



Published in final edited form as:

Child Maltreat. 2013 February ; 18(1): 56–64. doi:10.1177/1077559512461397.

Does Neglect Moderate the Impact of an Efficacious Preventive Intervention for Maltreated Children in Foster Care?

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Abstract

Physically neglected youth are at increased risk for mental health problems, but there are few interventions that have demonstrated efficacy in reducing mental health symptoms for this vulnerable population. The Fostering Healthy Futures (FHF) program, which consists of mentoring and skills groups, was developed for preadolescent youth in foster care. In a published randomized controlled trial with 156 youth, FHF demonstrated positive impacts on mental health functioning. The current study sought to determine whether FHF might be particularly effective in ameliorating the impact of neglectful family environments. Because it was not possible to isolate a neglected-only subgroup, as most children with physical neglect histories had experienced other types of maltreatment, we tested the hypothesis that intervention effects would be stronger among children with more severe physical neglect. Findings did not support this hypothesis, however, as severity of physical neglect did not significantly moderate the impact of the intervention on psychosocial outcomes

On September 30th in 2010, 408,425 children were living in foster care in the United States (United States Department of Health and Human Services, 2011). Children in foster care have high rates of mental health problems, including depression, anxiety, and posttraumatic stress (Clausen, Landsverk, Ganger, Chadwick, & Litrownik, 1998; Pecora, Jensen, Romanelli, Jackson, & Ortiz, 2009). Although a number of internal and external factors contribute to the development of mental health problems, maltreatment experiences may play a particularly salient role for this population. If we can identify those maltreatment experiences that contribute to the development of mental health problems, as well as those that are associated with a positive response to intervention, it might inform efforts to reduce the emotional and financial burden of mental health problems among children in foster care.

Among types of maltreatment, neglect is the most common precipitant for placing a child in foster care (Administration for Children, Youth and Families, n.d.). In a nationally

representative study of youth involved with child welfare, neglect was the primary reason for placement in foster care in more than 60% of the cases, and this was true for school-age children and across all racial/ethnic groups. The most common subtypes of neglect were physical neglect (i.e., failure to provide adequate food, clothing, shelter, medical care, or safe living environment) and supervisory neglect (i.e., failure to provide age-appropriate and reasonable supervision) (American Humane Association, 2012). The prevalence of physical neglect and supervisory neglect were comparable in this national sample (Administration for Children, Youth and Families, n.d.).

Understanding the effects of neglect on youth functioning is challenging for many reasons. First, neglect is rarely defined in a clear or consistent manner (Gaudin, 1999). Many studies treat neglect as a homogeneous construct and do not differentiate among subtypes of neglect, despite the fact that neglect subtypes may have different effects on functioning. The lack of a clear definition of neglect contributes to inconsistencies in findings and makes it difficult to draw conclusions across studies. Second, some studies fail to account for the fact that most youth experience multiple types of maltreatment (Herrenkohl & Herrenkohl, 2009; Manly, 2005). Among studies that do account for multiple maltreatment types, different analytic methods are often used, which may also lead to inconsistencies in findings. Finally, studies differ in their use of comparison groups. Some studies compare maltreated to non-maltreated children, while others examine the relative effects of different subtypes of maltreatment within a maltreated sample. Maltreatment subtype effects are likely to be smaller within maltreated samples than in studies that compare maltreated groups with non-maltreated comparison groups.

Despite these conceptual and methodological challenges, the majority of studies find that neglect is associated with mental health functioning. The direction of the effect varies, however, depending on the subtype of neglect examined. Physical neglect is the subtype of neglect most frequently studied, and it is consistently associated with greater internalizing symptoms relative to both maltreated and non-maltreated comparison groups (Dubowitz, Pitts, & Black, 2004; English et al., 2005; Erickson & Egeland, 2011; Lynch & Cicchetti, 1998; Manly, Kim, Rogosh, & Cicchetti, 2001; Thornberry, Ireland, & Smith, 2001). Supervisory neglect is less frequently studied, but two studies of children in foster care found that children with histories of predominantly supervisory neglect had lower rates of internalizing symptoms than children who had experienced other forms of maltreatment (Pears, Kim, & Fisher, 2008; Petrenko, Friend, Garrido, Taussig, & Culhane, manuscript submitted for publication). In contrast, two other studies failed to find any association between supervisory neglect and internalizing symptoms (English et al., 2005; Litrownik, et al., 2005).

