



Differences in the early care and education needs of young children involved in child protection



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ARTICLE INFO

Article history:

Received 14 January 2014

Received in revised form 22 July 2014

Accepted 23 July 2014

Available online 14 August 2014

Keywords:

Child protection

Poverty

Early care and education

ABSTRACT

There is increasing attention being given to better coordinated early care and education (ECE) and child protection systems across the nation, as children with child protection involvement are at risk for a range of negative outcomes that have been improved through high quality ECE in other populations. However, there is little empirical evidence to demonstrate what types of ECE experiences are needed for children involved in the child protection system in order to improve their developmental outcomes. This study compared the developmental status in the year prior to kindergarten of low-income children with and without child protection involvement who were enrolled in a range of ECE settings, all of which were rated highly by a state quality rating and improvement system. Using secondary data from a large Midwestern state child protection system and a local ECE evaluation, findings demonstrated that children with child protection involvement were performing more poorly than their low-income peers without child protection involvement on measures of receptive vocabulary, math reasoning, and teacher ratings of anger/aggression and anxiety/withdrawal, but not on ratings of social competence. Growth was made in receptive vocabulary and social competence for all children and there was no significant interaction between group and time for any child outcome measure. These data suggest that children with child protection involvement continue to manifest academic and social difficulties despite attending high quality ECE programs. Implications for improving the early educational opportunities for children with child protection involvement and suggestions for future research are discussed.

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1. Introduction

With the continued expansion of the early care and education (ECE) system nationally, combined with growing attention to the ECE needs of children in the child protection system (see the CAPTA Reauthorization Act of 2010)¹, greater numbers of young children receiving child protective services are also receiving ECE in their communities. In fact, there is a significant overlap in the proportion of children who are involved in the child protection and ECE systems; recent estimates indicate that just over half of all children in the child protection system attend some type of ECE setting (Ward et al., 2009). The recommendations for increasing access to high quality ECE for children involved in child

protection are frequently based on evidence that children experiencing poverty benefit from high quality and often model comprehensive ECE programs (Reynolds, Magnuson, & Oh, 2010), as there are few data specific to children involved in child protection (for exceptions, see Lipscomb, Pratt, Schmitt, Pears, & Kim, 2013; and Dinehart, Manfra, Katz, & Hartman, 2012). However, there is reason to think that children with the additional risk of child protection involvement may have even greater developmental challenges and needs than children living in poverty alone (National Scientific Council on the Developing Child, 2012). Specifically, the types of challenges and needs demonstrated by children in the child protection system, who are likely to have experienced trauma, may require very particular strategies and programming components (such as a therapeutic environment) that are not found in a comprehensive ECE program or a typical ECE program.

There is notable diversity in the type and quality of ECE programs available (Adams, Zaslow, & Tout, 2007; Early et al., 2005; Moiduddin, Aikens, Tarullo, West, & Xue, 2012), and thus few opportunities for children involved with child protection to access comprehensive model ECE programs. More research is needed to understand whether children with additional risks beyond poverty, such as those who have been involved with the child protection system, can benefit from typically available ECE programs in their community. In this study, we

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¹ Child protection is a term specific in its relation to the maltreatment of children as opposed to child welfare, which is a term that often, but not always, encompasses a broader set of services and children. Some authors use these terms interchangeably. This study, and therefore the literature included in this paper, focus on children who have been reported for having been maltreated. We use the term child protection unless a referenced article is specific in its inclusion of children beyond those that have been maltreated. In those situations we have utilized their terminology of child welfare.

examined the development of children involved in the child protection system who are enrolled in typically available ECE programs the year prior to kindergarten entry to ascertain the extent to which ECE settings could support developmental progress, above and beyond the impact of poverty.

