The Role of Child Care in Supporting the Emotion Regulatory Needs of Maltreated Infants and Toddlers

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Abstract

Infants and toddlers who experience physical abuse and/or neglect are at a severe risk for disruptions to emotion regulation. Recent prevention and treatment efforts have highlighted center-based child care as an important setting for providing support to the needs of these children, as child care centers are already an existing point of entry for reaching high-risk families. Guided by ecological theory, this review draws on the maltreatment and child care literatures to consider the opportunity for child care centers, specifically teacher-child interactions within the classroom, to support the unique regulatory needs of maltreated infants and toddlers. Existing research on the effects of child care for children facing other types of risk, as well as research with maltreated preschool children, provides a foundation for considering the role child care may play for infants and toddlers, whose emotion regulation skills are just emerging. More research is needed regarding teachers' roles in facilitating effective emotional experiences in the classroom that meet the unique needs of maltreated children. Additionally, early childhood teacher training that focuses on infant/toddler mental health and a trauma-informed perspective of care, as well as structuring child care centers as communities of support for high risk families, all may aid child care centers in better serving this vulnerable population.

Keywords: maltreatment, infancy, emotion regulation, child care

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The maltreatment of young children by their parents represents the ultimate failure of the environment to provide children with the caregiving experiences necessary to promote healthy emotional development (Cicchetti, Toth, & Maughan, 2000). Maltreatment at any age can have a lasting impact on emotional wellbeing, however, the deleterious effect of abusive and neglectful parenting behaviors experienced during infancy and toddlerhood are particularly strong. Children who are victimized under the age of 5 show increased emotion dysregulation, externalizing and internalizing problems, increased anxiety and depression symptomology, and increased rates of academic failure as compared to children who are victimized later in childhood (Fantuzzo, Perlman, & Dobbins, 2011; Kaplow & Widom, 2007; Keiley, Howe, Dodge, Bates & Pettit, 2001; Kim & Cicchetti, 2010). Unfortunately, infants and toddlers are at highest risk for maltreatment compared to any other age group (U.S. Department of Health and Human Services [DHHS], 2015). To address the needs of victimized infants and toddlers, it is important to consider other caregiving relationships and settings that may provide support for the unique emotion regulatory difficulties these children may experience.

Recent prevention and treatment efforts have focused on center-based child care as one important setting for supporting the needs of maltreated children (e.g., Dinehart, Katz, Manfra, & Ullery, 2012). Center-based child care is an existing delivery system of services for many families, representing an "opportune point of entry" for providing support to this population (Daro & Dodge, 2009; Osofsky & Leiberman, 2011). Of infants and toddlers involved in the child welfare system (any level of investigation by child protective services), approximately 26-30% participate in center-based child care (Ward, Young Yoon, Atkins, Morris, Oldham &

Wathen, 2009). Under the federal Child Care and Development Block Grant, which provides funding to states for increasing access to child care services for low income families, the majority of states offer child care subsides to families investigated by child protective services and foster care families, often with less strict eligibility requirements (Minton, Durham, & Giannarelli, 2011), ensuring that an element of caregiving stability remains in these children's lives (Meloy & Phillips, 2012a). Early care and education programs such as Early Head Start (EHS), also give priority enrollment to children living in foster care, regardless of other eligibility requirements (U.S. DHHS, 1992). Such policies aim to increase victimized children's access to the stable environment child care offers; however, publicly-funded child care and welfare systems stem from different funding streams, leaving systems siloed and many high risk children in need of access to publicly-funded child care programs fail to receive services (Osofsky & Leiberman, 2011). This is unfortunate considering that the developmental goals of child care programs better align with the needs of maltreated infants and toddlers than some social services funded through child welfare systems (for a full review, see Meloy & Phillips, 2012b).

Given the plethora of evidence that supports quality child care as significant in promoting the socioemotional wellbeing of infants and toddlers in the general population (Burchinal, Howes, Pianta, Bryant, Early, Clifford, et al., 2008; Love, Harrison, Sagi-Schwartz, van IJzendoorn, Ross, Ungerer, et al., 2003; Love, Kisker, Ross, Constantine, Boller, Chazan-Cohen, et al., 2005; Peisner-Feinberg, Burchinal, Clifford, Culkin, Howes, Kagan, et al., 2001; Phillips & Lowenstein, 2011; Vandell, Belsky, Burchinal, Steinberg, Vandergrift, & NICHD Early Child Care Research Network, 2010; Vogel, Xue, Moiduddin, Carlson, & Kisker, 2010), with especially strong effects seen for those facing higher socioeconomic, demographic, and

temperamental risk (Pluess & Belsky, 2009; Votruba-Drzal, Coley, Maldonado- Carreño, Li-Grining, & Chase-Landsdale, 2010; Watamura, Phillips, Morrissey, McCartney, & Bub, 2011), it stands to reason that quality child care is positioned to serve as a developmental asset for maltreated children. Recent research has started to examine this potential link (e.g., Dinehart, Katz et al., 2012; Dinehart, Manfra, Katz, & Hartman, 2012; Kovan, Mishra, Susman-Stillman, Piescher, & Laliberte, 2014; Lipscomb, Pratt, Schmitt, Pears, & Kim, 2013; Lipscomb, Schmitt, Pratt, Acock, & Pears, 2014; Meloy & Phillips, 2012b), primarily focusing on preschool-age children. Given the unique emotion regulatory needs of infants and toddlers, and the exacerbated effects of maltreatment for this age group, it is important to examine the role child care may play in the emotional development of the youngest victimized children. Within this, it is critical to examine teacher caregiving quality as the mechanism that facilitates emotional development in child care (for a full review see Mortensen & Barnett, 2015), as well as how the caregiving needs of maltreated infants and toddlers may differ from the general population (e.g., Lipscomb et al., 2014).