When subtypes of neglect are collapsed into a single general neglect category, the direction of the effect depends largely on the comparison group. When compared with their non-maltreated peers, neglected children tend to have more internalizing behavior problems (Bolger & Patterson, 2001a; Macfie, Cicchetti, & Toth, 2001; Oshri, Tubman, & Jaccard, 2011), but when compared with children who have experienced other types of maltreatment, neglected children tend to have lower levels of internalizing symptoms (Lau et al., 2005).

These findings are consistent regardless of whether the occurrence or severity of neglect is examined.

Given the adverse consequences of neglect, one might expect to find a number of evidence-based interventions aimed at ameliorating the impact of neglect on social and emotional functioning. Unfortunately, there are few programs that have demonstrated efficacy specifically for neglected youth. Even rarer are programs that have demonstrated efficacy for certain subtypes of neglect, despite the fact that these subtypes predict different symptomatology. Most of the programs that address neglect are, understandably, family focused, and do not typically target the social and emotional needs of school-aged youth who have experienced neglect (American Humane, 2009; DePanfilis, 2006). A systematic review identified only four evaluations of child-focused programs targeting neglect (Allin, 2005). All were fairly small studies ($N < 50$) and none were restricted to children who had experienced neglect only. These studies were conducted over 15 years ago with preschool-age children, and the longest post-intervention follow-up period was 2 months. The two strongest studies (methodologically) employed play therapy and found that children in the intervention groups demonstrated greater improvements in social and behavioral domains than those in the control groups (Fantuzzo, et al., 1996; Udwin, 1983).

While some widely-used evidence-based treatment programs, such as Trauma-Focused Cognitive Behavioral Therapy, Multidimensional Treatment Foster Care, Multisystemic Therapy, and Parent-Child Interaction Therapy have included children with histories of neglect, no known studies have documented their efficacy specifically for neglected youth (MacMillan, Wathen, Barlow, Fergusson, Leventhal, & Taussig, 2009). After reviewing the literature, Allin (2005, p. 499) concluded that “the effectiveness of treatment for children exposed to neglect alone (that is, without co-occurring abuse) cannot be determined from the existing literature,” pointing out that neglect often overlaps with abuse, making the number of children and families available for research on neglect-specific interventions small. As Allin suggested, it may not be possible to conduct a randomized controlled trial with a large enough sample of children who experienced neglect but not abuse. How, then, can we evaluate program efficacy in treating the sequelae of neglect? One method might be to investigate the moderating effect of neglect on treatment outcomes (after controlling for co-occurring abuse), by examining whether interventions are more effective for those who have been neglected.

The current study sought to examine the moderating impact of neglect on the efficacy of the Fostering Healthy Futures (FHF) program, a 9-month intervention for preadolescent children in foster care. Although the FHF program was designed for all maltreated children, it consisted of two components that may be particularly effective for children with histories of neglect: skills groups and mentoring (DuBois, Portillo, Rhodes, Silverthorne, & Valentine, 2011). Since neglect is an act of omission (as opposed to abuse, which is an act of commission), one approach to intervening with neglected children might be to try to ameliorate gaps in their upbringing, for example, by modeling healthy relationships, exposing children to enriching activities, and teaching children social skills. FHF skills groups were designed to bring children in foster care together in order to reduce stigma and provide them with opportunities to learn social skills in a supportive group environment.

The FHF mentoring component was designed to provide children in foster care with an additional supportive adult who could serve as a role model and advocate for youth, provide youth with exposure to new experiences, and help youth practice skills learned during group.