1.1. Developmental outcomes of children experiencing adversity

In the last decade, the science of early childhood has reached new levels of understanding, rich with knowledge about how children's earliest experiences, good and bad, are carried forward into adulthood by influencing the very architecture of their brains (Gunnar & Loman, 2011; Shonkoff, 2011). Children who experience significant adversity in the first few years of life are at greater risk for a range of poor outcomes across the lifespan (Duncan, Ziol-Guest, & Kalil, 2010; Felitti et al., 1998; Melchior, Moffitt, Milne, Poulton, & Caspi, 2007; Miller & Chen, 2013; Shonkoff, Boyce, & McEwen, 2009). Poverty is one of the most significant threats to child development (Duncan & Brooks-Gunn, 2000), and there is evidence that positive adaptation in adulthood is compromised by the experience of poverty in childhood (Conroy, Sandel, & Zuckerman, 2010; Duncan et al., 2010; Hertzman & Boyce, 2010; Melchior et al., 2007; Miller & Chen, 2013). Specifically, the differences in children's social-emotional functioning and cognitive performance due to poverty are visible by age two and persist at school entry and throughout the school years (Bradley & Corwyn, 2002; Brooks-Gunn & Duncan, 1997; Fernald, Marchman, & Weisleder, 2013). Children who experienced poverty early are more likely to be retained a grade, not graduate from high school, and be diagnosed with a learning disability. Furthermore, there is evidence that the negative effects of poverty are especially strong when poverty is experienced in the first years of life (Brooks-Gunn & Duncan, 1997; Duncan et al., 2010).

As is the case for young children experiencing poverty, young children who experience the trauma of abuse and/or neglect and enter the child protection system suffer from similar adverse developmental outcomes. Young victims of maltreatment and neglect tend to perform poorly across all domains of development, from cognition, neurological development, and language (Aber, Allen, Carlson, & Cicchetti, 1989; Culp et al., 1991; Pears & Fisher, 2005a; Vondra, Barnett, & Cicchetti, 1990) to the development of core social-emotional processes, such as attachment, emotional understanding, and theory of mind (Cicchetti & Toth, 1995; Dozier, Stovall, Albus, & Bates, 2001; Pears & Fisher, 2005b) to internalizing and externalizing behavior problems (Aber et al., 1989; Dubowitz, Papas, Black, & Starr, 2002; Erickson, Egeland, & Pianta, 1989; Fantuzzo, Weiss, Atkins, Meyers, & Noone, 1998; Herrenkohl, Herrenkohl, Egolf, & Wu, 1991; Rieder & Cicchetti, 1989; White, Halpin, Strom, & Santilli, 1988; Wiggins, Fenichel, & Mann, 2007). With respect to academic achievement, children in the foster care system are more likely than their peers to have lower grades, be held back a grade, receive special education services and fail to graduate from high school (Eckenrode et al., 2001; Emerson & Lovitt, 2003; Piescher, Hong, & LaLiberte, 2012; Urquiza, Wirtz, Peterson, & Singer, 1994). These negative effects on academic performance in high school remain even when the involvement with the child protection system occurred in early childhood (Trout, Hagaman, Casey, Reid, & Epstein, 2008).

Data show that children who have been involved with the child protection system are also likely to have experienced poverty with their biological families at much higher rates than children in the general population (Barth, Wildfire, & Green, 2006; Pinderhughes, Harden, & Guyer, 2007). One of the primary mediators of the relationship between poverty and poor child outcomes is a supportive primary caregiver (Sroufe, Egeland, Carlson, & Collins, 2005); thus, children who have experienced both poor quality caregiving, such as that experienced by children involved with child protection, and poverty are likely to have worse developmental outcomes than children with either of those risk

factors alone (National Scientific Council on the Developing Child, 2012). The extent to which young children in the child protection system can receive consistent, supportive caregiving, not only at their home or place of residence but also in their ECE settings, is likely to be the key to a successful ECE experience and to positive developmental outcomes.

1.2. Early care and education and children's development

Evidence from the ECE literature demonstrates the significant role that comprehensive, high quality ECE can play in the lives of children at risk for poor school outcomes, particularly for children experiencing poverty (Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001; Reynolds, Temple, & Ou, 2003; U. S. Department of Health and Human Services [USDHHS], 2010). Characterized by low teacher/child ratios; small group sizes; and services for parents; consistent, warm, and supportive teacher-child relationships; and appropriately stimulating learning/curricular opportunities, these types of comprehensive, high quality programs have demonstrated long-term impact on the academic achievement of children experiencing poverty (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002). However, the extent to which these benefits also hold true for young children involved in the child protection system is unclear, as many children in the child protection system are not necessarily enrolled in comprehensive, high quality ECE settings or settings that provide specialized services to support the unique needs of children who have experienced trauma (e.g. continuity of care providers, low ratios, and comprehensive services for children and parents).

