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# The Relationship Between Child Welfare Involvement and Mental Health Outcomes of Young Children and Their Caregivers Receiving Services in System of Care Communities

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## Abstract

This study examined how young children entering mental health system of care services who were involved with the child welfare system compared to children with no such involvement in (a) descriptive characteristics and (b) selected outcomes 6 months after entry into such services. The characteristics of the two groups were similar, although children involved in child welfare were exposed to more factors that put them at risk for mental health problems. Children involved with child welfare were more anxious or depressed, which suggests the need for early trauma assessment and trauma-informed services. Surprisingly, children involved with child welfare were more likely to have improved behavior compared to children not involved with child welfare, after other factors were taken into account. One interpretation suggested is that caregivers involved with the child welfare system experienced more oversight, support, and services (they reported receiving case management and family preservation services more frequently).

## Keywords

child welfare, early childhood, children's mental health

Early childhood is a critical period for laying the foundation for emotional development and for future social and cognitive learning. An increasing body of evidence indicates that the emotional and behavioral challenges observed in early childhood are linked to various emotional, social, and behavioral outcomes in later life (Fox & Smith, 2007). Therefore, paying attention to the mental health needs in these formative years is critically important. It is even more critical for young children involved with child welfare because of their unique vulnerabilities.

The national *Child Maltreatment* report (U.S. Department of Health and Human Services [HHS], 2010) estimates that approximately 3.7 million children were investigated or assessed by child protective service agencies during FY 2008 and that approximately 20% of these children were found to be victims of abuse and neglect. The report specifies that 56.2% of children found to be victims of abuse and neglect were younger than 7 years old. Children younger than 5 years old constitute the largest age group entering the child welfare system and have the highest rates of abuse and neglect of all children entering the child welfare system (Leslie et al., 2005; Stahmer et al., 2005).

Children in the child welfare system are particularly vulnerable to mental, emotional, and behavioral problems because of exposure to multiple risk factors related to the abuse and neglect as well as other environmental factors (e.g., domestic violence, parent with mental health issues, substance abuse). A national survey on mental health needs and access to mental health services by children involved with the child welfare system reports that 47.9% ( $n = 3,803$ ) of the children and youth ages 2 to 14 years old with completed child welfare investigations had clinically significant emotional or behavioral problems (Burns et al., 2004). A recent multisite prospective study on the prevalence of behavioral and mental health disorders

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of youth in the child welfare system revealed that a much higher proportion of those youth exhibited signs of severe emotional and behavioral disorders than youth not involved with the child welfare system (Baker, Kurland, Curtis, Alexander, & Papa-Lentini, 2007).

Recent findings on mental health service use of children involved with the child welfare system show that there is a potential benefit to increasing the use of specialized mental health services by this group, particularly for younger children (Hurlburt et al., 2004). However, the results of that study also show that many children with clinically significant challenges are not receiving much-needed mental health services.

The system of care approach to mental health service provision provides a means of identifying and addressing the mental health needs of young children. This approach asserts that the services children and their families receive must be integrated among child-serving agencies and based on collaborative agreements (Pires, 2002). System of care communities promote partnership between consumers and child-serving agencies to produce an effective system of services that are family driven, youth guided, community based, individualized, strengths based, and culturally competent (HHS, 2007). Systems of care promote early identification and intervention for children with emotional and behavioral needs and enhance the likelihood of positive outcomes (HHS, 2003).

An increasing proportion of children and youth served by systems of care in communities throughout the United States are younger than 8 years old (HHS, 2006). In addition, several communities have recognized the importance of identifying and addressing serious emotional disturbances in children when they are very young and are implementing interventions that focus on young children. Often, these communities encounter young children who have multiple risk factors (e.g., high-risk home environments, exposure to abuse or neglect, other stressful life circumstances) in addition to having serious mental health needs. It is likely that many of these children are already involved with or are in need of services from the child welfare system as well as the mental health system.

Despite high levels of need shown over the years, limited findings are available regarding mental health service use among children involved with the child welfare system and their differential outcomes as compared to children not involved with child welfare (Hurlburt et al., 2004). Because interagency collaboration is a core principle of the system of care approach, system of care communities are supposed to work closely with local child welfare systems. Therefore, examining the possible differential outcomes for young children with severe emotional disturbance within the context of child welfare involvement can shed light on areas of significant difference that require attention by both child welfare and system of care communities to improve the outcomes of these high risk children.

This study addresses two research questions about young children entering system of care services who are involved

with the child welfare system and how they compare to those children with no such involvement: (a) What are the similarities and differences in the descriptive characteristics of children younger than 6 years old with and without child welfare involvement? and (b) Were there differential outcomes for children with and without child welfare involvement and their families 6 months after entry into services? Given the available data, most of the analyses were focused on the descriptive comparison addressed in Research Question 1. The findings regarding Research Question 2 are considered to be exploratory.

Findings are based on descriptive and longitudinal data collected as part of the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program (the Child Mental Health Initiative; CMHI) in communities funded from 2002 through 2004. This program, funded by the Center for Mental Health Services at the Substance Abuse and Mental Health Services Administration, provides grants and cooperative agreements to states, territories, localities, and tribal communities to develop comprehensive, community-based mental health services for children with serious emotional disturbance and their families. To be eligible for system of care services, children and youth must (a) have a *Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV)*; American Psychiatric Association, 1994) or Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood diagnosis, (b) function poorly at home, in school, or in the community, and (c) be younger than 22 years old. Some grant communities have more targeted eligibility criteria for their systems of care. Referrals from other agencies are the most common way children and families enter system of care services. However, families have referred themselves and individuals have referred families.

## Method

Two major study components of the CMHI national evaluation are the Cross-sectional Descriptive Study (Descriptive Study) and the Longitudinal Child and Family Outcome Study (Outcome Study). The Descriptive Study examines the demographic characteristics of youth enrolled in funded systems of care, such as their functional status, living arrangements, risk factors, and mental health service history. Descriptive data are collected on all children and families receiving services. The Outcome Study examines how involvement in a system of care affects children's and youths' clinical and functional status and family life. Outcome Study data are used to assess change over time in symptomatology and social functioning. The present analysis uses data from both of these components of the national evaluation to assess the characteristics and behavioral status of young children involved with the child welfare system as well as the effects on their families.