To address these issues, this review presents a framework for conceptualizing teacher caregiving quality within center-based child care as a developmental asset for the unique emotion regulatory needs of maltreated infants and toddlers. Guided by ecological theory (e.g., Bronfenbrenner & Morris, 2006; Cicchetti, Toth, & Maughan, 2000), this review focuses on the process by which maltreatment undermines the emotion regulatory capabilities of infants and toddlers and how teacher caregiving may play a buffering role. This review also examines child care centers creating more effective caregiving environments for maltreated infants and toddlers with more specific teacher training, a trauma-informed perspective of care, and a community of caregiving support for parents. This review concludes with new directions for research that will

further elucidate the developmental processes facilitating the emotional wellbeing of maltreated infants and toddlers in child care.

1. The Scope of Infant/Toddler Maltreatment

Legal definitions of maltreatment vary by state, but the federal Child Abuse Prevention and Treatment Act (CAPTA), as amended by the CAPTA Reauthorization Act of 2010, defines maltreatment at a minimum as, “any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm,” including neglect, physical abuse, psychological maltreatment, and sexual abuse (U.S. DHHS, 2010). Annual data from the National Child Abuse and Neglect Data System (NCANDS), which collects state-level data on all children investigated by child protective services, suggests that infants and toddlers fare much worse than older children (U.S. DHHS, 2015). In 2013, children under age 3 had the highest rates of victimization, over a quarter of maltreatment victims were younger than 3, and approximately 21% percent of children living in foster care arrangements were under the age of 3 (U.S. DHHS, 2014; 2015). The estimated rate of victimization for children younger than 12 months is 23.1 per 1000, and approximately 11 per 1000 for toddlers ages 12 to 36 months (U.S. DHHS, 2015). Other alarming trends indicate that infants and toddlers experience the highest rates of recurrent maltreatment and, due to their physical size and high dependence on caregivers, suffer the highest rates of serious injury and abuse-related fatalities (Klein & Jones Harden, 2011). In 2013, 73.9% of all maltreatment related fatalities were children under age 3 (U.S. DHHS, 2015). Maltreatment is assumed to be vastly underreported (Sedlak & Ellis, 2014), thus the actual population of maltreated infants and toddlers is likely much larger than what is represented in official statistics. Research samples of

victimized children are typically comprised of children involved in child welfare (i.e., any level of investigation by child protective services), or children who have been removed from their biological homes and placed in non-parental or foster care.

A variety of parent, child, family, and contextual risk factors are associated with maltreatment; however, these variables are often interrelated, making it difficult to infer causality. Smoking during pregnancy, having multiple children in the home, young maternal age (< 20 years), unmarried marital status, low birth weight, and positive toxicology at birth are all risk factors for infant maltreatment (Williams, Tonmyr, Jack, Fallon, & MacMillan, 2011; Wu, Ma, Carter, Ariet, Feaver, Resnick et al., 2004; Zhou, Hallisey, & Freymann, 2006). Parental anger/hyperactivity and family conflict are strong predictors of physical abuse, and factors such as poor parent-child relationships, parental stress, parental self-esteem, and parental anger/hyperactivity are strong predictors of neglect (Stith, Liu, Davies, Boykin, Alder, Harris et al., 2009). Parental cognitive appraisal of challenging caregiving experiences stemming from infant characteristics (e.g., low Apgar scores, low birth weight, or prolonged crying) is also a risk for maltreatment (Bugental & Happaney, 2004; Reijneveld, Van der Wal, Brugman, & Sing, 2004), as is parental perception that the child is a problem (Stith et al., 2009). Maltreatment has high comorbidity with other stressful family issues such as domestic violence, parental drug or alcohol abuse, and economic hardship (U.S. DHHS, 2015; Slack, Berger, DuMont, Yang, Kim, Ehrhard-Dietzel et al., 2011; Williams et al., 2011; Wu et al., 2004; Zhou et al., 2006). Although associated, it is challenging to disentangle the direction of effect between socioeconomic disadvantage and maltreatment, as the risk factors associated with both are often interrelated (Drake & Jonson-Reid, 2014); importantly however, this means that many families at risk for maltreatment may also be eligible for or participating in existing public programs for

socioeconomically disadvantaged families, including child care subsidies, EHS, or other early care and education programs.

2. Theoretical Framework

Ecological models of human development (e.g., Bronfenbrenner & Morris, 2006; Cicchetti et al., 2000) provide a theoretical foundation for understanding the role of multiple caregivers in the development of infant/toddler emotion regulation, the deleterious effect of maltreatment, and the potential buffering impact of teacher caregiving in child care. Ecological models position children at the center of a series of nested systems, conceptualizing development as driven via children's regular interactions (i.e., *proximal processes*) within each system (Bronfenbrenner & Morris, 2006). From this perspective, parent-child proximal processes within the home *microsystem* (i.e., a proximal setting the child has direct contact with) shape the development of emotion regulation, with sensitive-responsive and synchronous parent-infant interactions associated with increased regulatory capabilities in toddlerhood (Kim & Kochanska, 2012; Bocknek, Brophy-Herb, & Banerjee, 2009). Given this perspective, maltreatment represents the failure of the environment to provide children with the types of proximal processes necessary for healthy development (Cicchetti et al., 2000). Instead, the dysfunctional parent-child proximal processes involved in abusive and neglectful caregiving environments facilitate dysregulated patterns of emotional responses and regulation (Cummings, Hennessy, Rabideau, & Cicchetti, 1994; Kim-Spoon, Cicchetti, & Rogosch, 2013; Maughan & Cicchetti, 2002).