Currently, the program that best approximates comprehensive services (although not necessarily specialized trauma-informed care services) and is most available to poor children is Head Start. Young children in foster care are categorically eligible for Head Start services, and the Administration for Children and Families (ACF) encourages local sites to give priority status to not only children in foster care but any child who has an open child protection case for the available Early Head Start and Head Start spaces (U. S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start [OHS], 2010). Though there are no data currently published specific to children involved in child protection, a recent study examined the impact of Head Start for children experiencing non-parental care (not necessarily due to foster care or loss of parental rights through the child protection system) and found that these children demonstrated modestly improved school readiness from the services provided over the course of their preschool year (Lipscomb et al., 2013).

Regardless of this hopeful evidence that Head Start may benefit children involved in child protection, these children are not universally accessing Head Start services. In fact, data from an examination of ECE use by preschool children in the child protection system in Oregon show that over 40% of the children in the sample attended either a non-Head Start ECE program or some combination of Head Start and non-Head Start ECE program (Lipscomb & Pears, 2011). In Colorado, about 50% of 3- to 5-year-old children in the child protection system were enrolled in some kind of ECE program and less than 20% of them were enrolled in Head Start (Ward et al., 2009). Given the already long waitlists for limited spots in Head Start and the substantial use of other ECE programming, the question of whether typically available ECE programs (which include licensed private, non-profit/for-profit, and accredited/non-accredited child care centers; preschools; public pre-kindergarten; and family child care homes) can effectively meet the specific needs of young children in the child protection system is a critical one.

There is reason to hypothesize that typically available ECE programming might be beneficial for children in the child protection system. First, quality ECE settings may provide one of the most consistent caregiving experiences that children involved in the child protection system receive during the first few years of life, particularly when they offer developmentally appropriate and cognitively stimulating environments

with the presence of stable and sensitive caregiver–child relationships. Thus, quality ECE settings can potentially provide a direct benefit to children's developmental outcomes. Furthermore, ECE teachers and caregivers can help identify special learning or behavioral needs and aid in the provision of early childhood special education or early intervention services if necessary.

It is important to note that this is a potential opportunity for collaboration with the child protection system as well. The CAPTA Reauthorization Act of 2010 began to address the ECE needs of children by supporting prevention and assessment activities that occur within the child protection system. In particular, the reauthorization requires referral of children under the age of three who are involved in a substantiated case of child maltreatment to early intervention services funded under Part C of the Individuals with Disabilities Education Act. In addition, ECE settings can also provide an indirect benefit to children through the provision of respite and parenting education and support to both the biological and foster care parents (Dinehart, Katz, Manfra, & Ullery, 2013; Lipscomb & Pears, 2011; Meloy & Phillips, 2012).

However, there is also reason to hypothesize that the range of typically available ECE settings may not bring all the hoped-for benefits for young children in the child protection system. Unfortunately, ratings of ECE quality fall into the mediocre to average range (Bryant et al., 2009; Fuller, Kagan, Loeb, & Chang, 2004; Guzman et al., 2009), and data reveal that young children in the child protection system are cared for in lower quality settings (Dinehart et al., 2013). Additionally, there are disturbingly high rates of suspension and expulsion of preschool-aged children in ECE settings (Gilliam & Shahar, 2006), and young children in the child protection system are likely to present with some of the most challenging behavioral and/or socioemotional problems, such as attachment disorders (Meloy & Phillips, 2012; Wiggins et al., 2007). Among young children in the child protection system, 32% had an identified mental health need, yet less than 7% of those children received services to address those needs (Cooper, Banghart, & Aratani, 2010).