**Table 1.** Percentage of Sample Involved With Child Welfare by Child Welfare Criteria Used

Criterion	Description	<i>n</i>	%
1	Child welfare was the referring agency	421	80.7
2	Child welfare staff were involved in developing the child's service plan	85	16.3
3	Child received services from child welfare or the social service agency in the first 6 months of entry into services	57	10.9
4	Child was in foster care placement, or had a relationship with or lived with a foster parent within the 6 months before intake	326	62.5
5	Child received therapeutic foster care services or lived in a specialized foster home within the first 6 months of services	13	2.5
6	Child had ever been physically or sexually abused in the past	55	10.5
7	Child was a legal ward of the state	21	4.0

### Participants

The participants in this study are 912 children younger than 6 years old with serious emotional disturbance and their families receiving services supported by the CMHI. The study sample was separated into two subsamples: children with child welfare involvement and children without child welfare involvement. For the analysis, inclusion in the child welfare sample (i.e., having some child welfare involvement) was determined by meeting one or more of the following criteria at intake (and 6 months after entry for some variables as indicated below): (a) child welfare was the referring agency; (b) child welfare staff were involved in developing the child's service plan; (c) the child received services from child welfare or a social service agency during his or her first 6 months of receiving system of care services; (d) the child was in foster care placement, had a relationship with a foster parent, or lived with foster parents at any time during the 6 months before intake (including at the time of intake); (e) the child was receiving therapeutic foster care services or lived in a specialized foster home; (f) the child had ever been physically or sexually abused; and (g) the child was a legal ward of the state. Of the 912 child participants in the study, 522 (57%) were determined to have involvement with child welfare according to these criteria. Table 1 shows the breakdown of the sample involved with child welfare by each criterion.

### Community Characteristics

The sample of study participants was drawn from 28 system of care communities that were awarded grants from 2002

to 2004. The catchment areas where these grant-funded programs were located varied in size and geographic characteristics. A majority of these programs were located in urban communities or in a combination of urban and rural communities (as defined by the U.S. Census Bureau). Systems of care were implemented in six large metropolitan cities, three states (i.e., statewide), eight multiple-county areas, three tribal communities, two U.S. territories, and rural communities.

In terms of programmatic structure and focus population, about two thirds of the communities considered children ages 0 to 5 years old to be eligible for the program, and one of these communities served this age group exclusively. Nearly one third of the communities focused their services on children who were at risk for out-of-home placement. One community exclusively served children who received services from the child welfare system. Although grant communities established organizational structures and service delivery approaches in several different ways, a common goal among communities was to develop integrated community-based mental health services through enhanced interagency collaboration, coordination, and service integration efforts. In addition, communities aimed to provide a broad array of culturally relevant mental health and other related services, treatments, and supports that incorporated evidence-based interventions and practices.

### Data Collection Procedures

Descriptive information on children and families receiving system of care services were collected through administrative intake record reviews or in-person interviews with the children's caregivers. The interview respondent was the person in a caregiving role in the child's life who had had the most interaction with the child in the past 6 months. Local evaluation staff conducted interviews with caregivers within 30 days of entry into services (at baseline) and at five 6-month intervals thereafter. Consent was obtained from caregivers of children eligible for these interviews. Caregivers received incentives for their participation, the amounts of which were determined by each community.

### Measures

Child and family descriptive information was drawn from the *Enrollment and Demographic Information Form* (EDIF; baseline), the *Caregiver Information Questionnaire* (CIQ; baseline and follow-up), and the *Living Situations Questionnaire* (LSQ; baseline). The EDIF and CIQ, developed specifically for the national evaluation, are used to collect basic demographic information. The EDIF contains 16 items that describe demographic, diagnostic, and enrollment information and is collected through administrative records for all children receiving CMHI services. Information such as age, gender, and referring agency is obtained through the EDIF.



The CIQ is part of the longitudinal interview protocol. The baseline version of the CIQ contains 39 items with subparts that describe the child and family, including information on factors considered to place children at risk for mental health disorders. This article examines three categories of risk factors: (a) child risk factors (i.e., history of sexual, physical, and/or substance abuse; runaway; suicide attempt), (b) family risk factors (i.e., a family member's diagnosis of mental illness, drinking or drug problem, or involvement with crime), and (c) household risk factors (i.e., child's exposure to domestic violence, a household member's diagnosis of mental illness, drinking or drug problem, or history of involvement with crime). Other information collected includes family composition, custody status, presenting problems, mental health status, and service use history. The follow-up version of the CIQ contains a reduced number of items because some questions are not repeated at follow-up. The LSQ, a modified version of the *Restrictiveness of Living Environments Scale* (Hawkins, Almeida, Fabry, & Reitz, 1992), documents the physical setting in which the child or youth lived during the 6 months prior to the interview (e.g., home, foster home, group home, emergency shelter) and with whom the child was living in that setting.

To identify and compare the types of services received by young children with and without child welfare involvement, data obtained by the *Multi-Sector Services Contacts* (MSSC; follow-up) were examined. The MSSC, completed only during follow-up interviews, identifies the services received, the service settings, and the location, frequency, and sequence of services for 22 different types of services (e.g., case management, evaluation and assessment, therapeutic, crisis management, family preservation services, family support, residential treatment). The MSSC also assesses the caregiver's perceptions about whether services received met the child's and family's needs.

Data obtained from the *Child Behavioral Checklist for Ages 1½–5* (CBCL 1½–5; baseline and follow-up), which measures behavioral and emotional problems in children ages 1½ to 5 years old, were analyzed to determine whether there are differences in outcomes among young children with and without child welfare involvement. For this instrument, caregivers report on 99 problem items by indicating the degree to which each statement (e.g., cruelty to animals) describes their child. Response options are *not true* (0), *somewhat or sometimes true* (1), and *very true or often true* (2). Using a national sample and large clinical samples as norms, the checklist produces seven narrowband syndrome *T*-scores, two broadband syndrome *T*-scores (Internalizing and Externalizing), and a Total Problems *T*-score.

The test-retest reliabilities for the Internalizing and Total Problems scales are both .90, whereas the Externalizing scale has a test-retest reliability of .87. The CBCL 1½–5 demonstrates adequate content, criterion-related, and

construct validities using a variety of techniques (Achenbach & Rescorla, 2000).