Ecological models also consider protective factors and buffers elsewhere in the environment that may offset some of the negative effects of maltreatment on developmental outcomes (Cicchetti et al., 2000). Teacher-child proximal processes within the child care microsystem can be conceptualized as another important driver of emotional development, and

are often considered the most powerful component of child care that affects change in children's outcomes (Hamre, 2014; Phillips & Lowenstein, 2011; Mortensen & Barnett, 2015). The quality of these interactions are critical, especially for infants and toddlers who may face "double jeopardy" if both home and child care caregiving environments are of low quality (e.g., Watamura et al., 2011). High quality child care, especially high quality teacher-child interactions, may have the potential to serve as developmental assets for maltreated infants and toddlers. Furthermore, interactions between the family and child care microsystems (i.e., *mesosystem*) also impact children's wellbeing (McCartney, 2006). More distal forms of support for the emotional wellbeing of these children are created through efforts to build communities of caregiving support for parents within child care centers (Daro & Dodge, 2009).

Guided by an ecological perspective, the remaining sections of this review examine infant/toddler emotion regulation as it develops within the context of the parental caregiving relationship, and the mechanisms by which the toxic proximal processes of maltreatment undermine this development. The role of child care, specifically teacher caregiving quality, is then considered as a potential developmental asset for these children, including suggestions for improving the quality of proximal processes in this setting, policies that promote collaboration between child welfare and child care systems, and new directions for research in this area.

3. Maltreatment and Emotion Regulation

3.1. Infant/Toddler Emotion Regulation

Emotion regulation includes the processes and strategies used to manage experiences of emotional arousal and the behavioral expression of emotions to function effectively with others (Calkins, 1994; Eisenberg, Hofer, & Vaughan, 2006). The regulatory skills acquired during infancy and toddlerhood facilitate the development of social competence, emotional

understanding, peer relations, and empathy in early childhood (Blair, Berry, & Friedman, 2012; Calkins & Hill, 2006; Eisenberg et al., 2006; Liew, 2012), as well as contribute to effective engagement with teachers and peers in the classroom, affecting social and academic success throughout elementary school (Liew, 2012; Ursache et al., 2012).

Human infants have few cognitive, behavioral, or physical capacities to regulate their own emotional arousal, making them extremely dependent on external forms of regulation from caregivers (Sroufe, 1995). Thus, a major developmental task of infancy and toddlerhood is the transition from external forms of emotion regulation to more internalized control (Calkins & Hill, 2006). Toddlers can start to use their new cognitive, behavioral, and physical capabilities to develop strategies for managing their own emotions, such as self-soothing with the help of a special toy, or seeking physical proximity with a primary attachment figure. Parents play a critical role in helping infants internalize regulatory control by consistently meeting their physical needs (e.g., feeding, diapering, pacifiers) as well as meeting their emotional needs with sensitive behaviors such as soothing, rocking, and swaddling. Parents scaffold toddlers' developing emotional responses by encouraging them verbally (e.g., labeling and talking about emotions) and helping them enact effective behavioral responses such as redirection or finding a special toy (Calkins, 1994; Calkins & Hill, 2006).

3.2. The Emotional Sequelae of Maltreatment

Developmental processes by which young children transition from external to internal forms of emotion regulation are subject to great individual variation depending on the quality of the caregiving environment (Calkins & Hill, 2006; Cicchetti & Toth, 2005). Maltreatment of infants and toddlers has a deleterious effect on the development of the cognitive and behavioral strategies used to regulate emotions in part because of the dysfunctional parent-child interactions

occurring in abusive and/or neglectful situations. Given the nature of proximal processes, emotion regulation is the product of the reciprocal interactions between children's own developing regulatory capacities and parents' caregiving behaviors (Calkins, 1994). From this perspective, maltreatment creates toxic relational exchanges and fails to support healthy development (Cicchetti et al., 2000), with the effects of maltreatment symptomatic of dysfunctional parent-child interactions and extending beyond the physical consequences of abuse and neglect (Luke & Banerjee, 2013; Wolfe, 1987). Chaotic, unpredictable, and/or unresponsive environments that are characteristic of maltreating homes further exacerbate the direct physical and emotional harm of maltreatment, culminating in toxic levels of stress (e.g., Shonkoff, Garner, Seigel, Dobbins, Earls et al., 2012). With no sensitive-responsive caregiver to mitigate this stress, maltreated infants and toddlers are left exposed to overwhelming emotional arousal, which risks damaging developing physiological and psychological processes (National Scientific Council on the Developing Child, 2005/2014).