Furthermore, while ECE may provide a consistent interpersonal experience in a developmentally supportive environment, even programs rated high quality through national accreditation, quality rating systems, or other program quality ratings that indicate a baseline level of quality higher than licensing are unlikely to employ staff who possess the training and skills to effectively care for children with mental health challenges (Cooper et al., 2010). Nor do they require or provide the supports for early care providers to access and utilize the kinds of specialized training, such as trauma-informed care, that may be needed to provide high quality care and education for these children (Cooper et al., 2010; Dinehart et al., 2013). In addition, annual turnover rates of ECE staff are estimated between 25 and 40% (National Association of Child Care Resource and Referral Agencies, 2012); this is a significant problem, especially for young children in the child protection system for whom consistency in caregiver–child relationships is a particularly critical need.

Data on the development of young children in the child protection system in the context of their ECE experiences are limited. A few studies have examined the effect of nationally accredited ECE settings, a widely accepted proxy for high quality care (Dinehart et al., 2012; Meloy & Phillips, 2012), or Head Start (Lipscomb et al., 2013) on the developmental outcomes of children involved in the child protection system. These studies found some improvements in children's developmental outcomes as a result of their ECE experience. Children who attended accredited ECE were performing better at the end of preschool on measures of language, cognition, and fine motor skills than children who were in ECE sites that were not accredited (Dinehart et al., 2012; Meloy & Phillips, 2012). However, regardless of the accreditation of the ECE setting, the additional risk of child protection involvement for children experiencing poverty was related to poorer developmental outcomes (Dinehart et al., 2012). Children participating in Head Start showed modest improvements in pre-academic skills and marginal

improvements in behavior problems (Lipscomb et al., 2013). While these data suggest that young children in the child protection system can show improvements in pre-academic skills when attending quality ECE settings, they also indicate that their pre-academic and social-emotional skills still lag behind those of their non-child protection counterparts. These are important studies laying the foundation for further research in this arena: They reveal the great need to build a solid evidence base that documents how the language, cognitive, and social-emotional outcomes of these children may be linked to their participation in ECE programs.

The purpose of this study was to contribute to the knowledge base by investigating both the academic and social-emotional development of young children who were involved in the child protection system. This investigation focused on children who had accepted reports in the child protection systems for reasons of alleged child maltreatment and who were mostly living with families in poverty. Our investigation compared the development of these children to the development of children from an ethnically and poverty matched comparison sample of children who were receiving ECE programming in similar settings. The following question was addressed: Under the context of high quality ECE services as measured by a statewide quality rating and improvement system, are children with child protection involvement making progress in the development of their language, mathematical, and social skills similar to their (matched) peers in the year prior to kindergarten?

2. Methods

2.1. Data sources

The study relied on secondary data from two sources: the Minnesota Linking Information for Kids (Minn-LInK) project and the Minnesota Early Learning Foundation (MELF) Evaluation. The Minn-LInK project utilizes statewide administrative data from the Minnesota Department of Education (MDE) and Minnesota Department of Human Services (DHS) Social Service Information System (SSIS) to answer questions about the impact of policies, programs, and practice on well-being of children in Minnesota. For the current study, data from DHS-SSIS 2010, which included statewide information about accepted reports in the child protection system as well as demographic data such as gender and race, were used.

The MELF early childhood database consists of data from 1053 preschool-aged children, at risk due primarily to low-income status, from the years 2008 through 2011 who were participating in community-based ECE programs that were part of evaluations funded by MELF (for more details, see *Child Trends*, 2011). Data were first collected in spring 2008 and then every fall and spring through fall 2011 and included information on children's developmental status, measured through direct assessment and teacher report; parent and demographic data from a parent interview; and ECE program-level data. Through Minn-LInK, DHS-SSIS administrative data were used to match children who received ECE services through programs that are part of the MELF early childhood database. Link Plus (Registry Plus [Computer Software], 2010), a probabilistic record matching software, was used to match these records to children's corresponding records in SSIS. Of the 1053 children in the MELF early childhood database, 95 (9%) were identified as having had a history of child protection involvement (as defined by having had an accepted maltreatment report) at some point either during or prior to their pre-kindergarten year.