The current study was not immune to the aforementioned challenges in evaluating interventions for neglected youth, as the FHF program was not designed specifically for neglected youth, nor could we isolate a neglected-only subgroup within which to examine intervention effects. Therefore, the current study examined whether the intervention, which already demonstrated positive effects on mental health and associated psychosocial outcomes in a rigorous randomized controlled trial (Taussig & Culhane, 2010), had a greater effect for those children exposed to more serious physical neglect. Studies of other interventions have demonstrated that program effects may be greatest for those children and families who seem to be at the highest risk and might therefore benefit the most from intervention efforts (cf., Goldhaber-Fiebert et al., 2000; Olds et al., 2002; Sandler et al., 2003; Tolan, Gorman-Smith, & Henry, 2004; Wolchik et al., 2002). We selected physical neglect severity as a potential moderator of the intervention effect because the literature suggests that this form of neglect may be the most deleterious. We did not examine the moderating effect of supervisory neglect, as the literature suggests that it is not associated with greater mental health problems. We hypothesized that treatment effects on mental health and associated psychosocial outcomes six-months post-intervention would be most pronounced among those youth who had experienced more severe physical neglect. Exploratory analyses also investigated the extent to which physical neglect severity might moderate treatment effects on other related psychosocial constructs, including self-esteem, social support, social acceptance, coping skills, perceived opportunities, and quality of life, also measured six months post-intervention.

Methods

Participants

The study was conducted from July, 2002 to January, 2009 in two participating Colorado counties. Participants were recruited in 5 cohorts over 5 consecutive summers from a list of all children, aged 9–11, who were placed in foster care in participating counties. Children were recruited if they: 1) had been placed in foster care by court order due to maltreatment within the preceding year, 2) currently resided in foster care within a 35-minute drive to skills groups sites, 3) had lived with their current caregiver for at least 3 weeks, and 4) demonstrated adequate proficiency in English (although their caregivers could be monolingual Spanish speaking). When multiple members of a sibling group were eligible, one sibling was randomly selected to participate in the randomized controlled trial (RCT). Participation was voluntary, and could not be court-ordered.

There were 193 children who met initial eligibility criteria and 176 (91%) of these children and their substitute caregivers agreed to participate and completed the baseline interviews. After the baseline interview and prior to randomization, 20 (11.4%) of the participants were deemed ineligible for one or more of the following reasons: they had information on their child welfare records (obtained post-interview) that made them ineligible (e.g. incorrect birth date), they were developmentally delayed, and/or they were not proficient enough in

English to participate in the skills groups. Of the remaining 156 who were randomized to treatment and control groups, 12 youth (3 treatment and 9 control; a non-significant difference) were lost to follow-up at the 6-month post-intervention timepoint. The final sample of 144 children was 50.7% female, with a mean age of 9.92 ($SD = .89$). The racial/ethnic distribution of children (non-exclusive categories) was 45.8% Hispanic, 47.2% Caucasian, and 29.9% African-American.

Study Protocol

The study protocol was IRB-approved, and informed consent and assent were obtained. All children who participated in the baseline interview were screened for cognitive, educational, and mental health problems, using standardized tests of intellectual ability and academic achievement, as well as normed caregiver- and child-report measures of psychological functioning. The findings and accompanying recommendations were summarized in reports provided to children's caseworkers, who were encouraged to use the reports to advocate for educational and mental health evaluation and services. Following the baseline interview, eligible children were randomized to the "assessment only" (hereafter referred to as *Control*) and the "assessment plus intervention" (hereafter referred to as *Intervention*) groups after stratifying on gender and county. Eligible children were randomized manually, by cohort, in a single block.

The current study uses data collected at the baseline (T1) interview (2–3 months prior to the start of the intervention), and at the Time 3 interview, 6-months post-intervention (17–20 months post-baseline). At each timepoint, children and their current caregivers were interviewed by separate interviewers, typically at the child's residence. Children and caregivers were each paid \$40.00 for their participation. Teachers of participating children were also surveyed at Time 3. We were able to survey 89.1% of the children's teachers, who were each paid \$25 to complete the survey. Child welfare records were abstracted and coded at the time of the baseline interview.

Intervention

The nine-month Fostering Healthy Futures (FHF) intervention consisted of two components: 1) manualized skills groups, and 2) one-on-one mentoring by graduate students in social work (FHF is described in detail in Taussig, Culhane, & Hettleman, 2007). The program was designed to be "above and beyond treatment as usual." Although eligibility criteria stipulated that children must be in foster care at the start of the intervention, children's participation continued (with appropriate consent) if they reunified or changed placements during the intervention.