Empirical research has focused on multiple pathways to explain the processes by which maltreatment undermines emotion regulation. One process is through disruptions to the developing stress-response system. For example, physiological measures show that maltreatment during infancy and early childhood disrupts the body's hormonal response to stress by altering the developing hypothalamic-pituitary-adrenal (HPA) system (for a full review, see Tarullo & Gunnar, 2006). In cases of maltreatment, elevated levels of cortisol and other stress hormones flood and disrupt the developing HPA system by altering basal HPA activity and reactivity (Tarullo & Gunnar, 2006). For infants younger than 12 months, even relatively "subtle" forms of maltreatment, such as physical punishment or emotional withdrawal by mothers, are associated with elevated levels of cortisol and disrupted HPA functioning, setting

the foundation for regulatory difficulties in the future (Bugental, Martorell, & Barraza, 2003). Maltreatment under the age of 3 is also associated with compromised neuropsychological functioning in preschool in terms of sensorimotor, visuospatial processing, memory, and language abilities (Pears & Fisher, 2005).

Another process by which maltreatment undermines healthy development is through emotion dysregulation. Compared to their nonmaltreated peers, maltreated children respond to interpersonal stress with increased aggression and dysregulated patterns of emotional response and regulation, hindering children's abilities to attend to interpersonal emotional cues in the environment (Cummings et al., 1994; Kim-Spoon et al., 2013; Luke & Banerjee, 2013; Maughan & Cicchetti, 2002). For example, in a sample of school-age children, Kim-Spoon and colleagues (2013) found an enduring effect of maltreatment (with approximately 75% of the sample victimized before age 3) on teacher-reported increased emotion lability and negativity (i.e., accelerated arousal, reactivity, and expression of negative emotions in response to emotion-eliciting stimuli) across ages 7, 8 and 9, which then contributed to poor emotion regulation at future time points. Cummings and colleagues (1994) observed that physically abused boys experienced heightened arousal and aggressiveness in response to simulated inter-adult anger directed towards their mothers as compared to non-abused boys. Using the same simulated anger procedure, Maughan and Cicchetti (2002) observed that maltreated children ages 4 to 6 with documented reports of physical abuse and/or neglect, displayed more dysregulated patterns of emotion regulation. Dysregulation presented itself as either under-regulation of reactivity and disorganized positive and negative emotionality, or over-controlled regulation and unresponsive emotionality (in contrast, nonmaltreated peers were more likely demonstrate appropriate concern and well modulated levels of negative affect). In addition to regulatory issues, children with a

history of maltreatment also struggle with other emotional processing abilities such as emotional understanding, emotion recognition, perspective taking, false belief understanding, and attribution bias (for a full review, see Luke & Banerjee, 2013).

Disrupted emotion regulation processes may also be one mechanism by which maltreatment leads to future socioemotional maladjustment and psychopathology. When tested empirically, difficulties with emotion regulation mediate associations between maltreatment and internalizing and externalizing symptoms, peer acceptance and rejection, rates of bullying and victimization in childhood (Kim & Cicchetti, 2010; Kim-Spoon et al., 2013; Maughan & Cicchetti, 2002; Teisl & Cicchetti, 2007; Shields & Cicchetti, 2001), and symptoms of post-traumatic stress disorder (PTSD) in adults (Burns, Jackson, & Harding, 2010).

In sum, this body of research describes the deleterious effect toxic caregiving experiences have on the developing regulatory processes of young children, undermining future socioemotional wellbeing and mental health. Given an ecological perspective, other caregiving contexts that offer stability and sensitive caregiving, meeting the emotional needs of victimized infants and toddlers, may buffer some of the negative effects of maltreatment.

4. The Role of Child Care

High quality child care can be conceptualized as a developmental asset, in which the proximal processes between teachers and children act as a possible compensatory mechanism for the regulatory difficulties of victimized infants and toddlers. Victimized infants and toddlers tend to receive few mental health services in response to maltreatment, or services tend to be disproportionately allocated to older children (Leslie, Landsverk, Ezzet-Lofstrom, Tschann, Slymen, & Garland, 2000; Stahmer, Leslie, Hurlburt, Barth, Webb, Landsverk et al., 2005), making existing settings of support, such as child care, critical. Research that examines the

effects of child care (and specifically teacher caregiving quality) on the emotion regulation development of victimized infants and toddlers is limited; however, evidence from child care research in the general population, as well as research with samples of maltreated preschool children, provides a promising foundation for moving forward with research on victimized infants and toddlers.

4.1. Importance of High Quality Child Care for Infants and Toddlers

A great body of evidence supports quality child care as an important developmental context for children (Burchinal et al., 2008; Love et al., 2003; Love et al., 2005; Peisner-Feinberg et al., 2001; Phillips & Lowenstein, 2011; Vandell et al., 2010; Vogel et al., 2010). Quality programs create developmentally appropriate environments that are in tune with children's needs by implementing a variety of *structural* (e.g., small class size, low teacher child ratios, staff training) and *process* (e.g., sensitive and responsive teacher-child interactions) program components. Process quality is the most critical mechanism for supporting emotional development in this setting (Hamre, 2014; Mortensen & Barnett, 2015; Phillips & Lowenstein, 2011).

Concurrent and longitudinal examinations of the effects of teacher caregiving quality have found that caregiving characterized by sensitive, responsive, and positive behaviors is associated with a variety of indicators of socioemotional wellbeing such as higher emotional engagement, social competence (Burchinal et al., 2008; Love et al., 2005), social development in elementary school (Peisner-Feinberg et al., 2001), and reduced behavior problems in adolescence (Vandell et al., 2010). Evidence for the effect of teacher caregiving quality specifically for the development of emotion regulation is limited (Mortensen & Barnett, 2015); however, evidence in related areas suggests that teachers play a critical role in these processes. Teacher-child

relationship quality and teacher-child attachment are associated with fluctuations in children's cortisol levels, having potential implications for developing regulatory systems (Lisonbee, Mize, Payne, & Granger, 2008; Badanes, Dmitrieva, & Watamura, 2012). Teachers also promote emotion regulation in infants and toddlers through synchronous interactions such as warm limit setting, watching for infant cues and bids for emotional reactions, using verbal reinforcement to encourage positive emotional expression, and providing physical comfort, empathy, or using redirection to help children work through negative emotions (Ahn, 2005; Feldman & Klein, 2003; Lee, 2006).