To examine the effect of child protection involvement on school readiness, a sub-sample of children matched on racial/ethnic characteristics, age, gender, and poverty status was selected using propensity score matching from the sample of remaining children in the early childhood database without child protection involvement.

2.2. Participants

The final sample consisted of 190 children (Males = 116, Females = 74; M age at the start of the study = 4.7, SD = 0.4), with 95 children in each group: children with history of child protection involvement (Males = 68; Females = 27) and children without child protection involvement (Males = 48; Females = 47). The sample was racially diverse: Caucasian, 19%; African-American, 48%; Native American, 7%; Asian-American, 6%; Latino, 10%; and other, 10%. Just over half of the children had missing poverty data, but of the 84 children who had data, all were at least below 200% of the federal poverty line. Additionally, at the point of enrollment in the evaluation, program directors were asked to recruit children who were low-income. The children attended a diverse set of ECE settings, with 55% attending center-based or community-based ECE programs, 26% attending school-based pre-k programs, 14% attending Head Start, and 4% attending licensed family child care. There were no significant differences between the groups for race, but children with a history of child protection involvement were significantly more likely to be male than were children without a history of child protection involvement ($\chi^2(1) = 8.85, p < .05$); however, gender was unrelated to all child outcomes.

2.2.1. Children receiving both child protection and ECE services

Descriptive analysis was conducted for children with history of child protection involvement ($n = 95$) on child protection indicators: number of allegations, types of allegations, response type, and family conditions. Over half of all children (57%) received one accepted report or instance of alleged maltreatment, with the rest receiving between two and six. Instances of alleged maltreatment included neglect (70%), physical abuse (24%), sexual abuse (5%), and medical neglect (1%). Accepted reports can either receive a traditional or an alternative response in Minnesota. Traditional response involves investigations of maltreatment to determine if the children have been or are at risk of being harmed (USDHHS ACF, 2012). Alternative response enables the child protection workers to intervene with families without a formal investigation in supportive ways that focus more on their strengths (USDHHS ACF, 2012) and is the preferred response in Minnesota except in cases of sexual abuse, egregious harm, or reports of maltreatment in child care or foster care. Alternative response is also known as differential response, or Family Assessment in Minnesota. Families receiving this response are engaged in a formal assessment (vs. investigation) process. A little less than two-thirds of reports (58%) received a Family Assessment response. For the purposes of this study, child protection involvement was measured if the children had any alleged instance of maltreatment between the years 2000 and 2010 (coded as binary variable 1 = history of child protection involvement and 0 = without child protection involvement) regardless of the type of maltreatment alleged, number of reports made, the response received, or whether a substantiation was made. Data from NSCAW indicate that there is little difference in the developmental outcomes of children with substantiated versus unsubstantiated cases (Casaneva, Cross, & Ringeisen, 2008).

2.3. Measures

For the current study, data include two direct child assessments, receptive vocabulary (Peabody Picture Vocabulary Test IV [PPVT-IV]; Dunn & Dunn, 2007) and math reasoning (Woodcock-Johnson III [WJ-III], Applied Problems sub-scale; Woodcock, Schrank, Mather, & McGrew, 2007), as well as teacher ratings of their social-emotional behaviors (from the Social Competence and Behavior Evaluation-30 [SCBE-30]; LaFreniere & Dumas, 1996).

PPVT-IV: The PPVT-IV is a measure of children's receptive vocabulary. Children are asked to point to the picture that corresponds to the vocabulary word read to them by a trained data collector. The

PPVT-IV is a standardized measure (mean of 100 and a standard deviation of 15) that is widely used with preschool-aged children and has demonstrated reliability and validity.

WJ-III, Applied Problems Sub-Scale: The Applied Problems subscale of the WJ-III requires children to analyze and solve math problems. There are 39 items on this subtest that are presented orally with visual stimulus by a trained data collector. The WJ-III is a standardized measure (mean of 100 and a standard deviation of 15) that is widely used with preschool-aged children and has demonstrated reliability and validity.