Skills Groups—FHF skills groups met for 30 weeks for 1.5 hours/week during the academic year and included 8–10 children and 2 group facilitators (one licensed clinician and one graduate student trainee). The FHF skills groups followed a manualized curriculum that combined traditional cognitive-behavioral skills group activities with process-oriented material. Units addressed topics including: emotion recognition, perspective taking, problem solving, anger management, cultural identity, change and loss, healthy relationships, peer pressure, and abuse prevention. The skills group curriculum was based on materials from

evidence-based skills group programs, including Promoting Alternative Thinking Strategies (Kusché & Greenberg, 1994) and Second Step (Committee for Children, 2001), which were supplemented with project-designed exercises from multicultural sources. The skills group curriculum included weekly activities that encouraged children to practice newly learned skills with their mentors in their communities. A large body of evidence suggests that skills training curricula are effective in reducing risk and promoting resilience in high risk populations (cf., Cooper, Lutenbacher, & Faccia, 2000; Greenberg, Domitrovich, & Bumbarger, 2000; Lipsey, Wilson, & Cothorn, 2000), including maltreated children (cf., Berliner & Kolko, 2000; Deblinger, Stauffer, & Steer, 2001; Swenson & Kolko, 2000). Empirical support for the beneficial effects of the PATHS curriculum is reviewed in the *Blueprints* series (Greenberg & Kusché, 2002).

Mentoring—The mentoring component of the FHF program provided 30 weeks of one-on-one mentoring for each child. Mentors were graduate students in social work who received course credit for their work on the project. Mentors were each paired with two children with whom they spent 2–4 hours of individual time each week. They also transported children to and from skills groups and joined the skills group for dinner. Mentors received weekly individual and group supervision and attended a didactic seminar, all of which were designed to support mentors as they: 1) created empowering relationships with children, serving as positive examples for future relationships, 2) ensured that children received appropriate services in multiple domains and served as a support for children as they faced challenges within various systems, 3) helped children generalize skills learned in group to the “real world” by completing weekly activities, 4) engaged children in a range of extracurricular, educational, social, cultural, and recreational activities, and 5) promoted attitudes to foster a positive future orientation. All of the mentoring activities employed by mentors were individually tailored for each child, based on the children’s presenting problems, strengths, and interests, as well as their family and placement characteristics. Empirical support for the beneficial effects of mentoring is reviewed in the *Blueprints* series (McGill, 2001), which recognized Big Brothers/Big Sisters (BBBS) as an empirically validated violence prevention program. A recent meta-analysis of mentoring program evaluations found evidence of program effectiveness across multiple domains for youth at all developmental stages from early childhood through adolescence (DuBois et al., 2011).

Independent Variables

Independent variables measuring abuse and neglect were created based on the occurrence and severity of physical neglect, supervisory neglect, physical abuse, and sexual abuse, which were coded using the Maltreatment Classification System (MCS; Barnett, Manly, & Cicchetti, 1993). The additional maltreatment types included in the MCS (i.e., emotional, moral/legal, and educational maltreatment) were also coded and are reported in Table 1, but are not the focus of the current study. The developers of the MCS report an overall kappa of .60 and adequate estimates of interrater agreement (.67–1.0) (Manly, Cicchetti, & Barnett, 1994).

In the current study, each child’s legal petition (filed in the dependency and neglect court proceedings) and social history (completed by caseworkers) were consensus coded by two

trained research assistants, and discrepancies were resolved through consultation with one of the senior investigators. We only coded maltreatment that occurred within the prior two years, because our review of case files suggested that information about past abuse and neglect was not reliably recorded in case files. Following MCS guidelines, occurrence of each maltreatment type was coded as a dichotomous variable (yes/no), while the severity of each maltreatment type was rated on a scale from 1 to 5, with 5 representing the greatest severity. Children who did not experience a particular type of maltreatment received a 0 for occurrence and severity on that type.

Maximum Abuse Severity, used as a control variable in analyses, was indexed as the severity of physical or sexual abuse, whichever was higher (range, 0 – 5). The mean severity score was .89 ($SD = 1.3$), which includes 92 youth (64%) who received a score of 0 because they did not experience either physical or sexual abuse.

