Do youth in out-of-home care receive recommended mental health and educational services following screening evaluations?

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ABSTRACT

For children in out-of-home care, a significant gap exists between those who need services and those who receive them. Screening all children in out-of-home care is recommended to reduce this gap. This study was designed to determine if recommendations from mental health and educational screening evaluations were related to service implementation for youth in out-of-home care. Screening evaluations were completed with 171 maltreated youth (ages 9 to 11) who had been placed in out-of-home care within the prior year. Written reports summarizing the findings were provided to children's caseworkers. Service utilization was assessed at baseline (T1; before screening reports were completed) and follow-up (T2; 9–12 months later) interviews. For children not already receiving services at T1, logistic regression analyses tested the association between T1 recommendations for services and new service implementation by T2. Mental health (youth-report) and educational (teacher-report) outcomes were analyzed separately. Screening evaluations identified 22% of children with unmet mental health needs and 36% with unmet educational needs at T1. Children who received a recommendation for new services (i.e., all of those with unmet needs) were more likely to receive mental health (OR = 2.50, p = .06) and/or educational (OR = 3.54, p = .04) services by T2 than children who did not receive recommendations for services. While recommendations increased the odds of receiving services, almost half of the children with unmet mental health needs did not receive services, and 84% of children with unmet educational needs did not receive services by T2. Much work remains to ensure youth receive needed services.

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1. Introduction

At any given time in the U.S., approximately half a million children are in out-of-home care, which includes non-relative foster care, kinship care (placement with relatives), and institutional care (group homes, residential treatment centers) (U.S. Department of Health and Human Services, 2009). Maltreated youth in out-of-home care are at high risk for mental health and educational problems. Research has estimated that 40–80% of youth in out-of-home care have significant mental health needs (Burns, Phillips, Wagner, Barth, Kolko, Campbell et al., 2004; Clausen, Landsverk, Ganger, Chadwick, & Litrownik, 1998; Leslie, Hurlburt, Landsverk, Barth, & Slymen, 2004; Pecora, Jensen, Romanelli, Jackson, & Ortiz, 2009), and that up to 75% are under-achieving in at least one academic subject (Evans, 2001). Studies estimate that about a quarter of these children with significant mental health needs do not receive mental health services (Burns et al., 2004; Kerker & Dore, 2006; Kinard, 2002; Leslie et al., 2004), and that approximately half of those who are underachieving do not receive special education services (Evans, 2001; Kinard, 2002; Webb, Harden, Baxter, Dowd, & Shin, 2007). The goal of the current study was to determine whether screening evaluations designed to identify unmet mental health and educational problems among youth in out-of-home care could close the gap between service need and receipt.

1.1. Universal screening may address gap

The gap between service need and service receipt may arise because mental health and educational needs remain undiagnosed within out-of-home care populations. For example, children often have multiple placement and school changes while in out-of-home care, which can complicate the detection of problems. New caregivers and associated professionals (e.g., teachers, caseworkers, therapists) may have limited information about a child's history and the transfer of school records can be slow (Zetlin, Weinberg, & Shea, 2006).

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Evaluations may also be put on hold due to pending moves, which delays the detection of problems and provision of services.

Given that problems may go undetected, routine screening may be warranted. A number of professional organizations, including the American Academy of Child and Adolescent Psychiatry (AACAP), the Child Welfare League of America (CWLA), and the American Academy of Pediatrics (AAP), have called for universal mental health screening for all children entering the child welfare system (American Academy of Child and Adolescent Psychiatry and Child Welfare League of America, 2003; American Academy of Pediatrics, 1994). While the merits of screening have been recognized, many children do not receive screening evaluations. One national study found that while almost all child welfare agencies provide some screening of physical health problems for all children entering out-of-home care, only half routinely screen for mental health needs (Leslie et al., 2003). Educational screening in this population has received limited attention in the research literature and it is unknown how frequently or systematically educational screening is completed with youth in out-of-home care.