Additionally, evidence suggests that there is significant variation in the effects of child care depending on early adverse experiences, with children facing the most risk typically showing the greatest gains when exposed to high-quality child care (including sensitive and responsive teacher-child interaction). For example, Watamura and colleagues (2011) highlighted the "double jeopardy" young children face when they experience both home and child care settings that are of poor quality (i.e., marked by few learning opportunities and unresponsive care) in terms of socioemotional adjustment across early childhood; however, children in low quality home settings and high quality child care settings showed improved outcomes. Similarly, child care program effects have been shown as particularly strong for children with mothers who have low levels of education (Peisner-Feinberg et al., 2001), socioeconomically disadvantaged boys, and African American children (Vogel et al., 2010; Votruba-Drzal et al., 2010). Children at risk for poor socioemotional outcomes given biological dispositions, such as a highly reactive temperament, also show evidence of greater socioemotional gains when in high quality child care environments (Phillips, Crowell, Sussman, Gunnar, Fox, Hane, et al., 2012; Pluess & Belsky, 2009).

As the research continues to develop in this area, special consideration needs to be paid to maltreated infants and toddlers. The cumulative risk factors these children experience may position them to make great gains in quality child care that provides them with a stable caregiving environment and sensitive-responsive caregivers; however, given the significant threats to emotion regulation development these children face, research with non-maltreated samples may be limited in application, and these children may have additional developmental needs that could be better addressed in this context.

4.2 Emerging Evidence with Victimized Preschoolers

Little research has empirically tested the effects of child care on the development of victimized infants and toddlers; however, emerging research with samples of preschool children points towards the promising role of child care programs in improving outcomes for these children. For example, for children living in non-parental and foster care arrangements, Head Start and other school readiness interventions have been shown effective at improving teacher-child relationships, reducing behavior problems, and improving emotion regulation strategies that help children work effectively in the classroom (Lipscomb et al., 2013; Pears, Fisher, Kim, Bruce, Healey, & Yoerger, 2013). Close teacher-child relationships may also be especially significant in reducing externalizing problems for these children, as compared to their low-income, non-maltreated peers (Lipscomb et al., 2014).

Victimized children make developmental gains within quality preschool settings, but still lag behind their non-maltreated peers, pointing to the limits of traditional early education settings in providing the types of therapeutic experiences necessary for these children. For example, Dinehart, Manfra and colleagues (2012) examined the connection between preschool accreditation status (e.g., accredited by an organization such as the National Association for the

Education of Young Children, or Accredited Professional Preschool Learning Environment) and the developmental outcomes of 3 and 4-year-old children in the child welfare system receiving child care subsidies to attend community-based preschool programs. This sample was comprised of children involved in child welfare services at any level, including children living with biological parents, relatives, or in foster care. Accreditation status was associated with increased language, cognitive, and motor outcomes for children in child welfare, as compared to non-victimized children in the same programs; however, performance at the end of preschool was still worse overall compared to their peers. Further, children in child welfare were less likely to attend accredited centers. Similarly, Kovan and colleagues (2014) found that despite attending high quality preschool (as indicated by a high rating with a state quality rating and improvement system), and showing developmental gains over time, low-income children in child welfare (including any child with an accepted report of maltreatment) had higher teacher ratings of aggression and anxiety/withdrawal at the end of preschool than their low-income peers not involved in child welfare.

Importantly, research also suggests that traditional operationalization of process quality may not be appropriate for children who are facing regulatory difficulties as sequelae of maltreatment. Lipscomb and colleagues (2014) examined composite scores of the Early Childhood Environmental Rating Scale (specifically items that assessed interactions, [ECERS]; Harms, Clifford, & Cryer, 1998) and Caregiver Interaction Scale (CIS; Arnett, 1989) in relation to preschool children's externalizing problems. The ECERS and CIS (two widely used measures of classroom quality) operationalize quality teacher-child interactions as sensitive, responsive, autonomy-granting, and emphasizing the use of gentle discipline and guidance (whereas harsh, directive, or permissive behaviors are operationalized as lower quality). In their study, increased

process quality (i.e., increased composite ECERS and CIS scores) was unrelated to externalizing problems for children living in parental care, but was associated with significant increases in externalizing problems for children living in non-parental and foster care arrangements. Researchers hypothesized that the emotional dysregulation these children face may require more targeted and structured teacher-child interactions to facilitate positive behavior development that is not captured in the ECERS and CIS. The child-centered, autonomy supporting behaviors captured in these measures, while creating a supportive caregiving environment overall, may not be the types of teacher behaviors that help children manage severe emotional dysregulation. In contrast, teacher-perceived closeness with individual children did operate as a protective factor for children living in non-parental care, further suggesting that proximal interactions between teachers and individual children may be more critical than global assessments of classroom process quality.