Physical Neglect Severity, used as a potential moderator in analyses, was indexed using the MCS standards for coding the severity of physical neglect. Severity levels ranged from 0 – 5, with a code of 0 indicating no physical neglect, a 1 indicating physical neglect characterized by a caregiver's failure to provide the occasional meal, a clean and sanitary home, clean and appropriate clothes, and/or basic medical care, a code of 3 indicating physical neglect characterized by a caregiver's failure to provide regular meals, shelter for the family, and/or treatment for moderately severe medical and mental health problems, and a code of 5 indicating physical neglect characterized by a caregiver's gross inattention to children's needs resulting in malnutrition, permanent disability, or death. Almost half (47.2%) of the youth had experienced physical neglect, and among those youth, the average severity score was 2.4. The average severity for the whole sample (including those with no physical neglect who received scores of 0) was 1.1 ($SD = 1.4$). Intervention and control groups did not differ on severity ratings ($t(142) = -.06; p = .95$).

Intervention Status was used to index whether children were randomly assigned to the control or intervention condition. The current study includes 76 children randomized to the intervention condition and 68 children randomized to the control group. All children randomized to the intervention condition, regardless of whether they started or completed the FHF program, were included in intent-to-treat analyses.

Dependent Variables

The dependent variables described below were assessed at baseline and T3. Program effects on the dependent variables, which were previously reported in a paper that described the main effects of the FHF program on mental health and related outcomes (Taussig & Culhane, 2010), are also summarized below. Program effects are described using Cohen's d , which represents the covariate adjusted mean difference between intervention and control groups divided by the pooled standard deviation.

Mental Health Functioning was assessed using a multi-informant index created based on principal components factor analysis of the following variables: (1) mean scores on the Trauma Symptom Checklist for Children (TSCC; Briere, 1996), a widely-used, symptom-oriented, youth-report measure of mental health problems, (2) the Internalizing scale of the

Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) completed by children's caregivers, and (3) the Internalizing Scale of the Teacher Report Form (TRF; Achenbach & Rescorla, 2001) completed by children's teachers. The CBCL and TRF are widely-used standardized measures of child emotional and behavior problems (Achenbach & Rescorla, 2001). At T3, the first principal component explained 42% of the variance in these three measures, and factor loadings on the first principal component, which ranged from .59–.70, were used to create a mental health composite score. The intervention had a strong effect (Cohen's $d = .51, p = .003$) on the T3 mental health composite score, such that intervention youth, relative to control youth, had fewer mental health problems, as reported by themselves, their parents/caregivers, and teachers (Taussig & Culhane, 2010).

Positive and Negative Coping Skills were assessed based on youth-report using The Coping Inventory (TCI; Dize-Lewis, 1988). The TCI asks youth to report how frequently they use each of 42 strategies for coping with problems. In a study of middle school youth, the TCI demonstrated exceptional test-retest reliability (eleven-week, $r = .98$) and was reliably correlated with a number of related measures, including self-report of anxiety and depression, and teacher-report of coping skill. In the current study, the TCI yielded scores on two project-developed subscales measuring positive and negative coping. Although non-significant, intervention effects were in the expected direction for both the positive (Cohen's $d = .25, p = .15$) and negative (Cohen's $d = .21, p = .16$) coping subscales (Taussig & Culhane, 2010).

Social Acceptance and Global Self-Worth were assessed using The Self-Perception Profile for Children (SPC; Harter, 1982, 1985a), a widely-used self-report measure of perceived self-competence. The scales have demonstrated adequate reliability and validity (Harter, 1985b). In our work with foster youth, baseline scores on the Behavioral Conduct and Social Acceptance subscales were reliably related to all indices of risk behavior six years later, after controlling for demographic characteristics and baseline functioning (Taussig, 2002). Intervention effects on the Social Acceptance (Cohen's $d = .17, p = .30$) and Global Self-Worth (Cohen's $d = .19, p = .23$) scales were non-significant (Taussig & Culhane, 2010).