1.2. Understanding the gap between service need and receipt

A number of recent studies have attempted to understand why some children in out-of-home care receive needed services while others do not. As might be expected, youth with more severe emotional and behavioral problems are more likely to receive mental health services (Burns et al., 2004; Leslie et al., 2000; Leslie et al., 2004). However, a number of non-clinical factors are also associated with mental health service utilization. Studies suggest that youth placed with relatives, those with a history of neglect, and those that come from racial/ethnic minority backgrounds are less likely to receive services even after controlling for symptom severity (Garland, Landsverk, Hough, & Ellis MacLeod, 1996; Garland, Landsverk, & Lau, 2003; Leslie et al., 2000; Leslie et al., 2004). The gap between need and service utilization has received far less attention in the education realm. While a few national studies have examined educational service disparities among youth in the child welfare system, none have looked at these factors specifically for children in out-of-home care.

1.3. Current study

In the current study, data collected from youth enrolled in the Fostering Healthy Futures (FHF) program were used to determine whether recommendations from screening evaluations were associated with subsequent mental health and educational service implementation. FHF is a randomized controlled trial of a preventive intervention for preadolescent youth (ages 9 to 11) placed in out-of-home care as a result of maltreatment (Taussig, Culhane, & Hettleman, 2007). At baseline, all children in the FHF program received a screening evaluation assessing cognitive, academic, social, and mental health functioning. Following this assessment, summary reports that included recommendations were provided to caseworkers who were encouraged to share the reports with children's caregivers, therapists, and teachers. Approximately half of eligible children were subsequently randomized into the intervention; the other half remained in the assessment-only control group. The 30-week preventive intervention included weekly skills groups and individual therapeutic mentoring by graduate students. As part of their role, mentors were encouraged to advocate for needed services.

This study was designed to determine whether children who were identified as having unmet mental health or educational needs received new services following the distribution of the screening reports. Given that children randomized into the treatment arm of the FHF preventive intervention were assigned mentors who could advocate for services, it was hypothesized that intervention youth would be more likely to receive recommended services than youth in the assessment-only condition. Additional factors such as race/ethnicity, placement type, and maltreatment history were also assessed to determine whether they influenced the relationship between recommendations and service implementation.

2. Methods

2.1. Participants

Participants included 171 maltreated youth in out-of-home care and their caregivers who participated in the randomized controlled trial of the Fostering Healthy Futures (FHF) program from 2002 to 2007. Participants were recruited in 5 cohorts over 5 consecutive summers from a comprehensive list of all children aged 9 to 11 years old who were court-ordered into out-of-home care in participating counties. Children were recruited if they met the following criteria: 1) they had been placed in out-of-home care by court order due to maltreatment within the preceding year, 2) they had lived with their current caregiver at least 3 weeks, 3) they were not known to be significantly developmentally delayed, and 4) they demonstrated adequate proficiency in English. When multiple members of a sibling group were eligible, one sibling was randomly selected to participate in the randomized controlled trial. Participation was voluntary and could not be court ordered.

Ninety-one percent of children and their caregivers who met inclusion criteria agreed to participate. Baseline (T1) interviews were conducted during the summer prior to randomization. Youth who lived within a 35-minute radius of skills group sites were then randomly assigned to the preventive intervention or the assessment-only control group. Children were randomized, by cohort, in a single block after stratifying on gender and county. Children who lived too far from skills group sites ($n = 15$) were not eligible for randomization into the preventive intervention, but were eligible to complete follow-up interviews. The intervention ran from the end of September through May. Follow-up (T2) interviews were completed with all youth, caregivers, and teachers. Children's teachers completed T2 surveys in the spring (approximately 8–9 months post-baseline) and youth and their current caregivers completed T2 interviews immediately post-intervention (approximately 1 year post-baseline). At T2, data were available for 156 participants (overall 91.2% retention), which includes 143 of the 156 youth randomized into the FHF efficacy trial (91.7% retention) and 13 of the 15 youth who lived too far (86.7% retention). Results of t-tests and chi-square analyses indicated that participants who were lost to follow-up did not differ from study participants on baseline demographic characteristics (i.e., age, gender, and ethnicity), placement or maltreatment types, intervention group status, T1 service utilization, or recommendations for new services.

Participants in this sample were 49.7% male, with a mean age of 10.38 ($SD = 0.91$) at T1. The racial/ethnic distribution of children (non-exclusive categories) was 49.7% Hispanic/Latino, 44.4% Caucasian, 28.1% African–American, 8.8% Native American, 2.3% Asian, and 1.2% Hawaiian or Other Pacific Islander.