To assess the extent to which caregivers' strain and levels of satisfaction with services differ between young children involved or not involved with child welfare, data collected using the *Caregiver Strain Questionnaire* (CGSQ; baseline and follow-up) and the *Youth Services Survey for Families* (YSS-F; follow-up) were examined. The CGSQ contains 21 items that assess strain experienced by caregivers in the past 6 months related to the care of a child with emotional and behavioral challenges. It is composed of three related dimensions of caregiver strain: Objective Strain (e.g., observable disruptions in family life), Subjective Internalizing Strain (e.g., negative internalized feelings such as worry or guilt), and Subjective Externalizing Strain (e.g., negative externalized feelings such as anger and resentment). Response options for the CGSQ scale items are scored on a 5-point scale ranging from *not at all* (1) to *very much* (5), indicating the degree to which that item was a problem in the previous 6 months. The CGSQ has demonstrated good reliability and validity in previous research (Brannan, Heflinger, & Bickman, 1998; Heflinger, Northrup, Sonnichsen, & Brannan, 1998).

The YSS-F assesses service satisfaction across five domains: access, participation in treatment, cultural sensitivity, satisfaction, and outcomes (Brunk, Koch, & McCall, 2000). The responses are based on caregiver report of service experiences over the past 6 months, and responses indicate the caregiver's level of agreement with statements about the family's service experiences. The YSS-F contains 21 items whose response options are scored on a 5-point scale ranging from *strongly disagree* (1) to *strongly agree* (5) and an open-ended question.

### Data Analysis

Descriptive analyses for answering the first research question (i.e., What are the similarities and differences in the descriptive characteristics of children younger than 6 years old with and without child welfare involvement?) were conducted on data collected at intake to examine differential characteristics of children and families (with and without child welfare involvement) entering systems of care. Comparative analyses were conducted using chi-square and *t* test statistics to determine differences in baseline demographic and clinical characteristics of children and families involved with and not involved with the child welfare system. Ordinary least squares regression analysis was also used to examine the relationships between baseline levels of outcome variables and explanatory characteristics.

To answer the second research question (i.e., Were there differential outcomes for children with and without child welfare involvement and their families 6 months after entry into services?), several multivariate statistical methods were

used to examine changes in outcomes from intake to 6 months for the subset of children and caregivers for which those data were available. Specifically, reliable change index (RCI) scores were calculated to assess levels of improvement over time. The RCI (Jacobson, Roberts, Berns, & McGlinchey, 1999; Jacobson & Truax, 1991; Speer & Greenbaum, 1995) is used to assess whether individual behavioral or emotional change over time is clinically significant. This statistic compares a respondent's scores at two different points in time, adjusting for the reliability of the measure, and indicates whether a change in scores shows clinically significant improvement, stability, or deterioration. In addition, logistic regression analyses were conducted to assess demographic and family factors that might contribute to differences in outcomes and whether the odds of improvement differed based on subgroup. Because of missing data and variations in descriptive data collection across communities, the number of children for whom data were available varied across analyses (as described in the following section).

## Results

Data from administrative records were available for 912 children younger than 6 years old who were enrolled in system of care services in 28 communities funded from FY 2002 to 2004. Of these, 522 (57.2%) had some level of child welfare involvement before or at the time of enrollment (according to the criteria described previously) and 390 (42.7%) had no such child welfare involvement. Data were available from 222 caregivers, of children both involved and not involved with child welfare, who completed a baseline interview and from 113 caregivers who also completed a 6-month follow-up interview.

### *Research Question 1: What Are the Characteristics of Young Children and Their Families Involved With and Not Involved With Child Welfare?*

**Child age and gender.** Data on gender and age obtained from 911 children are displayed in Figure 1. Overall, children ages 1 to 3 years old, both involved with child welfare and not involved with child welfare, represented a smaller proportion of the children (33.2%) compared to 4- and 5-year-olds (53.8%). Children in the child welfare subset were significantly younger than in the subset of children not involved with child welfare ( $t = 7.3, p < .001$ ); the average ages were 2.9 and 3.7, respectively. Especially noteworthy, children younger than 1 year old were better represented in the child welfare subset (18.4%) than in the subset of children not involved with child welfare (6.2%). Boys were also significantly older than girls overall, but the age distributions of boys and girls either involved or not involved with child welfare were similar.

**Race/ethnicity.** Data on the race/ethnicity of the children in the analysis sample are shown in Table 2. The race/ethnicity distributions of children involved and not involved with child welfare were significantly different ( $\chi^2 = 23.1, df = 7, p < .01$ ). This significant result is driven by the difference among Hispanics, in that a significantly higher proportion of the children involved with child welfare were Hispanic than of the children not involved (44.3% and 31.0%, respectively).

**DSM-IV diagnosis.** Children involved with child welfare were significantly less likely than other children to be diagnosed with attention-deficit/hyperactivity disorder (ADHD;  $\chi^2 = 7.1, df = 1, p < .01$ ), oppositional defiant disorder ( $\chi^2 = 6.5, df = 1, p < .05$ ), disruptive behavior disorder ( $\chi^2 = 7.4, df = 1, p < .01$ ), and an anxiety disorder other than posttraumatic stress disorder or acute stress disorder ( $\chi^2 = 7.4, df = 1, p < .05$ ; see Table 2). They were, however, significantly more likely to be diagnosed with an "other" diagnosis such as a reactive attachment disorder of infancy or early childhood ( $\chi^2 = 7.4, df = 1, p < .01$ ). The pattern in diagnoses is related, in part, to the fact that the children involved with child welfare were younger than the children not involved with child welfare.

All children in the study sample could be associated with multiple diagnoses. Children involved with child welfare had fewer diagnoses on average (1.1) than children not involved with child welfare (1.3;  $t = 4.3, p < .001$ ). In fact, a much larger percentage of children involved with child welfare had not been given any diagnosis than children not involved with child welfare (19.6% vs. 3.1%). This finding may indicate that the child welfare system is not conducting mental health assessments as frequently as necessary, although it may also indicate that many more of the children in our study who were involved with child welfare were too young for a diagnosis to be assigned.