SCBE-30: The SCBE-30 is a teacher report measure of social emotional functioning with three subscales: anger/aggression, anxiety/withdrawal, and social competence. Each of the SCBE-30 subscales consists of ten questions rated on a scale of 1 to 6, where 1 is "Never" and 6 is "Always." The lowest number of total points possible for each subscale is 10 and the highest is 60. The SCBE-30 is not standardized but has good construct validity and inter-rater reliability, as well as age norms based on a large US sample (LaFreniere & Dumas, 1996).

Poverty data were provided by parents in a phone interview, with 66% of parents completing the phone interview. In addition, children attended ECE programs that had received a star rating through Minnesota's pilot of a quality rating and improvement system (Parent Aware). A star rating of 1 through 4 was assigned to programs, with 4 indicating the highest quality. Ratings were based on a formula that included both administrative data on quality indicators such as professional development, family partnerships, teaching materials and strategies, and assessment, and observational measures of quality (ECERS-R, Harms, Cryer, & Clifford, 2003; CLASS, Pianta, La Paro, & Hamre, 2007). For more information on Parent Aware, see *Child Trends* (2011). Because nearly all of the children in both groups (98%) attended ECE settings that received high quality ratings in the state's quality rating system (as indicated by a 3 or 4 star rating), there was little variation in quality across the sites and thus it was not possible to control for quality in our analyses.

Standard scores from the two direct assessments (receptive vocabulary and math reasoning) administered at the beginning and end of the final year of preschool prior to kindergarten entry were compared for children with and without child protection involvement. In addition, the three subscales (anger/aggression, anxiety/withdrawal, and social competence) from the social-emotional survey were also compared for children with and without child protection involvement.

2.4. Analysis

In order to understand the differences between two groups (with and without child protection involvement) and differences for the two groups over time, repeated measures ANOVA was used. The dependent variables in this study were the changes in pre- and post-test scores across five measures of children's academic and social emotional functioning (PPVT-IV, WJ-III, SCBE-30 social competence, SCBE-30 anger aggression, and SCBE-30 anxiety withdrawal); independent variables were time (within subject) and groups (between subjects). IBM SPSS Statistics 21 was used to conduct the analysis.

3. Results

3.1. Repeated measures ANOVA

Repeated measures ANOVA was conducted to assess whether there were significant differences in pre- and post-test scores across the five measures and whether the scores between the two groups (with history of child protection involvement and without child protection involvement) differed significantly from each other. Assumptions of homogeneity of variance were tested (using Levene's Test) and met.

The mean and standard deviations for all five measures at different time points and between two groups have been listed in Table 1.

3.1.1. Receptive vocabulary

Results of repeated measure ANOVA indicated that mean score on the PPVT improved over time ($F(1, 139) = 12.66, p < .05, \eta_p^2 = .083$). Additionally, there was a main effect of group, with children with child protection involvement faring significantly worse on receptive vocabulary scores than their peers ($F(1, 139) = 10.15, p < .01, \eta_p^2 = .068$). There was no time by group interaction effect ($p = .303$).

3.1.2. Math reasoning

Results of repeated measure ANOVA indicated that mean scores for math reasoning did not significantly improve over time ($p = .553$). However, there was a main effect of group ($F(1, 127) = 5.55, p < .05, \eta_p^2 = .042$), with children with history of child protection involvement having significantly lower mean scores than their peers. There was no time by group interaction effect ($p = .463$).

3.1.3. SCBE-30 social competence

Results of repeated measure ANOVA indicated that mean score on social competence measure improved over time ($F(1, 81) = 4.647, p < .05, \eta_p^2 = .054$). There was no main effect of group ($p = .312$) or time by group interaction effect ($p = .291$).

3.1.4. SCBE-30 anger aggression

Results of repeated measure ANOVA indicated that mean scores for anger aggression did not significantly change over time ($p = .169$). However, there was a main effect of group ($F(1, 107) = 4.04, p < .05, \eta_p^2 = .036$), with children with history of child protection involvement having significantly higher mean scores on SCBE-30 Anger aggression sub-scale than their peers. There was no time by group interaction effect ($p = .583$).