2.2. Procedures

This study received Institutional Review Board approval and informed consent and assent were obtained from all participants. Youth and their current caregivers were interviewed at T1 by separate interviewers, typically in their homes. Children and caregivers were each paid $40 for their participation.

As part of a larger interview at T1, children and caregivers completed a battery of measures used to inform the screening assessments. These included several measures administered to youth: Kaufman Brief Intelligence Test (Kaufman & Kaufman, 1990), Wechsler Individual Achievement Test Screener (The Psychological

Corporation, 1992), Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1994), The Children's Depression Inventory (Kovacs, 1992), and the Trauma Symptom Checklist for Children (Briere, 1996). Caregivers also completed the Child Behavior Checklist (Achenbach & Rescorla, 2001).

Reports summarizing findings from screening evaluations were prepared by clinical psychologists or graduate students under the supervision of clinical psychologists. Reports were created from a template and individualized recommendations were provided. Recommendations for further mental health evaluation or services were based on established clinical cut-points provided in technical manuals. Recommendations for further educational evaluation or services were based on below-average scores from measures of intellectual and academic performance as well as any significant discrepancies between scores. Senior authors edited all reports to ensure accuracy and consistency. Reports were given to children's caseworkers along with a letter encouraging caseworkers to share the report with families, teachers, mental health providers, and other relevant collateral adults, as appropriate. Contact information was provided, so that caseworkers or others could call with questions or to discuss the report in detail. Screening evaluations and reports were provided at no cost to participating counties or families.

Children who were randomly selected to participate in the 9-month preventive intervention attended weekly therapeutic skills groups and individual mentoring visits. Mentors were all graduate students in social work and received extensive training and supervision in therapeutic mentoring and advocacy. Mentors were provided with copies of the screening evaluation report and were encouraged to advocate for services when needed. (For more detail regarding the intervention please see Taussig & Culhane, 2010, and Taussig et al., 2007).

Youth's teachers were surveyed in the spring (T2; 8–9 months post-baseline) about children's academic, social, emotional, and behavioral functioning. Teachers were paid $25 for their participation. Children and their current caregivers completed T2 interviews immediately post-intervention (approximately 1 year post-baseline). Interviews were again completed in families' homes or another convenient location, and both caregivers and youth were paid $40 for their participation.

2.3. Measures

2.3.1. Recommendations from screening evaluation reports

Screening evaluation reports were coded by the first author and a trained research assistant to determine whether children received a recommendation for new mental health services and/or new educational services (recommendation for new services = 1, no recommendation for new services = 0). Children already receiving services were coded as not receiving a recommendation for new services. Mental health and educational recommendations were coded separately. Initial inter-rater agreement was high (Cohen's kappa = 0.91) and final codes were determined by consensus or in consultation with a senior investigator when necessary.

2.3.2. New service utilization

Mental health service utilization was assessed based on youth report and educational service utilization was based on teacher report.

2.3.2.1. Mental health service implementation.
During the T1 interview, youth were asked: "Are you currently in any type of counseling, therapy, or group?" At T2, youth were asked: "Since September, have you gone to counseling, therapy, or a group for any reason?" Participation in the Fostering Healthy Futures skills groups was not counted in youth's responses about service utilization. The mental health service implementation variable (yes = 1, no = 0) was created

by comparing the youth's responses at T1 and T2. If a child responded that they were not receiving mental health services at T1, but had received mental heath services during the period from September (intervention onset) to the T2 interviews the following June, they were assigned a "1" for the mental health service implementation variable. All other children received a "0" on this variable (including youth with pre-existing services at T1).

2.3.2.2. Educational service implementation.
Educational service implementation was assessed through teacher-report at T2. Teachers were asked if youth received any of the following special education services during the academic year: 1) special assistance in the regular classroom (e.g., aide, tutor, or special behavioral program), 2) partial-day special education classes for learning problems, 3) speech therapy, or 4) full day special education class for learning problems. Teachers were then asked if these special education services were newly implemented during the current school year or were pre-existing services. Youth whose teachers reported that youth were receiving special education services and that these were newly implemented (i.e., the current academic year) were assigned a "1" for the educational service implementation variable. Youth who did not receive any special education services or who received continued services were assigned a "0" for this variable. When teachers indicated that they did not know whether special education services differed from the previous school year (15.3%, n = 24), T1 caregiver reports of educational services during the previous school year were consulted and compared with teacher-reported current services to determine the code for the educational service implementation variable.

