



## Mental health services for children and caregivers remaining at home after suspected maltreatment



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### ABSTRACT

**Objective:** Behavioral problems are common among children remaining at home after suspected maltreatment, but the effectiveness of current mental health services to improve these behavioral problems is unknown. The objective was to determine whether receipt of child and caregiver mental health services was associated with improvements in behavioral problems in maltreated children remaining at home.

**Methods:** We retrospectively analyzed Second National Survey of Child and Adolescent Well-being data. We included 1117 children ages 2–17 remaining at home after a maltreatment investigation, excluding children with missing outcome, covariate, or survey weight data. We compared mean Child Behavioral Checklist (CBCL) change scores from baseline to 18 months between children who did and did not receive mental health services, before and after adjusting for child, caregiver, and child welfare agency factors using survey-weighted linear regression.

**Results:** Nearly one-quarter (22.6%) of children and 16.0% of caregivers received mental health services. Children receiving services had worse unadjusted baseline and 18-month CBCL scores than children not receiving services (all  $P < 0.001$ ). Adjusted CBCL change scores revealed behavioral worsening among children receiving services but improvement among children not receiving services (all  $P < 0.001$ ). However, children had improved behavior, regardless of their own service receipt, if their caregivers received services and reported an absence of depression at 18 months.

**Conclusions:** Children receiving mental health services had worse behavioral changes than children not receiving services. Caregiver receipt of services was associated with improved child behavior, suggesting that a family-centered approach may be most influential in improving behavioral outcomes among this population.

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### 1. Introduction

Over 2 million children are investigated annually by U.S. child welfare agencies for suspected maltreatment (Child Maltreatment, 2012). The majority of these children remain at home after investigation and have mental health problems that persist for years (Davidson-Arad, 2005; Campbell, Thomas, Cook, et al., 2012). While prior research has identified patterns and predictors of mental health services utilization among children investigated by child welfare (Horwitz, Hurlburt,

Goldhaber-Fiebert, et al., 2012), little is known about whether the services provided to children remaining at home are effective in improving their mental health outcomes.

There are reasons to suspect that mental health services for children remaining at home may have limited effectiveness. Although some mental health treatment modalities have demonstrated efficacy in improving child mental health outcomes in randomized controlled trials (Deblinger, Steer, & Lippmann, 1996), children involved with the child welfare system receive a range of services, not all of which have proven efficacy (Chaffin & Friedrich, 2004; Chadwick Center for Children and Families, 2004; Saunders, Berliner, & Hanson, 2004). Furthermore, interventions that are efficacious in clinical trials may not be effective when delivered in more naturalistic settings due to child, provider, and systems-level factors (Hoagwood, Hibbs, Brent, et al., 1995; Weisz, Donenberg, Han, et al., 1995). Maltreated children have been shown to have low rates of therapy completion, even after linking to mental health services (McPherson, Scribano, & Stevens, 2012). Finally, children

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remaining at home after suspected maltreatment are exposed to substantial risk factors for adverse mental health outcomes (Campbell et al., 2012) and these factors may influence the effectiveness of services.

One key risk factor is caregiver depression, which is prevalent in the child welfare population at rates exceeding that of the general population (Campbell et al., 2012). Caregiver depression has consistently been shown to negatively impact child well-being (Olfson, Marcus, Druss, et al., 2003; Burns, Mustillo, Farmer, et al., 2010), and research suggests that child mental health services may be limited in their effectiveness if caregiver mental health problems are not addressed (Southam-Gerow, Kendall, & Weersing, 2001; Weems & Scheeringa, 2013). Furthermore, caregiver mental health treatment has demonstrated positive effects on child mental health. Trauma-focused cognitive behavioral therapy provided to caregivers has led to improvements in child externalizing behavior and depression (Deblinger et al., 1996). In child welfare-involved families, caregiver receipt of mental health services has mitigated the negative impact of caregiver depression on child behavior (Burns et al., 2010).

Given uncertainty about the effectiveness of current mental health services for child-welfare involved families, the objective of our study was to determine whether receipt of child and caregiver mental health services was associated with improvements in behavioral problems in a nationally representative sample of children remaining at home after an investigation for suspected maltreatment. We hypothesized that child and caregiver mental health services would be independently associated with improvements in child behavior over an 18-month period.

## 2. Methods

### 2.1. Study design

We conducted a retrospective analysis of Second National Survey of Child and Adolescent Well-being (NSCAW II) General Release data, a longitudinal cohort study of 5872 children who had investigations for suspected maltreatment completed by U.S. child welfare agencies from 2/2008 to 4/2009. NSCAW II used a two-stage stratified sampling strategy to provide national estimates of children involved with the child welfare system. Data were collected from children, caregivers, and child welfare caseworkers at baseline and 18 months after investigation closure. Per NSCAW II protocol, baseline interviews with children and caregivers were initiated at least 45 days after investigation closure. Data were collected at a single timepoint from child welfare agency directors beginning in 5/2009 (Dowd et al., 2011). We limited our analyses to children 2–17 years old at baseline who remained at home from the onset of investigation through 18 months. We excluded children less than 2 because the primary outcome, derived from the Child Behavioral Checklist (CBCL), was not measured in children < 18 months (Dowd et al., 2011). We also excluded children with missing outcome, covariate, or survey weight data.