Social Support was indexed using a short form of the People in My Life Measure (PML; Cook, Greenberg & Kusche, 1995; Gifford-Smith, 2000). The PML is a 30-item self-report measure, which asks children to rate the quality of the support they receive from parents and peers. The short form demonstrated high internal consistency (α s from .80 to .83) and reliably discriminated between samples of high risk and normative children (Gifford-Smith, 2000). In the current study, The PML was used to assess perceived support from caregivers, peers, and mentors. These three subscales were factor analyzed using principal components factor analysis. The first principal component explained 45% of the variance in these three scales. Factor loadings on the first principal component, which ranged from .63–.74, were used to create a composite index of social support. The intervention did not have an impact on this composite index at T3 (Cohen's $d = .02, p = .89$; Taussig & Culhane, 2010).

Perceived Opportunities was measured using a modified version of a scale included in the National and Denver Youth Surveys (Huizinga & Esbensen, 1990). Twelve items assess youths' perception of their opportunities for success (e.g., Do you think you will have

enough education to be what you want when you grow up?”). Huizinga & Esbensen report that the scale demonstrates adequate internal consistency (on average, across measurement waves, $\alpha = .65$). Although not previously reported, the intervention did not have an effect on perceived opportunities at T3 (Cohen’s $d = .11$, $p = .51$).

Quality of Life was measured using a modified version of a scale developed by Andrews & Withey (1976), which asks respondents to rate satisfaction in several different domains (e.g. school, home, health, friendships). The authors report that the original items demonstrate good internal consistency and construct validity. Intervention effects on quality of life at T3 were non-significant (Cohen’s $d = .14$, $p = .38$; Taussig & Culhane, 2010).

Statistical Analyses

Means, medians, and standard deviations were used to describe program attendance for the whole group. Correlations were used to determine whether program attendance varied as a function of physical neglect severity. Multiple regression was first used to estimate the associations between physical neglect severity and T1 measures of mental health and related outcomes, after controlling for maximum abuse severity. Multiple regression was then used to test the hypotheses that severity of physical neglect would moderate intervention effects on mental health and related outcomes measured 6 months post-intervention. The regression models examining possible moderator effects included the following variables: the baseline measure of the outcome variable, maximum abuse severity, intervention status, physical neglect severity, and the interaction between physical neglect severity and intervention status. Sample sizes for each analysis varied slightly due to missing data on outcome variables.

Results

Program Attendance

On average, children attended 25.0 (Median=26.5, $SD=5.8$) of the 30 skills groups and 26.7 (Median=28, $SD=6.25$) of the 30 mentoring visits. These numbers include data from children who withdrew from the program ($n=5$). Physical abuse severity was not related to the number of skills group sessions attended, but there was a non-significant trend suggesting that children with higher levels of physical neglect severity completed more mentoring visits ($r = .21$, $p = .07$).

Overlap between Physical and Supervisory Neglect and Other Types of Maltreatment

Table 1 shows the prevalence of different maltreatment types within the total sample, within the subsample that experienced physical neglect, and within the subsample that experienced supervisory neglect. As shown, there were high rates of overlap between each of the neglect subtypes and other types of maltreatment. A large majority of children with physical neglect had experienced supervisory neglect, while just over half of the children with supervisory neglect had also experienced physical neglect. The most salient finding was that 4% of the sample had experienced physical neglect only and 11% had experienced supervisory neglect only.

Associations Between Neglect and Baseline Measures of Outcomes

Before conducting regression equations, we examined correlations among the predictor variables and then correlations among the dependent variables. Maximum abuse severity and physical neglect severity were not correlated, $r = -.12$, $p = .15$. Correlations between the 8 predictor variables ranged from $r = .06$ to $r = .52$, with an average correlation of $.28$. Not surprisingly, correlations were greater among indices from the same measure. Next, we examined the T1 associations between severity of physical neglect and each of the 8 dependent variables, controlling for maximum abuse severity (reported in Table 2). Severity of physical neglect was significantly associated with social acceptance, such that higher levels of severity were associated with lower levels of social acceptance, $F(1,142) = 14.98$, $p < .001$. A non-significant trend suggested that higher levels of physical neglect severity might also be associated with greater levels of mental health problems, $F(1,143) = 3.50$, $p = .06$.