**Living placement at intake into system of care.** The types and numbers of living situations experienced by children involved with child welfare were not statistically significantly different from those of children not involved with child welfare. This finding indicates that the children represented in this study had stable living situations at entry into services, whether or not they had involvement in the child welfare system.

**Caregiver and family characteristics.** Caregiver and family characteristics provide context for the child's general environment and suggest vulnerabilities. Table 2 compares a number of these characteristics for children who were either involved or not involved with child welfare. Not surprisingly, 10.1% of children involved with child welfare had caregivers who were foster parents (a criterion for being identified as involved with child welfare) and 14.7% had caregivers who were grandparents, which is consistent with expanding child welfare initiatives to place children with a relative. In contrast, 20% more of the children who were not involved with

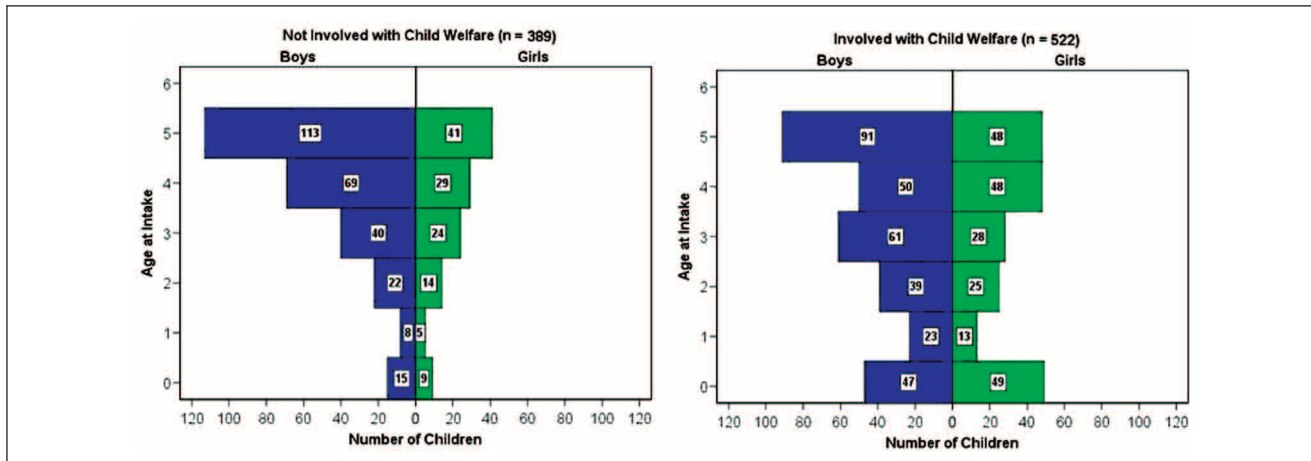


Figure 1. Child age and gender distribution by child welfare involvement

child welfare than of the children involved with child welfare had caregivers who were biological parents (89.0% and 69.0%, respectively). The differences in the caregiver's relationship to the child between children involved and not involved with child welfare were statistically significant ( $\chi^2 = 21.1$ ,  $df 7$ ,  $p < .01$ ). A similar pattern can be seen in the people who are legal custodians of the children in the sample. A greater proportion of the children not involved with child welfare than children involved with child welfare had legal custodians who were biological, step, or adoptive parents (38.0% vs. 22.3%, respectively), whereas a greater proportion of the children involved with child welfare had grandparents as legal custodians than children not involved with child welfare (9.2% vs. 2.2%, respectively).

Caregiver education levels in the child-welfare-involved subsample and the subsample without child welfare involvement were comparable. Of the caregivers of children with child welfare involvement, 80% had a high school diploma, general educational development (GED) credential, or higher education, as did 83% of the caregivers of children with no child welfare involvement. Household incomes were also similar in the two samples; approximately 53% of caregivers of children with child welfare involvement reported household incomes less than \$15,000, as compared to almost 50% of caregivers of children not involved with child welfare.

**Risk factors for development of mental health problems.** Exposure to multiple risks, or traumatic events, results in greater emotional and functioning problems than exposure to a single traumatic event (Garnefski & Diekstra, 1997; Manly, Kim, Rogosch, & Cicchetti, 2001). Thus, this study examined differences in both the numbers and types of risk factors experienced. Children involved with child welfare had more child risk factors related to involvement in child welfare (e.g., running away) than children not involved with child welfare ( $\chi^2 = 26.0$ ,  $df 1$ ,  $p < .001$ ). Several child risk factors are included

in the criteria used to identify a child as being involved with the child welfare system; thus, the frequencies of these risk factors were significantly different for the two comparison groups by definition. No additional child risk factors were experienced differently by the two groups of children.

Similarly, children involved with child welfare had more family risk factors (e.g., a biological family member with depression) than children not involved with child welfare ( $\chi^2 = 7.6$ ,  $df 1$ ,  $p < .01$ ). Two family risk factors were experienced to a greater extent by children involved with child welfare: (a) having a biological family member who had ever had a mental illness other than depression ( $\chi^2 = 8.2$ ,  $df 1$ ,  $p < .01$ ) and (b) having a biological family member who had ever had a drug or alcohol problem ( $\chi^2 = 7.9$ ,  $df 1$ ,  $p < .01$ ).

The same pattern holds for household risk factors (e.g., history of domestic violence;  $\chi^2 = 5.4$ ,  $df 1$ ,  $p < .05$ ). Children involved with child welfare also experienced several household risk factors to a greater extent than children not involved with child welfare. Three of these factors were similar to the family risk factors: (a) having a household member who had ever had depression ( $\chi^2 = 4.5$ ,  $df 1$ ,  $p < .05$ ), (b) having a household member who had ever had a mental illness other than depression ( $\chi^2 = 5.9$ ,  $df 1$ ,  $p < .05$ ), and (c) having a household member who had ever had a drug or alcohol problem ( $\chi^2 = 5.3$ ,  $df 1$ ,  $p < .05$ ). Children involved with child welfare had also been exposed to domestic violence at some time in the past more frequently ( $\chi^2 = 8.3$ ,  $df 1$ ,  $p < .01$ ).