Taken together, emerging evidence with preschool children points towards the potential for high quality child care to serve as a developmental asset for maltreated children, but traditional high quality programs may be limited in effectiveness, with the possibility that maltreated children are in need of more structured support in managing regulatory difficulties in the classroom. Given the immaturity of young children's regulatory systems, it is critical to explore these processes with this age group to determine if current conceptualizations of high quality child care in infant/toddler classrooms contribute to positive regulatory development in the face of maltreatment. Their immature regulatory systems may make young infants more open to influence from other sensitive caregivers. Alternatively, the exacerbated effects of maltreatment at this age may lead to more challenges in ameliorating emotional wellbeing. Process quality for maltreated infants and toddlers, including the potential need for more

structured support from teachers to manage regulatory difficulties, needs to be determined along with the components of structural quality that help facilitate this (e.g., lower teacher-child ratios and smaller class sizes). Furthermore, special consideration must be paid to infants and toddlers living in foster care or non-parental settings. In addition to the toxic interactions that lead to removal, these children face the added stress of instability and separation from their primary attachment figures, which may contribute to variations in how teacher caregiving quality in a stable child care setting affects developing regulatory processes.

5. How Can Child Care Better Serve Maltreated Infants and Toddlers?

Literature from a variety of areas suggests how child care centers can serve as better developmental assets for the regulatory development of maltreated infants and toddlers. Suggestions such as enhanced teacher training, integration of a trauma-informed perspective of care, structuring child care as a community of support for parents, and supporting policies that encourage collaboration across systems can better position child care within a coordinated network of settings and professionals aiding maltreated infants and toddlers (Daro & Benedetti, 2014; Osofsky & Leiberman, 2011). Utilizing a community approach to maltreatment prevention has the added benefit of reaching a wide array of families, not just those already identified by the child welfare system (Daro & Dodge, 2009).

5.1. Early Childhood Teacher Training

Early childhood teachers are tasked with the primary responsibility of promoting the educational needs of young children, of which scaffolding children's socioemotional reactions is a critical component. To best meet early education goals, it is important that teachers have an understanding behind the unique socioemotional reactions maltreated infants and toddlers may present in the classroom. In terms of teacher training, areas of need include increased teacher

training regarding the physiological and psychological mechanisms that underlie the emotional sequelae of maltreatment (including training in managing their own feelings of frustration in response to challenging emotional reactions from maltreated infants and toddlers), as well as increased training in communicating with child welfare systems to have a better understanding of the unique circumstances children in their care are facing.

As reviewed earlier, emotional sequelae of maltreatment may include disruptions to the developing stress-response system, neuropsychological impairment, dysregulated patterns of emotional responses and regulation, as well as altered emotional processing (Tarullo & Gunnar, 2006; Pears & Fisher, 2005; Maughan & Cicchetti, 2002; Luke & Banerjee, 2013). As a result, maltreated infants and toddlers may exhibit a variety of intense emotions and atypical behaviors in the classroom, posing distinct caregiving difficulties for teachers. Teachers, especially those working with high-risk families, should have a thorough understanding of the physiological and psychological mechanisms underlying the emotions and behaviors infants and toddlers may exhibit as a result of maltreatment. Having this understanding may help them facilitate developmentally appropriate responses by limiting teachers' own feelings of frustration that arise from stressful interactions, including being mindful of their own emotional responses (Zindler, Hogan, & Graham, 2010). Unfortunately, there is little empirical research that evaluates the preparedness of child care teachers and staff to provide quality care to this population (Dinehart, Katz et al., 2012). Moreover, child care teachers and staff report frustrations in working with child welfare systems in terms of adequate communication regarding maltreated children's unique developmental needs, limiting the ability to provide the best care possible (Ward, Young Yoon, Atkins, Morris, Oldham, & Wathen, 2009). In a series of focus groups, professionals in educational and child welfare settings identified ineffective and limited communication, role

uncertainty, and complexity of behavioral health needs of children as the major barriers for collaboration across systems (Noonan, Matone, Zlotnik, Hernandez-Mekonnen, Watts, Rubin et al., 2012).

Lack of information for teachers regarding the specific developmental needs of maltreated infants and toddlers may mistakenly lead to inappropriate responses to emotion dysregulation; however, a larger challenge that must first be addressed is determining the exact nature of developmentally appropriate practices for victimized infants and toddlers, and how these practices may differ from traditional early education best practices. As reviewed by Dinehart, Katz and colleagues (2012), a variety of early education curricula include young children's socioemotional health as a major program component (e.g., Incredible Years, PATHS); however, emerging evidence suggests that traditional developmentally appropriate practices for preschool children (as measured by widely-used indicators of process quality such as the ECERS and CIS) may not provide the direct, targeted support maltreated children need to support their regulatory development (e.g., Lipscomb et al., 2014). As research moves forward in this area, there is a great need to understand how these processes are unique to teacher-child interactions in infant/toddler child care, given the specific regulatory needs of young children, and how teachers can adapt their caregiving practices to best serve these children.