2.3.3. Intervention status

All children, regardless of intervention status received the free screening evaluation. Analyses investigating the influence of intervention status include 70 youth who were randomized to, and completed, the 9-month preventive intervention and 77 youth in the assessment-only control group. Data from 4 children who were randomized to the intervention but never began, as well as 5 children who prematurely dropped out of the intervention, were excluded from these analyses. Their data were excluded because the current study does not focus on testing the efficacy of the intervention, but rather on whether mentoring/advocacy increases the odds of receiving new services. Children who refused or dropped out of the intervention did not receive a sufficient dosage of mentoring/advocacy to be able to study this question of interest.

2.3.4. Racial/ethnic minority status

Children's racial/ethnic minority status was indexed based on caregiver report. Children were coded as being a racial/ethnic minority if their caregivers reported their race or ethnicity included one of the following: Hispanic/Latino, African–American, Native American, Asian, or Hawaiian or Other Pacific Islander.

2.3.5. Placement type

Caregivers reported on children's placement type at T1. Youth were primarily living in non-relative foster or kinship care. Since only 9 children were living in institutional care, these children were dropped from analyses that examined placement type.

2.3.6. Maltreatment type

Maltreatment types were assessed using the Maltreatment Classification System (Barnett, Manly, & Cicchetti, 1993) to code social histories completed by caseworkers and the legal petitions filed in the dependency and neglect court proceedings. Two to three trained research assistants coded each petition and/or history and final codes (maltreatment types are non-exclusive) were determined by consensus or in consultation with senior investigators when necessary. Coded maltreatment types included physical abuse, sexual

abuse, failure to provide, lack of supervision, emotional abuse, moral/legal maltreatment, and educational neglect. Based on previous research findings suggesting that there is higher service utilization among children with histories of physical and sexual abuse (Garland et al., 1996; Leslie et al., 2004), children who experienced physical and/or sexual abuse were compared in the current study with maltreated children who had not experienced physical or sexual abuse (e.g., neglect, moral/legal maltreatment).

2.4. Statistical analyses

Analyses were conducted separately for mental health and educational domains. Odds ratios (O.R.), along with 95% confidence intervals (CI), were calculated as a measure of effect size and are presented for all analyses. A series of logistic regression analyses were conducted to assess whether racial/ethnic minority status, placement type at T1, or maltreatment type were associated with pre-existing service utilization at T1. These analyses examined whether previous findings of disparities in service utilization among subgroups of children in out-of-home care would be replicated with the current sample (Garland et al., 1996, 2003; Leslie et al., 2000, 2004).

The second set of analyses examined the relationship between recommendations for new services and the receipt of new services. Children already receiving services at T1 were excluded from these analyses, as they could not receive new services. Logistic regression analyses were used to determine whether receiving a recommendation for services (yes = 1, no = 0) was associated with new service implementation (yes = 1, no = 0) for children who did not have services at baseline.

Moderation analyses were originally planned to determine whether subgroups of children in out-of-home care had unequal patterns of service utilization for newly implemented services following recommendations. However, given the small number of events in some cells (i.e., children receiving new services), we did not have sufficient power to conduct these analyses. Instead, we examined descriptively the frequency of youth with recommendations who received new services by intervention status, racial/ethnic minority status, placement type at T1, and maltreatment type.

3. Results

3.1. Sample characteristics on baseline study variables

Racial/ethnic minority youth comprised 55.0% of the sample. Over a third (36.3%) of youth had experienced physical and/or sexual abuse. A similar percentage of youth were living in non-relative foster (48.5%) versus kinship (45.6%) care at the time of the baseline assessment.

Over half (53.2%, $n = 91$) of the sample was receiving mental health services at the time of the baseline evaluation. Many fewer youth were receiving educational services at baseline (14.6%, $n = 25$). Only 11.7% ($n = 20$) of the sample was receiving both mental health and educational services at T1. In addition, 41.5% ($n = 71$) of the sample was receiving mental health services only and 2.9% ($n = 5$) was receiving educational services only. A large percentage (43.9%, $n = 75$) of the sample was not receiving either type of service at T1.