Moderation Analyses

Because the FHF program had demonstrated beneficial effects on a number of psychosocial domains (as delineated above), moderation analyses sought to examine whether the impact of the intervention on these outcomes differed as a function of severity of neglect. The moderation analyses did not suggest that FHF program effects were stronger among youth who had experienced greater physical neglect severity. Physical neglect severity did not moderate intervention effects on any of the 8 outcomes variables measured at T3. Effect sizes were small (r^2 s ranging from $.00$ to $.02$), suggesting that our failure to find evidence of moderation was not solely attributable to the fact that the study was underpowered.

Discussion

Fostering Healthy Futures is a novel intervention for preadolescent maltreated youth in foster care. It was designed to ameliorate the negative impact of prior adverse experiences and to foster resilience among children with a wide range of functioning in cognitive, social, emotional, and behavioral domains. Although the program targeted children with diverse maltreatment experiences, it was hypothesized that the program might have more beneficial effects for children with histories of neglect, as the mentoring and skills group program components might be particularly well suited for neglected children (Erickson & Egeland, 2011). Given the high rate of comorbidity among maltreatment types, however, it was not possible to isolate a neglected-only group within which to examine the impact of the FHF intervention. For this reason, we tested the hypothesis that intervention effects would be stronger among children with greater physical neglect severity.

Consistent with previous findings (e.g., English et al., 2005; Lynch & Cicchetti, 1998; Manly et al., 2001), we found that children who had experienced more severe physical neglect were less likely to feel socially accepted. The finding suggests that social skills and mentoring interventions which, by design, target social functioning, might be particularly beneficial for children who have experienced more severe physical neglect. Our findings regarding moderation, however, did not support this hypothesis. After controlling for the severity of abuse, we did not find any evidence to suggest that program effects were

moderated by physical neglect severity. This finding is contrary to the findings of other studies, which suggest that interventions may have stronger effects for higher risk participants. Our failure to find evidence of moderation may be attributable to a number of factors. First, it is possible that those with the most severe neglect are actually not the children at highest risk. Some studies find that abuse is a stronger predictor of mental health outcomes than neglect (e.g., Lau et al., 2005; Toth, Manly, & Cicchetti, 1992). For this reason, we controlled for maximum abuse severity when conducting all analyses, but still did not find a moderation effect. Second, our measure of physical neglect severity may not be comprehensive. Although we coded maltreatment with the most widely-used coding system (The Maltreatment Classification System; Barnett, et al., 1993), the data are limited by the information contained in the documents we coded, which did not include information about distal neglect and which may not have reliably documented all of the more recent neglect experienced by participants. Future studies should employ multiple methods (for example, youth, parent, and caseworker reports coupled with records) to code the occurrence, severity, and chronicity of neglect. Finally, although statistical power may have limited our ability to find a significant interaction effect, the effect sizes associated with the interaction terms were quite small, suggesting that any power limitations did not mask important effects.

There is a dearth of literature examining the impact of neglect on psychosocial functioning and even fewer intervention studies targeting its deleterious consequences. The current study's findings did not support the hypothesis that the Fostering Healthy Futures preventive intervention would be more efficacious for children with more severe physical neglect histories, suggesting that we may need more targeted interventions to promote well being among children who have experienced severe physical neglect.

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Table 1

Rates of Maltreatment Types for the Total Sample and within the Physical and Supervisory Neglect Subsamples

Maltreatment Type	Total Sample N=144	Physical Neglect Subsample n = 68	Supervisory Neglect Subsample n =109
Physical Abuse	33%	29%	28%
Sexual Abuse	12%	10%	11%
Moral/Legal Maltreatment	35%	44%	41%
Emotional Maltreatment	62%	63%	68%
Educational Neglect	28%	38%	30%
Physical Neglect	47%	--	53%
Supervisory Neglect	76%	85%	--
No Other Type	--	4%	11%

Table 2

Associations Between Severity of Physical Neglect and Baseline Measures of Outcome Variables, Controlling for Maximum Abuse Severity

	Severity of Physical Neglect	
	Partial Correlation	<i>p</i> value
Mental Health Problems	.16	.06
Positive Coping	-.01	.86
Negative Coping	.04	.65
Social Acceptance	-.31	.00
Global Self Worth	-.13	.11
Social Support Factor Score	-.05	.52
Perceived Opportunities	-.10	.22
Quality of Life	-.08	.32