIDieR Checklist. | <input type="checkbox"/> Yes <input type="checkbox"/> No | N/A | List Items included: List Items not included: | | | |