Almost a quarter of the sample (22.2%, $n = 38$) was identified as having an unmet mental health need as part of the screening evaluation and received a recommendation for a mental health evaluation and/or services. A little over a third of youth (35.7%, $n = 61$) had an unmet educational need and received a recommendation for further evaluation and/or educational services. Of the total sample, 13.5% ($n = 23$) received recommendations for both mental health and educational services, 13.5% ($n = 23$) received recommendations for new mental health services only, and 23.4% ($n = 40$) received recommendations for new educational services only. Almost

half of the sample (49.7%, $n = 85$) did not receive recommendations for any new services, either because they were already receiving services or did not need services based on test scores.

3.2. Mental health service outcomes

3.2.1. Examination of possible disparities in pre-existing mental health services utilization at T1

Separate logistic regression analyses were conducted to test whether pre-existing service utilization differed by racial/ethnic minority status, placement type, or maltreatment type (see Table 1). Children in non-relative foster care and those with histories of physical and/or sexual abuse were more likely to be receiving mental health services at the T1 interview. Analyses for racial/ethnic minority status approached significance ($p = .07$), suggesting that racial/ethnic minority youth were less likely to be receiving mental health services at T1.

3.2.2. Relationship between recommendation and service implementation

Of those children who received recommendations for mental health services, 51.4% ($n = 18$) received new mental health services by T2. In comparison, 29.7% ($n = 11$) of children who did not receive recommendations received new mental health services. Children who received recommendations were 2.5 times more likely to get new mental health services than youth who did not receive recommendations (O.R. = 2.50, 95% CI: 0.95, 6.59). This relationship approached statistical significance ($p = .06$).

3.2.3. Examination of possible disparities in recommended new service implementation by T2

Exploratory analyses were conducted to determine if the proportion of children with recommendations who subsequently received new services differed across subgroups within the sample. While odds ratios and significance results are presented in Table 2, the discussion below will focus primarily on patterns across subgroups. Nonsignificant subgroup differences may be due to insufficient power to detect effects, given the relatively small number of events per cell. Results suggest that receipt of new

Table 1
Percentages of youth with pre-existing services by demographic and maltreatment variables.

	n	Pre-existing mental health	Pre-existing educational
Intervention status			
Intervention	70	57.1%	12.9%
Control	77	53.2%	15.6%
Odds ratio (95% confidence interval)		1.17 (0.61, 2.25)	0.80 (0.32, 2.03)
Race/ethnicity			
Caucasian	76	60.5%	13.2%
Racial/ethnic minority	94	46.8%	16.0%
Odds ratio (95% confidence interval)		1.74 (0.94, 3.22)[a]	0.80 (0.34, 1.89)
Maltreatment type			
Physical or sexual abuse	62	67.7%	17.7%
Other maltreatment types	109	45.0%	12.8%
Odds ratio (95% confidence interval)		2.57 (1.34, 4.94)[b]	1.46 (0.62, 3.46)
Placement type			
Non-relative foster	83	69.9%	22.9%
Kinship	78	32.1%	6.4%
Odds ratio (95% confidence interval)		4.92 (2.52, 9.59)[b]	4.33 (1.53, 12.27)[b]

[a] $p < .10$.
[b] Significant at $p < .05$.

Table 2
Percentage of youth with mental health and educational recommendations who received new services by demographic and maltreatment variables.

	% with new service implementation (n)	
	Mental health	Educational
Intervention status		
Intervention	41.7% (5/12)	16.7% (4/24)
Control	53.3% (8/15)	18.2% (4/22)
Odds ratio (95% confidence interval)	0.63 (0.14, 2.89)	0.90 (0.20, 4.14)
Race/ethnicity		
Caucasian	33.3% (5/15)	20.8% (5/24)
Minority	65.0% (13/20)	12.5% (4/32)
Odds ratio (95% confidence interval)	0.27 (0.07, 1.11)[a]	1.84 (0.44, 7.76)
Maltreatment type		
Physical/sexual	55.6% (5/9)	12.5% (2/16)
Other types	50.0% (13/26)	17.5% (7/40)
Odds ratio (95% confidence interval)	1.25 (0.27, 5.73)	0.67 (0.12, 3.65)
Placement type at T1		
Non-relative foster	71.4% (10/14)	8.7% (2/23)
Kinship	35.0% (7/20)	24.1% (7/29)
Odds ratio (95% confidence interval)	4.64 (1.06, 20.39)[b]	0.30 (0.06, 1.61)