In general, children involved with child welfare and their families appeared to have more risk factors than children and their families not involved with child welfare. This is consistent with research that suggests that although there is no single known factor that contributes to child abuse and neglect, the presence of multiple risk factors exponentially increases the potential for problems (McCrae & Barth, 2008). These findings are also consistent with research suggesting

**Table 2.** Caregiver and Family Characteristics at Intake Compared for Children with No Child Welfare Involvement and Child Welfare Involvement<sup>a</sup>

Characteristic		No child welfare involvement		Child welfare involvement		Total	
		<i>n</i>	% <sup>b</sup>	<i>n</i>	%	<i>n</i>	%
Child Race/Ethnicity*	American Indian or Alaska Native	25	6.5	22	4.2	47	5.2
	Asian	4	1.0	13	2.5	17	1.9
	African American	65	16.8	60	11.6	125	13.8
	Native Hawaiian or Other Pacific Islander	6	1.6	6	1.2	12	1.3
	White	148	38.2	171	33.0	319	35.2
	Hispanic	120	31.0	230	44.3	350	38.6
	Other	2	0.5	3	0.6	5	0.6
	Multiracial	17	4.4	14	2.7	31	3.4
DSM-IV Diagnosis	ADHD	71	22.0	69	14.7	140	17.7
	Oppositional Defiant Disorder	46	14.3	40	8.5	86	10.9
	Disruptive Behavior Disorder	42	13.0	34	7.2	76	9.6
	Anxiety Disorder Other Than PTSD or Acute Stress	24	7.5	15	3.2	39	4.9
	“Other” diagnoses	70	21.7	143	30.5	213	26.9
Caregiver Relationship to Child	Biological parent	81	89.0	89	69.0	170	77.3
	Grandparents	4	4.4	19	14.7	23	10.5
	Foster parent	0	0.0	13	10.1	13	5.9
	Other	6	6.6	25	19.4	31	14.3
Number of Child Risk Factors	0	374	95.9	451	86.7	825	90.7
	1	15	3.9	41	7.9	56	6.2
	2	1	0.3	23	4.4	24	2.6
	3 or more	0	0.0	5	1.0	5	0.6
Child Risk Factors	Ever physically abused	0	0.0	42	34.4	42	19.7
	Ever sexually abused	0	0.0	29	24.6	29	14.1
Number of Family Risk Factors	0	13	14.8	6	4.7	19	8.8
	1	23	26.1	27	21.3	50	23.3
	2	29	33.0	46	36.2	75	34.9
	3	23	26.1	48	37.8	71	33.0
Family Risk Factors	Biological family member ever had a mental illness other than depression	36	41.9	75	62.0	111	53.6
	Biological family member ever had a drug/alcohol problem	51	58.0	93	76.2	144	68.6
Number of Household Risk Factors	0	314	80.7	401	77.0	715	78.6
	1	18	4.6	15	2.9	33	3.6
	2	29	7.5	33	6.3	62	6.8
	3 or more	28	7.2	72	13.8	100	11.0
Household risk factors	Child ever exposed to domestic violence	33	36.3	69	56.1	102	47.7
	Household member ever had depression	58	65.2	97	78.2	155	72.8
	Household member ever had a mental illness other than depression	25	28.1	56	44.4	81	37.7
	Household member ever had a drug/alcohol problem	37	41.6	72	57.6	109	50.9

<sup>a</sup>Only statistically significant comparisons are included in this table.<sup>b</sup>The percentages sum to 100% within each column for each characteristic.



**Table 3.** Children's Emotional and Behavioral Problems and Caregiver Strain at Intake

Child Behavioral Checklist 1½–5 T-scores	Child welfare involvement status	<i>n</i>	<i>M</i>	<i>SD</i>
Internalizing	No child welfare involvement	85	63.65	10.76
	Child welfare involvement	112	66.36	9.44
	All children	197	65.19	10.10
Externalizing	No child welfare involvement	85	69.79	12.58
	Child welfare involvement	112	70.25	12.90
	All children	197	70.05	12.73
Total Problems	No child welfare involvement	85	67.38	11.20
	Child welfare involvement	112	69.31	10.81
	All children	197	68.48	10.99
Caregiver Strain Questionnaire dimensions	Child welfare involvement status	<i>n</i>	<i>M</i>	<i>SD</i>
Objective Strain	No child welfare involvement	92	2.51	1.00
	Child welfare involvement	129	2.59	1.07
	All children	221	2.56	1.04
Subjective Strain–Externalizing <sup>a</sup>	No child welfare involvement	92	2.29	0.91
	Child welfare involvement	128	1.91	0.84
	All children	220	2.07	0.89
Subjective Strain–Internalizing	No child welfare involvement	92	3.36	0.98
	Child welfare involvement	129	3.30	1.03
	All children	221	3.33	1.01
Global Strain	No child welfare involvement	92	8.16	2.42
	Child welfare involvement	128	7.80	2.55
	All children	220	7.95	2.50

a.  $t(186) = 3.21, p < .002$ .

that children in families and environments where risk factors such as history of mental illness, substance abuse, and domestic violence exist have a higher probability of experiencing child maltreatment and receiving child welfare services (Ethier, Couture, & Lacharite, 2004).

**Behavior problems at intake into system of care.** Table 3 shows the mean *T*-scores at intake for the two CBCL 1½–5 domains of internalizing and externalizing behavior, as well as total *T*-scores. All children combined had average *T*-scores at intake that exceeded the normal range for the CBCL 1½–5 (see Note 1). Children with child welfare involvement and children not involved with child welfare had comparable *T*-scores on the Total Problems scale as well as on the Externalizing and Internalizing scales.

The narrowband syndrome *T*-scores were also compared for the two groups of children. Only the Anxiety/Depressed subscale demonstrated a significant difference ( $t = 2.03, p < .05$ ). Children involved with child welfare were more anxious or depressed; the mean *T*-score for children involved with child welfare was 64.75, and the mean *T*-score for children not involved with child welfare was 61.61.

**Caregiver strain at intake into system of care.** Table 3 also shows the mean scores for the three domains of caregiver

strain. On entry into services, on average, all families were experiencing some strain caring for a child with behavioral and emotional problems. However, families of children involved with child welfare reported experiencing significantly less externalizing subjective strain than families of children not involved with child welfare ( $t = 3.21, p < .01$ ). These results indicate that caregivers of children involved with child welfare experienced fewer externalized feelings (e.g., anger, resentment) than caregivers of children not involved with child welfare. There were no significant differences between the groups for the other domains of caregiver strain.