5.2. Trauma-Informed Care

An infant mental health perspective of maltreatment conceptualizes abuse and neglect as trauma, meaning "an unanticipated exceptional event that is powerful and dangerous in which a feeling of helplessness overwhelms the child's capacity to cope" (Zindler et al., 2010, p. 7). From this perspective, life-long mental health begins in infancy and traumatic environmental experiences place infants and toddlers at risk for a variety of mental health problems. The

integration of a trauma-informed perspective of care within child care may be beneficial, as child care providers often lack training in the specialized mental health needs of infants and toddlers who have experienced trauma (Dinehart, Katz et al., 2012; Osofsky & Leiberman, 2011; Zindler et al., 2010). Zindler and colleagues (2010) describe that trauma-informed care must emanate from sincere validation of the trauma associated with losing the security of a primary attachment figure. From this perspective, intense behaviors and emotions children exhibit are understood as symptomatic of coping with trauma; teachers then use their established sensitive caregiving relationship as a buffer to prevent negative emotions and behaviors from accelerating. A trauma-informed perspective may provide teachers with more detailed and comprehensive strategies for managing regulatory difficulties, and understanding their role in these processes. Additionally, it will be important to consider how these perspectives fit with the previously mentioned emerging research on unique developmentally appropriate process quality for this population of children.

While this perspective may provide an important new dimension to early childhood teacher training, it is also necessary to recognize the limits of child care programs in providing the advanced-level mental health care or specialized therapeutic environments children may require, as these services are likely beyond the scope of what traditional programs are designed to offer (Kovan et al., 2014). One solution to building a coordinated system of care for victimized infants and toddlers is the incorporation of specialized early intervention services within child care to ensure that children are provided with mental health services as needed (Daro & Benedetti, 2014; Kovan et al., 2014). Osofsky and Leiberman (2011) stress that one major barrier in creating coordinated systems of care for victimized children is the severe lag time between identification of needs and receiving services. As an important caregiving setting for many children and families, child care centers are an existing point of entry for identifying

children in need of psychological intervention with mental health professionals and greater integration with the infant mental health system (Osofsky & Leiberman, 2011). Another strategy includes providing mental health consultations to teachers and staff. Mental health consultation services that help adults in the center understand and develop strategies for addressing stressful and challenging behaviors may increase staff self-efficacy and confidence, reduce job-related stress and staff turnover, as well as contribute to a higher quality educational environment (Brennan et al., 2008).

5.3. Creating a Community of Support

In addition to working with children directly, child care centers are poised to serve as sources of support for families involved in child welfare or are high risk for maltreatment, extending their role beyond basic child care services (Jones Harden, Monahan, & Yoches, 2012). Given an ecological perspective, family-child care partnerships are a more distal form of support for the regulatory difficulties victimized children incur: supportive caregiving partnerships between teachers, staff, and parents (i.e., *mesosystem* influence) trickle down to parent-child proximal processes, with the aim of reducing maltreatment. Improving parent-child interaction quality has been a long-standing goal of many center- and home-based early care and education programs for sociodemographic high-risk families. These programs have demonstrated the potential for altering parent-child interactions in the context of early care and education with success in improving positive parenting behaviors, child engagement, and home learning environments, as well as reduced spanking and harsh discipline practices (Kelbanov & Brooks-Gunn, 2008; Love et al., 2005; Lee, Zhai, Brooks-Gunn, Han, & Waldfogel, 2014). Home-visiting programs such as Nurse Family Partnership and Healthy Families America have demonstrated reductions in maltreatment, with major components of both programs including a

focus on parental knowledge of child development, reading infant cues, and responding in ways that facilitate socioemotional development (Avellar, Paulsell, Sama-Miller, & Del Grosso, 2012). Few center-based programs have been empirically tested as preventative interventions for maltreatment specifically (for a meta-analysis on this topic see Reynolds et al., 2009), but evidence from two-generation child care programs such as Early Head Start (Green, Ayoub, Bartlett, Von Ende, Furrer, Chazan-Cohen et al., 2014; Love et al., 2005) and Chicago Child-Parent Centers (Reynolds & Robertson, 2003; Mersky, Topitzes, & Reynolds, 2011) points towards the potential for reducing child maltreatment in a center-based context by integrating family support services within child care.

Early Head Start (EHS), a federally funded early care and education program, provides child care and family services to socioeconomically disadvantaged families prenatally until age 3 (Love et al., 2005). In a retrospective examination of child welfare data for a subsample of participants from the Early Head Start Research and Evaluation Project (EHSRE; a nation-wide randomized controlled trial of EHS programs), Green and colleagues (2014) found that, as compared to families who did not receive EHS services, EHS families who participated in home-based, center-based, mixed services had significantly lower odds of a child welfare encounter when children were ages 5 to 9, and had significantly fewer encounters overall from age 5 and older. EHS children had significantly fewer reports of physical and sexual abuse; however, rates of neglect were significantly higher. Researchers hypothesized a “surveillance” effect, meaning that children in EHS were more closely monitored by mandated child reporters than the control children, so neglect was less likely to go unnoticed (Green et al., 2014). For preschool children, Chicago Child-Parent Centers (CPC) is one of the only center-based programs designed with the specific aim of reducing maltreatment (Reynolds, Mathieson, & Topitzes, 2009). CPC programs

provide preschool and family support services to low-income children ages 3 to 5, and extends family support services until second grade. Parents participate in a variety of support services in parent-specific resource rooms at school, receive assistance with parenting and vocational skills, and build social support with staff, teachers, and other parents. Empirical evaluation of the program has found that extensive CPC participation (i.e., 4 to 6 years) starting in preschool is effective at reducing cumulative rates of maltreatment from ages 4 to 17, as measured by court petitions of maltreatment and Department of Child and Family Service (DCFS) reports (Reynolds & Robertson, 2003).