[a] $p < .10$.
[b] Significant at $p < .05$.

mental health services following recommendations differed by placement type at T1 and racial/ethnic background. Specifically, youth in non-relative foster care and those from racial/ethnic minority backgrounds were more likely to receive recommended mental health services than youth living with relatives or those of Caucasian descent. Again, these analyses should be considered exploratory and interpreted with caution.

3.3. Educational service outcomes

3.3.1. Examination of possible disparities in pre-existing educational services utilization at T1

Children in non-relative foster care were more likely to be receiving educational services at T1 than were youth living with relatives. Racial/ethnic minority status and maltreatment type were not related to educational services receipt at T1 (See Table 1).

3.3.2. Relationship between recommendation and service implementation

Of those children who received recommendations for educational services, 16.1% ($n = 9$) received new educational services by T2. In comparison, 5.1% ($n = 4$) of children who did not receive recommendations received new educational services. Educational recommendations were significantly related to new educational service implementation ($p = .04$). Children who received recommendations were over 3 times more likely to have new services than youth who did not receive recommendations (O.R. = 3.54, 95% CI: 1.03, 12.16), even though 83.9% of children with unmet needs did not receive services.

3.3.3. Examination of possible disparities in recommended new service implementation

These exploratory analyses should be interpreted with caution, given the relatively small number of events per cell. Results suggest that the receipt of educational services following recommendations may differ by placement type at T1 and racial/ethnic background (see Table 2). Caucasian children and those living with relatives were more likely to receive recommended educational services than racial/ethnic minorities or those in non-relative foster care.

4. Discussion

This study was designed to determine whether recommendations from mental health and educational screening evaluations were related to service implementation for youth in out-of-home care. In the current study, universal screening of preadolescent youth in out-of-home care identified 22% of children as having unmet mental health needs and 36% as having unmet educational needs. These children all received recommendations for comprehensive evaluations and/or new services in reports provided to their caseworkers. Results suggest that youth who received recommendations were 2 to 3 times more likely to receive new mental health and/or educational services than youth who did not receive recommendations. While the provision of recommendations was based on need, these results are important given that without screening evaluations these children may not have been identified or have received services.

4.1. Implications for policy and practice

4.1.1. Implications for screening

This study suggests that screening evaluations may be effective at identifying youth with unmet mental health and educational needs that may have otherwise missed detection. Significant work has advanced mental health screening for youth in out-of-home care, but little systematic work has been done to ensure that children's educational needs are being met. For example, professional organizations and experts in the field have established guidelines and best practices for detecting and treating mental health problems in youth in out-of-home care (American Academy of Child and Adolescent Psychiatry and Child Welfare League of America, 2003; American Academy of Pediatrics, 1994; Romanelli et al., 2009), but not for education. Similar guidelines are needed to emphasize the importance of screening for educational needs and to provide effective strategies to work with schools to ensure these needs are being met (Smithgall, Jarpe-Ratner, & Walker, 2010). Providing services to youth with unmet needs could make a significant impact on their school functioning as well as potentially reduce adverse outcomes such as school dropout, delinquency, and substance use. Future studies are also needed to assess national rates of systematic educational screening of youth in out-of-home care and to identify factors that increase the likelihood that screening is completed.

4.1.2. Implications for service provision

In addition to ensuring all youth in out-of-home care are appropriately screened for mental health and educational needs, more work is needed to improve service implementation. One strategy to improve services provided to youth in out-of-home care is through greater inter-agency coordination and communication between child welfare and both mental health and educational providers (Horwath & Morrison, 2007; Kolko, Herschell, Costello, & Kolko, 2009; Zetlin, Weinberg, & Kimm, 2004). Having dedicated liaisons within child welfare to assist caseworkers and facilitate communication with mental health agencies and schools may be a particularly effective strategy to accomplish this goal (Landsverk, Burns, Stambaugh, & Reutz, 2009). For example, research has demonstrated that greater interagency coordination between child welfare and mental health agencies improves youth's psychological functioning and decreases biases in service utilization patterns (Bai, Wells, & Hillemeier, 2009; Hurlburt et al., 2004). Within the educational domain, one study demonstrated that caseworkers who received training and had access to an educational liaison increased their knowledge about the school system and were more likely to gather education data and comment on school needs in case files (Zetlin, Weinberg, & Kimm, 2005). Another small scale, non-randomized study, found that advocacy by an education liaison was associated with modest gains in academic achievement for youth in