To examine the relationships between baseline values of the outcome measures and child welfare involvement more closely, ordinary least squares multiple regressions were conducted that incorporated additional covariates. Results of such a regression assessing the association between subjective externalizing caregiver strain and child welfare involvement (shown in Table 4) corroborate the *t* test findings. None of the regressions examining the other outcome scales produced significant results. The regression results in Table 4 show that, after controlling for various characteristics (e.g., increased strain associated with a greater number of family risk factors), families of children who were involved with child welfare were less likely

**Table 4.** Regression Analysis of Caregiver Externalizing Subjective Strain at Intake

Predictors	Standardized coefficients		
	$\beta$	<i>t</i>	Sig.
Constant		5.22	.000
Gender (1 = female, 2 = male)	-0.13	-1.92	.056
Caregiver education (1 = greater than high school or GED, 2 = below high school or GED)	-0.04	-0.57	.569
Annual income greater than \$15,000 (1 = yes, 2 = no)	0.10	1.34	.180
Caregiver relation (1 = biological parent, 0 = non-biological parent)	-0.10	-1.29	.197
Black or African American only (1 = yes, 0 = no)	0.01	0.17	.866
White only (1 = yes, 0 = no)	-0.02	-0.23	.817
Number of child risk factors	0.11	1.36	.176
Number of family risk factors	0.26	2.97	.003
Number of household risk factors	-0.15	-1.45	.150
Multiple living placements (1 = multiple living placements, 0 = one living placements)	-0.02	-0.27	.788
Child welfare involvement (1 = yes, 0 = no)	-0.23	-3.10	.002

Data for 220 caregivers with complete data were analyzed.  $R^2 = .12$ , adjusted  $R^2 = .07$ ,  $p < .01$ .

to experience externalizing subjective strain than families of children who were not involved with child welfare.

### Research Question 2: What Does an Exploratory Analysis Indicate About the Association Between Outcomes and Involvement With Child Welfare?

The outcomes examined for the subset of children and families for which the data were available included CBCL 1½–5 scores, caregiver strain, services received, and caregiver perceptions of services received. Analyses included computing an RCI (see Note 2) for the total scales and all subscales of the CBCL 1½–5 and CGSQ to assess improvement from baseline after receiving services for 6 months. The RCI scores were dichotomized as either improved, or remained stable or deteriorated. Logistic regressions were also performed to assess the range of demographic and family factors that might contribute to explaining these RCI categories.

*Level of improvement from intake to 6 months for child behavior problems.* Almost one third of the 69 children in the outcomes analysis sample improved their behavior (see Table 5). Most of the children's CBCL 1½–5 Total Problem

*T*-scores were in the clinical range at intake, and the percentages of children who improved were approximately the same regardless of whether they started in the clinical range or not.

None of the differences between the subgroups on any of the scales were statistically significant.

Results for a binomial logistic regression predicting the dichotomized RCI for the CBCL 1½–5 Total Problems *T*-score, based on data for 60 caregivers providing complete responses at 6 months after intake, are presented in Table 6. The results indicate that, in the presence of the other factors, the odds of improvement for children involved with child welfare were slightly greater than 9 times those of children not involved with child welfare. Two other factors contributed significantly to the model: Children living with biological parents were 49 times more likely to improve than children not living with biological parents, and African American children were almost 25 times more likely to improve than children of other races.

The small group of 16 children with all three of the characteristics significantly related to CBCL 1½–5 Total Problem *T*-score improvement also had several other characteristics different from the other children in the logistic regression sample. These children were older and more likely to have a diagnosis of ADHD or oppositional defiant disorder, and they lived in households with more risk factors. One interpretation for the logistic regression results is that the children who improved most had families who were being more closely monitored by the child welfare system because of the presence of more risk factors. This may have resulted in the families of these children adhering to their system of care treatment plan more closely.

Similar logistic regressions conducted for the CBCL 1½–5 subscales did not yield significant results.

*Level of improvement from intake to 6 months for caregiver strain.* The RCIs for CGSQ scales are provided in Table 5. Approximately one quarter of caregivers reported improved Global and Objective Strain, but a smaller percentage of caregivers reported improved Subjective Internalizing Strain, and almost no caregivers reported improved Subjective Externalizing Strain. Across all scales, none of the apparent differences were found to be statistically significant.

Logistic regressions examining the relationships of the CGSQ Global Strain scale and the CGSQ subscales did not yield significant results.

*Service utilization among children involved and not involved with child welfare.* The significant difference in the CBCL 1½–5 *T*-score improvement between children involved with child welfare and children with no such involvement raised the question of whether children involved with child welfare exhibited different service utilization patterns. During their first 6 months of services, significantly more children involved with child welfare than children not involved with child welfare

**Table 5.** Reliable Change Index Categories for Children's Emotional and Behavioral Problems and Caregiver Strain

Scales	Reliable change index (RCI) category	No child welfare involvement		Child welfare involvement	
		<i>n</i>	%	<i>n</i>	%
<i>Child Behavioral Checklist 1½–5 (CBCL)</i>					
RCI for CBCL 1½–5 Total Problems, intake to 6 months	Improved	5	20.0	17	38.6
	Remained stable or deteriorated	20	80.0	27	61.4
RCI for CBCL 1½–5 Internalizing Problems, intake to 6 months	Improved	3	12.0	11	25.0
	Remained stable or deteriorated	22	88.0	33	75.0
RCI for CBCL 1½–5 Externalizing Problems, intake to 6 months	Improved	4	16.0	13	29.6
	Remained stable or deteriorated	21	84.0	31	70.5
<i>Caregiver Strain Questionnaire</i>					
RCI for Global Strain, intake to 6 months	Improved	10	28.6	15	20.0
	Remained stable or deteriorated	25	71.4	60	80.0
RCI for Objective Strain, intake to 6 months	Improved	7	20.0	20	26.3
	Remained stable or deteriorated	28	80.0	56	73.7
RCI for Subjective Externalizing Strain, intake to 6 months	Improved	0	0.0	3	4.0
	Remained stable or deteriorated	35	100.0	72	96.0
RCI for Subjective Internalizing Strain, intake to 6 months	Improved	6	17.1	12	16.0
	Remained stable or deteriorated	29	82.9	63	84.0