The key mechanisms in reducing maltreatment in these types of programs is supporting parents' capacities to effectively interact with their children, as well as building caregiver partnerships within the program. Although not empirically tested, researchers hypothesized that known EHS program impacts such as improved positive parenting practices, improvements to the maternal life course, and increased socioemotional competency in children at 36 months (Love et al., 2005), were the mechanisms by which reductions in maltreatment occurred (Green et al., 2014). For CPC programs, parent involvement, as well as school placement stability, were significant mediators of program effectiveness, indicating that parents who were actively involved in family support services at the school, without disruption due to changing schools, engaged in fewer maltreating behaviors (Reynolds & Robertson, 2003). More nuanced mediator models of CPC effectiveness have also demonstrated that parent involvement in family support services has a direct inverse association with child maltreatment from ages 4 to 17, as well as an indirect association via a reduction in child behavior problems in childhood (Mersky et al., 2011).

In contrast to child care interventions targeting high-risk families, the Strengthening Families Initiative (SFI), developed by the Center for the Study of Social Policy, is an evidence-informed prevention initiative designed to reach a wide range of children and families in child care programs (Harper Browne, 2014; Daro & Dodge, 2009). SFI operates from a strength-based perspective, focusing on cultivating resiliency within the family with the goal of minimizing the effects of toxic stress on children's developing systems. SFI provides child care centers with a framework for fostering five protective factors: parental resilience, social connections, knowledge of parenting and child development, concrete support in times of need, and child socioemotional competence (Daro & Dodge, 2009). Since 2003, 34 states have joined the SFI National Network, with state-level coordinators that assist with implementation by helping centers align their practices in a way that builds family strength in the five protective factors. Emerging empirical evidence suggests that SFI may improve quality care provided to children via improving quality training provided to staff, engaging program directors, and improving the organizational climate of the program (Douglass & Klerman, 2012).

In sum, child care programs may have the potential to reduce the likelihood of victimization with the incorporation of services that help parents engage in appropriate parenting behaviors, and improve their own lives, while fostering a community of support with other parents and staff. Or simply put: "creating environments that facilitate a parent's ability to do the right thing" (Daro & Dodge, 2009, p. 68). This community-oriented perspective of bringing together formal and informal support in all contexts that families engage with stands in contrast to the traditional thinking of targeting individual families for intervention (Daro & Dodge, 2009; Daro & Benedetti, 2014). Given the lack of research in this area, especially for infants and toddlers, there is a great need to further identify the pathways by which child care programs

reduce the likelihood of victimization, in order to strengthen program effects (Green et al., 2014). An important caveat to this is being mindful of the limits of child care; child care centers cannot provide all services to all families, especially to children who have experienced trauma; child care likely will never shield these children completely from the effects of maltreatment, but it can serve as a source of support that buffers some negative impacts (Daro & Benedetti, 2014).

6. New Directions

Recent efforts from the U.S. DHHS focus on building more coordinated systems of care by encouraging interagency collaboration between child care (including EHS) and the child welfare system, such as formally establishing joint screening and referral protocols to address family needs, joint referral protocols for child care subsidies and EHS services, and increased child care staff training to recognize the need for referrals to the child welfare system (U.S. DHHS 2011a, 2011b). Additionally, U.S. DHHS has provided funding opportunities for communities to build the infrastructure necessary to maximize high quality child care services for children under the age of 5 in foster care (U.S. DHHS, 2011c). As collaboration and research opportunities move forward in this area, the literature presented in this review identifies areas of research that should be included in these efforts to best understand how to support maltreated infants and toddlers within child care settings.

Most importantly, research is needed that specifically focuses on infants and toddlers. This population has the highest rates of victimization, and is the most vulnerable to the negative emotional sequelae of maltreatment, yet research that examines connections between child care experiences and maltreatment has primarily focused on preschool-aged children. First, more descriptive statistics are needed to understand child care participation for this age group, including infants and toddlers with different levels of involvement with the child welfare system,

such as reports of maltreatment, substantiated cases, and those living in non-parental or foster care (e.g., Meloy & Phillips, 2012b). Additionally, more information is needed regarding access to high quality care, including subsidy use, and how this varies by parental, non-parental, and foster care arrangements. Second, more research is needed specific to infants and toddlers given that regulatory processes are just emerging during this developmental time period. In terms of understanding the role of caregiving experiences in child care for these children, it will be critical for research to elucidate whether infants and toddlers are more open to the protective influence of other quality caregivers because their regulatory processes are just developing, or if the impact of maltreatment on emotion regulation at this vulnerable age is too great for the buffering effect of child care, especially normative models of high quality care. Third, research from non-maltreated samples provides an important foundation for hypothesizing why quality caregiving experiences (i.e., proximal processes) in child care are important for the regulatory needs of these children, but conclusions from these samples may be limited in application. Research with maltreated preschool samples has examined the effect of child care quality as measured by accreditation status and state quality rating systems, but more research is needed on elements of process quality, as it is the most salient aspect of child care quality in socioemotional outcomes. Finally, there is a great need to better understand the exact nature of developmentally appropriate process quality for this unique population. Infants and toddlers who have experienced maltreatment and trauma may not respond to the same traditional conceptualizations of process quality, and would benefit from more targeted behavior and emotional support, integrating early education teacher training with infant mental health and trauma-informed perspectives of care.

In sum, moving research forward in these directions will help professionals better understand the potential for caregiving relationships in child care to serve as developmental

assets for this vulnerable population. Additionally, clarity in these areas will help determine the optimal structuring of teacher education and early care and education experiences in ways that best facilitate healthy emotion regulation development for maltreated infants and toddlers.

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