### 2.2. Variable specification

The outcome measures were derived from caregiver-reported CBCL scores at baseline and 18 months. The CBCL, a widely used, well-validated instrument, measures the frequency of child behavioral problems as a proxy for child mental health (Achenbach & Rescorla, 2000a; Achenbach & Rescorla, 2000b). The CBCL generates age-standardized total, externalizing, and internalizing behavioral problem scores, with higher scores indicating more problems (Dowd et al., 2011; Achenbach & Rescorla, 2000a; Achenbach & Rescorla, 2000b; National Survey of Child and Adolescent Well-Being II, 2011). The primary outcome was the change in total CBCL score from baseline to 18 months, with positive scores indicating worsening behavior and negative scores indicating improving behavior. The secondary outcomes were externalizing and internalizing CBCL change scores, and the

percentage of children with clinically significant behavioral problems at 18 months, defined as CBCL score  $\geq 64$  (National Survey of Child and Adolescent Well-Being II, 2011).

The primary exposures were child and caregiver receipt of mental health services. Children were classified as having received mental health services if their caregivers endorsed at 18 months that their child had received help within the last 12 months for an emotional, behavioral, learning, attention, or substance abuse problem from a day treatment program, mental health or community health center, private professional, in-home professional, or school-based professional. Since we were interested in the impact of outpatient mental health services, we did not include services received from a psychiatric hospital, medical psychiatric unit, medical inpatient unit, emergency room, or inpatient drug/alcohol unit. We focused on specialty and school-based mental health services as these are the most common sites for children overall to receive mental health care (Horwitz et al., 2012; Farmer, Burns, Phillips, et al., 2003). Therefore, we did not include mental health services received from the general medical sector. In a sensitivity analysis, we found that broadening our definition of mental health services to include this latter category did not change the main study results, and thus we present only the results using the narrower definition. Caregivers were classified as having received mental health services if they endorsed at 18 months that they had received day treatment, partial hospitalization, or professional psychological counseling or therapy for a mental health, emotional, or drug/alcohol problem in the last 12 months. Caregiver mental health services from a hospital, medical facility, or emergency room were not included.

The covariates included child, caregiver, and child welfare agency factors. While the majority of selected covariates have been shown to be associated with mental health services utilization and outcomes (Horwitz et al., 2012; Cohen & Mannarino, 1996; Bai, Wells, & Hillemeier, 2009), we also included covariates for which there is a theoretical basis but not empirical data to support an association. Child factors included gender, age, race/ethnicity, maltreatment type, case substantiation status, and baseline CBCL scores. Maltreatment type was collected at baseline from caregivers using an adapted version of the Parent–Child Conflict Tactics Scale (National Survey of Child and Adolescent Well-Being II, 2011; Straus, Hamby, Finkelhor, et al., 1998). Caseworkers categorized cases as substantiated or unsubstantiated. Caregiver factors included drug or alcohol problems, interpersonal violence (IPV), and depression assessed at baseline and 18 months. Caregivers were classified as having a drug or alcohol problem if they had a score of  $\geq 5$  on the Alcohol Use Disorders Identification Test or Drug Abuse Screening Test-20 at baseline or 18 months (Rumpf, Hapke, Meyer, et al., 2002; Cocco & Carey, 1998). Caregivers were classified as experiencing IPV if they endorsed at baseline or 18 months that their partner had physically assaulted them in the last 12 months based on questions from the Revised Conflict Tactics Scale 2 (Straus, Hamby, Boney-McCoy, et al., 1996). Caregivers were classified as depressed if they endorsed dysphoria or anhedonia for a 2-week period in the last 12 months and  $\geq 3$  depressive symptoms in response to questions from the Composite International Diagnostic Interview Short Form (Kessler, Andrews, Mroczek, et al., 1998). Agency factors included availability of child and adult mental health services and presence of a mental health assessment policy as reported by agency directors at baseline. Directors separately rated the availability of child and adult mental services on a 5-point Likert scale ('not at all' to 'very adequate').

### 2.3. Analysis

Sampling weights were applied to provide unbiased national estimates of population parameters. Exposure variables, covariates, and outcome measures were summarized using means and percentages, each with 95% confidence intervals (CI). We also compared the distribution of these variables between children and caregivers by receipt of mental health services using Pearson chi-squared tests (corrected using

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