**Table 6.** Logistic Regression Analysis of Children's Emotional and Behavioral Problems

Factors	Odds ratio ( $e^{\beta}$ )	<i>p</i>	95.0% confidence interval for $e^{\beta}$	
			Lower	Upper
Constant	0.01	1.00		
Caregiver relation				
Non-biological parents	1.00			
Biological parents	49.29	.01	2.24	1088.63
Black or African American only				
No	1.00			
Yes	24.76	.01	2.25	272.63
Number of child risk factors		.29		
0	1.000			
1	1.89	.57	0.22	16.70
2	15.05	.12	0.50	450.61
Number of household risk factors		.33		
0	1.000			
1	1.91	.67	0.10	38.43
2	4.56	.32	0.24	88.04
3	0.17	.30	0.01	4.63
4	5.10	.36	0.15	169.23
5	0.00	1.00		
Child welfare involvement				
No	1.00			
Yes	9.03	.02	1.40	58.12

Cox and Snell  $R^2 = .39$ , Nagelkerke  $R^2 = .54$ , Omnibus test of model coefficients:  $\chi^2 = 29.68$ ,  $p < .005$ . Data for 60 caregivers with complete data were analyzed. *Child Behavioral Checklist 1½–5 Total Problem Score*.

received family preservation services (17% vs. 3%;  $\chi^2 = 3.9$ ,  $df 1$ ,  $p < .05$ ) and case management services (80% vs. 61%;  $\chi^2 = 4.4$ ,  $df 1$ ,  $p < .05$ ).

Comparisons of the locations in which case management services were received as well as the number of days on which case management services were received revealed that children involved with the child welfare system were more likely than children not involved with the child welfare system to receive services in a Department of Social Services or child welfare location (58.1% vs. 0.0%, respectively) or in a community location (29.5% vs. 5.3%, respectively). There were no differences in the number of days on which case management services were received by the two groups. (Since there were only 14 children who received family preservation services, 13 of the children involved with child welfare, no further comparisons of these two groups were conducted.) The service utilization results are not surprising, however, as these services are indicative of involvement with the child welfare system.

*Caregiver ratings of satisfaction with services.* Families rated their perceptions of services related to service access, participation in treatment, cultural sensitivity, satisfaction, and outcome of services as well as their overall satisfaction with services. After 6 months of receiving services, families whose children were involved with child welfare rated their perception of services about the same as those families whose children were not involved with child welfare. The average rating given by all caregivers was quite high; the mean rating equaled 4.1 out of 5 ( $SD = 0.77$ ). The ratings ranged from 3.7 to 4.5 for those families with children involved with child welfare and from 3.8 to 4.6 for those families with children not involved with child welfare. Both groups rated the outcomes of services lowest and cultural sensitivity highest.

## Discussion

Generally, it is recognized that young children with service needs are underserved by the mental health field, and this is particularly so for children involved with the child welfare system (McCarthy, Marshall, Irvine, & Jay, 2004). However, as systems of care evolve, services to younger children have been increasingly emphasized, and, over time, the availability of services for these populations should begin to improve. A major avenue by which young children with mental health needs are identified is through the child welfare system. The differences identified in this study between young children who are involved with the child welfare system and other young children not involved in the child welfare system may have implications for how mental health services delivery, and particularly systems of care for young children, should be designed to best meet the needs of this population.

There were some differences in the characteristics of children and families who were involved with and not involved

with the child welfare system. Children involved with child welfare were younger compared to children not involved with child welfare, and there were differences in the racial/ethnic composition of the two groups (in particular, Hispanic children were more represented among those involved with the child welfare system than among children not involved). In addition to a greater likelihood of living with foster parents, one other apparent difference was that more children involved with child welfare were residing with grandparents than children not involved with child welfare, and fewer children were residing with their biological parents. Although not surprising, this result reinforces concerns about the differences in the mental health service needs of children involved in child welfare, such as the need for trauma-informed services to treat the effects of any trauma associated with being removed from their home.

Finally, children and families involved with child welfare had more child, family, and household risk factors for mental health problems, such as a family member having a mental health problem or the child being exposed to domestic violence. Multiple risky behaviors or conditions are common features of child-welfare-involved families and are likely to be part of the reason they initially come to the attention of the child welfare system. Consequently, it is reasonable that these factors are reflected in the caregiver data found here. Interestingly, differences between the two groups of children and families in terms of income and educational achievement were not found since these factors are also associated with increased risk for, and involvement with, child welfare (Slack, Holl, McDaniel, Yoo, & Bolger, 2004). This finding may be because the populations of focus for families that come into contact with systems of care generally are impoverished (half of the families in our study had incomes less than \$15,000); thus, all may share some of the same characteristics, such as low income and low educational attainment.

Both children involved with child welfare and children not involved with child welfare had behavior problems exceeding the normal range at intake, according to the CBCL 1½–5, and there were no significant differences between the two groups' intake scores. There were also no differences between the improvements in the two groups' scores over the first 6 months in systems of care; approximately one quarter to one third of children in both groups showed improvements in behavior problems. However, after other factors related to children's behavior (e.g., their caregiver's relationship to them) were taken into account, children involved with child welfare appeared to be much more likely to improve their CBCL 1½–5 Total Problem Scores compared to children not involved with child welfare. Greater likelihood of improvement in this score also seemed to be associated with living with biological parents and being African American.

These findings may be because of the fact that the sample included in the logistic regression analysis was small and



consisted of a combination of samples drawn from multiple communities, each having unique characteristics. Conversely, the findings may be suggestive of potential directions for further research. For example, the greater clinical improvement seen in children involved with child welfare could be related to the level of case management services received, which was also greater for those children. Thus, children involved with child welfare may be benefiting to a greater extent from mental health services as compared to children not involved with child welfare.

The subset of children whose behavior was predicted to improve the most on the basis of the logistic regression—those involved with child welfare who were African American and living with their biological parents—was very small ( $n = 16$ ). A more detailed understanding of the service experience of the children whose data were included in the logistic regression sample may be warranted as an avenue of further research. Such data would help identify other characteristics of the families or the services received that were associated with the improvements. It would also allow a determination of whether the logistic regression results indicate a broader pattern or simply reflect an artifact of the small sample size.