out-of-home care relative to youth in out-of-home care who did not receive advocacy and who demonstrated overall declines in performance (Zetlin et al., 2004). Further studies are needed to establish the efficacy of educational liaisons and identify strategies that are effective and efficient.

4.2. Why youth in out-of-home care may not receive needed services

While recommendations for new services increased the odds of receiving mental health and educational services in the current study, a sizeable proportion of youth with recommendations still did not receive services, especially within the educational domain. Specifically, almost half of the children with unmet mental health needs did not receive services, and 84% of children with unmet educational needs did not receive services. Individual/family, caseworker, and systems-level factors likely contribute to this gap.

4.2.1. Individual/family level factors
A number of individual-level factors may influence whether caregivers and caseworkers advocate and obtain services for youth with mental health and/or educational needs. Child and family level factors may include: limited knowledge about how to access mental health or educational services, cultural/family attitudes against help-seeking, perceived stigma associated with mental health services especially within some racial/ethnic groups, and difficulties with transportation (Garland & Besinger, 1997; Smithgall, Gladden, Howard, Goerge, & Courtney, 2004).

4.2.2. Caseworker level factors
Caseworker level factors may also play a role in unmet needs for youth in out-of-home care. Caseworkers face significant barriers in mental health and educational service implementation, such as large caseloads and inadequate resources, including limited funding, inadequate training to recognize mental health and educational needs, limited knowledge of the complexities of the educational system, and insufficient support from administrators (Burns et al., 2004; Fedoravicius, McMillen, Rowe, Kagotho, & Ware, 2008; Levitt, 2009; Pecora et al., 2009; Zetlin et al., 2006; Zetlin, Weinberg, & Kimm, 2003). Furthermore, many caseworkers may not view assisting with educational problems as part of their role, especially when they have limited time and resources (Zetlin, Weinberg, & Kimm, 2003).

4.2.3. Systems-level factors
Systems-level factors may partially explain the greater discrepancy between service need and actual receipt within the educational domain. Within the child welfare system, greater emphasis is placed on mental health than educational needs of children. For example, mental health services are regularly court-ordered for youth in out-of-home care (Fedoravicius et al., 2008), whereas educational services are not. However, mental health service referrals are not always made systematically or based on need (Fedoravicius et al., 2008; Villagrana, 2010), which may result in scarce resources not reaching those with the greatest need. Discontinuity of medical insurance coverage for youth in out-of-home care and the limited availability of well-trained mental health care providers also impacts mental health service receipt (Fedoravicius et al., 2008; Rosenbach, Lewis, & Quinn, 2003). Between-systems factors may also play a role in unmet educational needs. The development of strong collaborative relationships between school staff, caseworkers, and foster parents may be constrained by factors associated with case assignment, placement instability, and worker turnover (Smithgall et al., 2004). Communication between all of the parties involved in children's education is complex, ineffective, and sometimes lacking all together. Given that children in out-of-home care often change placements, schools, and caseworkers, it may be unclear who is responsible for communicating and with whom

(Smithgall et al., 2004). Finally, the transfer of school records is also a major problem that can lead to a disruption or discontinuation of services (Smithgall et al., 2004; Zetlin et al., 2006).

4.3. Disparities in service utilization patterns among youth in out-of-home care

The current study also examined mental health and educational service utilization patterns among subgroups of youth in out-of-home care. The greatest differences in service utilization were observed by placement type for both mental health and educational domains. At T1, youth living with relatives were less likely to receive mental health or educational services than youth living in non-relative foster care. By T2, youth in kinship care were also less likely to receive recommended mental health services; however, they were more likely to receive recommended educational services than youth in non-relative foster care. This inconsistent finding for educational services at T2 may be due to the relatively small number of youth receiving new services or may reflect differential implementation of screening report recommendations. In general, youth living in kinship care may be less likely to receive services because kinship providers often receive less financial support and guidance from caseworkers, have fewer economic resources, and are less knowledgeable about access points to public sector systems than non-relative foster care providers (Leslie et al., 2000). Child welfare case status may also be an important factor. Post-hoc analyses for the current study showed that youth living with relatives at T1 were more likely to have a closed child welfare case by T2. When cases are closed more quickly, caregivers may receive less support in accessing and funding services.