3.1.5. SCBE-30 anxiety withdrawal

Results of repeated measure ANOVA indicated that mean scores for anxiety withdrawal did not significantly change over time ($p = .905$). There was a main effect of group ($F(1, 101) = 17.41, p < .001, \eta_p^2 = .147$), with children with history of child protection involvement having significantly higher mean scores on the anxiety withdrawal sub-scale than their peers. There was no time by group interaction ($p = .168$).

4. Discussion

The purpose of this study was to document the developmental outcomes of young children who were involved in the child protection system as compared to the outcomes of ethnically and socioeconomically similar peers who did not have involvement in the child protection

system, in the context of receiving ECE services in programs rated highly by the state's quality rating and improvement system. Young children in the child protection system face significant challenges that threaten their healthy development over time. Access to ECE programs that provide specialized services for children with the unique needs that result from the experience of trauma is limited, and so whether the types of ECE programs typically available in the community can serve compensatory purposes is a critical question. Although this study cannot directly address this question because there was no variability in quality, a comparison between children with varying risk who were experiencing the same high quality care provides an important initial examination. These data can also be used to further the growing interest in improving the coordination of the child protection and ECE systems and to support the special needs of this uniquely challenged population (Meloy & Phillips, 2012; USDHHS ACF & OHS, 2010; Zero to Three, 2012).

Overall, the findings from this study indicate that young children who have a history of involvement in the child protection system are faring less well on academic and socio-emotional outcomes in the year prior to kindergarten than their peers without child protection involvement, despite all receiving ECE in settings typically available to children and rated highly by the state's quality rating and improvement system. Specifically, while child protection-involved children's receptive vocabulary scores did improve over time, they were still on average significantly lower than those of their non-child protection-involved counterparts. Children with prior involvement in the child protection system also were performing significantly worse on measures of early math achievement than their peers without child protection involvement. Children with involvement in the child protection system did show improvements in social competence, similar to the age improvements made in a large US sample published by the SCBE-30 creators, and scores were similar to the comparison children and to norms from the large US sample (LaFreniere & Dumas, 1996), indicating age-appropriate social competence. However, the young children in the child protection system in this study had significantly higher anxiety and anger scores, which remained significantly higher over time. Thus, there were no improvements in the externalizing and internalizing aspects of their social-emotional development over the course of their pre-k year in ECE programs considered high quality by the state's quality rating and improvement system.

The pre-academic findings are similar to those of Dinehart et al. (2012), who also demonstrated that young children in the child protection system who attended early care and education increased language skills but continued to lag behind their ethnically and socioeconomically-matched peers not in the child protection system. Taken together, these findings are the beginning of an evidence base indicating that additional language support may be necessary for children involved in the child protection system.

The social-emotional results add new interesting findings to the literature about the social-emotional development of young children in the child protection system who participate in ECE programming. A hopeful but also somewhat curious finding was that children with child protection involvement in our sample had ratings of social competence that were similar to those of same-age at-risk peers based on low-income status and to peers in the LaFreniere and Dumas (1996) sample without significant risk. Despite this positive finding, it is not surprising that young children in the child protection system had significantly higher levels of anger and anxiety, as it is well documented that children who experience trauma are more likely to have both internalizing and externalizing problems (Aber et al., 1989; Dubowitz et al., 2002; Erickson et al., 1989; Fantuzzo et al., 1998; Herrenkohl et al., 1991; Rieder & Cicchetti, 1989; White et al., 1988). Additionally, the lack of improvement in negative social-emotional characteristics over the course of the preschool year while in high quality ECE programs is similar to the findings of Lipscomb et al. (2013), who obtained marginally significant improvements in internalizing and externalizing behavior

Table 1
Mean pre and post-test scores between children with and without child protection involvement.