All caregivers showed evidence of strain in caring for their young children on entry into services. However, families involved with child welfare experienced lower levels of subjective externalizing strain (defined as negative externalized feelings such as anger, resentment, or embarrassment) compared to their peers who were not involved with child welfare. This finding remained consistent even after controlling for other demographic factors, including the number of family risk factors, which was significantly associated with greater subjective externalizing strain. Since the status of a caregiver as being biological or nonbiological did not contribute to the multivariate model, it seems that the comparatively low levels of subjective externalizing strain are not explained by the presence of substitute care providers.

After 6 months of receiving services, one quarter of caregivers reported improvement in their levels of global strain. However, very few caregivers reported improvement in subjective externalizing strain. More interestingly, there were no differences in the improvements experienced by caregivers of children involved with the child welfare system compared to other caregivers. Taking into account the tentative nature of this exploratory finding as well, one possibility is that the system of care approach may provide improved supports to all caregivers.

### Limitations

The small sample in general, but particularly for 6-month outcomes, limits the generalizability of this study in many ways. First, the sample of caregivers who agreed to participate in the longitudinal study is slightly (but not very) different from the

full population of caregivers whose children entered system of care services. Second, the sample of caregivers completing their 6-month interview is even smaller. The greatest limitation occurs for the multivariate analysis results, where the effects of missing data become magnified. The smaller sample providing 6-month data are also potentially different from the larger sample by virtue of the fact that they made the effort to complete the follow-up interview. The subsample of children with 6-month outcomes is different from the rest of the sample in several ways, including racial and age distributions.

Another sample size limitation arises because CBCL 1½–5 data were not available for the youngest children, who accounted for 18% of the sample. Although the authors judged that reporting on the analysis would be incomplete without this information, the reader is cautioned that the results may be most useful as a source of future hypotheses regarding the efficacy of treatment and the differences between child-welfare- and non-child-welfare-involved young children.

In addition, the system of care communities funded from 2002 through 2004 reflect the CMHI program at a particular point in time. Most of these communities did not emphasize program services specifically for young children. (In contrast, for example, 6 of the 30 communities funded in 2005 and 2006 were funded specifically to address the needs of young children.) Thus, the results reported for this study offer a snapshot of a particular cohort of system of care communities rather than a definitive view of all system of care communities.

Another limitation of the analyses presented here is that the identification of children as being involved or not involved with the child welfare system is based, in part, on assumptions about indirect indicators. For example, one criterion used to make the determination was whether a child had been physically or sexually abused. Although such children are often involved in child welfare, it is not always the case. Furthermore, some of the criteria used were too general to determine that a child was involved in child welfare, when in fact he or she was involved.

Another limitation is that the data are based primarily on caregiver interviews, which may introduce various types of biases, particularly for the longitudinal data. For example, caregivers who are receiving some degree of supervision by the child welfare system to keep their children at home may be reporting lower levels of caregiver strain in an effort to convince child welfare authorities that they are functioning well. Since the data do not provide the capacity to examine the conditions under which these families are operating more clearly, it is not possible to rule out the possibility of such explanations for caregiver responses.

### Conclusion

Many young children receiving services through system of care communities are involved with the child welfare system. It seems probable that children involved with child welfare

will continue to be a major component of CMHI communities' populations. This is especially true among the growing number of young children, if for no other reason than the sheer volume of children in the child welfare system and the significant need for services (Burns et al., 2004).

Providing mental health services for young children is very challenging. Concerns range from identifying appropriate diagnoses and reimbursement streams to formulating effective treatment interventions designed to address the children's needs. Furthermore, it may be necessary for CMHI communities to incorporate treatment for caregivers with mental health needs to help meet child welfare mandates that allow children to remain in or return to their homes.

Although it is clear that the characteristics of young children involved with the child welfare system and young children not involved with the child welfare system are similar, important differences between these two groups are identified in this preliminary study. These differences reflect both a more diverse population of young children and caregivers involved with child welfare who have more significant needs for services themselves. Furthermore, the principle of family-driven services, which is an underpinning component of system of care development, may be more difficult to actualize in providing services to children involved with the child welfare system. Certainly, the results from this study suggest that child-welfare-involved caregivers may be less satisfied with their level of participation in service decisions. Child safety concerns and the associated impetus to address service needs for both caregivers and children, often in a somewhat adversarial environment, may present challenges inconsistent with a family-driven approach (Fluke & Oppenheim, 2009).

A significant challenge for future systems of care development is to identify practices and protocols that can address the mandates required by the child welfare system for young children and their caregivers. There are obvious and not so obvious differences in the characteristics, the needs, and perhaps the possible outcomes for young children who are involved in child welfare compared to young children who are not. Although results presented here are suggestive that differences exist, it is by no means certain at this early stage whether the differences identified in this analysis will persist as the services to young children expand. Data collected by recently funded system of care communities focusing specifically on young children and early intervention services will undoubtedly shed more light on this issue.

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### Notes

1. The *Child Behavioral Checklist for Ages 1½–5* normal range is less than 65, borderline is 65 or greater but less than 70, and clinical is 70 or greater.
2. Because numeric change may vary in magnitude and implications for actual behavioral change are often difficult to interpret, we provide a quantitative indicator of clinical change for clinical outcome measures. The reliable change index (RCI; Jacobson, Roberts, Berns, & McGlinchey, 1999; Jacobson & Truax, 1991; Speer & Greenbaum, 1995) is used to assess whether individual behavioral and emotional change over time was clinically significant. This statistic compares a child's scores at two different points in time adjusting for the reliability of the measure and indicates whether a change in scores shows clinically significant improvement, stability, or deterioration. Improvement is defined as a difference in outcome scores, adjusted for measurement error of the outcome, that exceeds the upper 95% confidence bound around a change score of zero. Similarly, deterioration is defined as a difference in outcome scores, adjusted for measurement error of the outcome, that exceeds the lower 95% confidence bound around a change score of zero. In other words, the assignment of an RCI to the "improvement" or "deterioration" category implies that a difference of that magnitude would not be expected simply because of the unreliability of the measure.

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