Service utilization patterns also differed by race/ethnicity for most comparisons, although the direction of the difference was inconsistent. At T1, youth of racial/ethnic minority backgrounds tended to have lower rates of mental health service utilization, a finding which is consistent with previous research (Burns et al., 2004; Garland et al., 2003; Leslie et al., 2000; Leslie et al., 2004). In contrast, minority youth were more likely to receive recommended mental health services than Caucasian youth by T2. In the education domain, service utilization did not differ by race/ethnicity at T1, whereas Caucasian youth were more likely to receive recommended services by T2. Maltreatment type only predicted mental health service utilization at T1. Consistent with previous research, youth who had experienced physical or sexual abuse had higher rates of mental health services compared with maltreated youth who were not physically or sexually abused (Burns et al., 2004; Garland et al., 1996; Leslie et al., 2004).

Implementation of recommended services was also examined by intervention status. It was hypothesized that youth who had a mentor through the FHF preventive intervention would be more likely to receive recommended services. Contrary to hypotheses, participation in the preventive intervention did not increase the odds of receiving recommended mental health or educational services. This finding suggests that additional advocacy provided by a mentor was not necessary for recommendations to be implemented by children's caseworkers. However, advocacy provided by a mentor was also not sufficient to ensure youth received needed services. Of note is that within the mental health domain, a (non-significant) trend suggested that children in the control group were more likely to receive recommended services than children in the intervention group. It is possible that some caseworkers may not have advocated as strongly for children in the intervention group to receive mental health services because of a perception that the mental health needs of intervention children were being met through the preventive intervention, even though the intervention was not intended to replace individual therapy.

4.4. Limitations

Study results should be interpreted within the context of the following limitations. While the current study found that screening report recommendations were associated with increased mental health and educational service implementation, we are unable to conclude that the report recommendations directly led to service implementation for these youth. It is possible that caseworkers or other adults implemented new services without reading screening evaluation reports. Stronger conclusions about the causality of screening evaluations on later service implementation would have been possible if children had been randomly assigned to receive screening evaluations. However, this design was not possible given ethical and practical concerns. Reliance on youth reports of mental health service utilization may also be considered a limitation of the current study. While caregivers were asked about children's mental health service utilization, many youth changed caregivers between baseline and follow-up interviews. Because newer caregivers may not have known the children in their care very long and may not have been familiar with their service utilization histories, caregivers were only asked to report on children's past-month service utilization. Given the difference in reporting time frames between youth and caregivers, as well as the possibility that youth could have received and completed new mental health services between caregiver reporting windows (resulting in these services not being reported by caregivers), we decided to use youth report as the primary index of receipt of mental health service utilization in the current study. When youth report at T2 was limited to current mental health services only (versus since September), gross concordance between youth's reports of current mental health services and caregivers' reports of past-month mental health services was 82.1%. This concordance rate is particularly high, given that youth and caregivers completed different measures of service utilization. This study was also limited by power to detect effects in exploratory analyses due to the small number of events in some cells. The study design and sample size would likely have been adequate to detect meaningful effects had the rate of new service implementation been higher. While the exploratory analyses investigating patterns of disparities for newly implemented services following recommendations should be interpreted cautiously, they present interesting avenues for further investigation.

5. Conclusions

In summary, this is one of the first studies to demonstrate that mental health and educational screening can identify youth in out-of-home care with unmet needs and that recommendations from screening evaluations are associated with new service implementation. While screening report recommendations were related to service implementation, there is still much work to be done to reduce the gap between service need and receipt, especially within the educational domain. Youth in out-of-home care are at high risk for educational difficulties and many do not receive needed services. Greater inter-agency coordination and communication between child welfare, mental health providers, and schools are needed to close the gap between the dramatic need and underutilization of services for children in out-of-home care.

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