		Child protection involvement – no		Child protection involvement – yes	
		Mean	SD	Mean	SD
PPVT (receptive vocab)	Pre	98.48	16.67	90.81	15.71
	Post	101.82	18.21	92.64	14.01
WJIII (math reasoning)	Pre	102.50	11.89	98.85	11.10
	Post	103.54	10.93	98.70	10.77
SCBE-30 social competence	Pre	41.02	8.50	38.28	9.32
	Post	42.06	8.96	41.35	8.59
SCBE-30 anger aggression	Pre	16.74	7.86	19.50	8.43
	Post	17.28	8.43	20.76	10.26
SCBE-30 anxiety withdrawal	Pre	15.48	5.51	21.42	8.50
	Post	16.39	5.64	20.65	7.87

problems for children living in non-parental care and receiving Head Start services. These findings of early socio-emotional difficulties are notable as these are markers for later social-emotional problems (Bulotsky-Shearer & Fantuzzo, 2011; Montes, Lotyczewski, Halterman, & Hightower, 2012). Additionally, these kinds of socio-emotional difficulties can be challenging for the average ECE provider/teacher to handle without additional specialized services and/or early intervention services. These findings also form the beginning of an evidence base indicating that additional support for socio-emotional needs of children participating in the child protection system may be necessary.

Overall, these findings offer evidence that early disparities exist between the academic and social-emotional functioning of young children in the child protection system and their matched peers not in the child protection system. Furthermore, the types of settings typically available in their communities that were rated highly by the state's quality rating and improvement system did not appear to lessen the disparities that existed already by their pre-kindergarten year. However, there are several important limitations to this study that should be noted. First, and perhaps most importantly, there was no sample of children who received either low quality or no ECE services with whom to compare developmental outcomes and thus, quality was not itself a measure included in the analyses. Thus, although children in this sample who had child protection involvement had poorer developmental outcomes than children without involvement despite all being in high quality ECE settings, it is possible that they were still doing better than if they had not been in ECE settings at all or had been in lower quality settings. Furthermore, there are other variables that might be important related to the children's ECE settings, particularly for children with child protection involvement, that were not included in this study such as dosage, stability of care, and age of entry. Additionally, because of the size of the sample, this study used only a crude measure of child protection involvement, which was whether children had an accepted report in the child protection system, and did not examine factors such as timing or type of maltreatment. Finally, because the study relied on parent reports through the phone interview for poverty data, there were notable missing data.

Still, despite these limitations, and given the paucity of information about the fate of children involved in child protection in ECE settings, this study contributes valuable information to the question of whether typically available ECE programs, the kind that most young children in this country experience, can sufficiently address the academic and social-emotional needs of young children in the child protection system. The findings indicate that these types of settings, despite meeting the standards necessary to reach the top levels of a state quality rating and improvement system, are not sufficient to eradicate disparities that exist by children's pre-kindergarten year. Indeed, the appropriate question may not be can typically available ECE programs sufficiently address these children's needs, but rather should these types of programs even be asked to meet the needs of children with histories of trauma and/or other serious risk factors? In the case of populations with especially high needs, it may be best for typical ECE programs to focus on how to identify those children early and make referrals to more intensive services to be accessed in addition to the services offered by their settings, such as early intervention or mental health services. Regardless of how programs meet the especially high needs of children with child protection involvement, it is critical to eliminate these early disparities as we know that they will lead to continued academic difficulties, increased uptake of special education services, grade retention, and lower graduation rates (Eckenrode et al., 2001; Emerson & Lovitt, 2003; Piescher et al., 2012; Urquiza et al., 1994).

Certainly continued research is necessary. Future studies need to continue to describe a wider range of developmental outcomes of young children in the child protection system receiving ECE programming in order to develop a sound knowledge base regarding the development of these children. Future studies also need to address the ECE context, quality, and services that these children receive. For example,

for young children in the child protection system to benefit from ECE services, what level of quality and/or at what dosage is necessary? Do children who receive additional mental health services or early intervention services, for example, as well as standard ECE services, make appropriate academic and social-emotional gains? Are therapeutic preschool programs that provide trauma-informed care necessary for children who may have experienced trauma? All of these questions about the role of ECE settings may vary based on the type and severity of maltreatment experienced, whether an out-of-home placement occurs, and the timing and duration of the child's involvement in the child protection system. Building on the findings in this and the few other studies addressing this issue, the field can begin to explore the ways in which participation in high quality ECE programs can potentially benefit children who have experienced trauma so that they can get the necessary intervention to improve their developmental outcomes, both in the short term but also well into adulthood.

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