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The Impact of Kinship Networks on Foster Care Children's Outcomes

Objective: To identify different kin and fictive kin network support profiles available to children in foster care and examine whether these profiles predict behavioral outcomes.

Background: For kids in foster care, individual-level strengths have been shown to buffer the impact of maltreatment on negative outcomes. However, little is known about the possible benefit of kin and fictive kin networks on outcomes (e.g., internalizing symptoms and externalizing behaviors).

Method: This longitudinal study measured the involvement of 221 foster care children's (6–14 years of age) kin and fictive kin networks (e.g., visits, childcare, homework help, transportation). Strengths (e.g., coping, talents), maltreatment, internalizing symptoms, and externalizing behaviors were measured using the Child and Adolescent Needs and Strengths dataset.

Results: Using latent profile analysis, two kinship involvement profiles emerged: A low-involvement profile (75.5%) and a high-involvement profile (23.5%). The high-involvement profile was negatively associated with internalizing symptoms trajectories but not externalizing behavior trajectories. However, this effect was moderated by child-level

strengths: Children with more strengths and in the high-involvement profile had the best internalizing symptoms outcomes. Finally, membership in the high-involvement profile buffered the negative impact of maltreatment on internalizing symptoms trajectories.

Conclusion: The presence of both child strengths and kin and fictive kin involvement is associated with better outcomes.

Implications: These results support efforts to promote policies and practices designed to engage kin and fictive kin networks, which is not currently a priority in child welfare.

The relationship between child maltreatment and negative emotional and behavioral outcomes is consistent throughout the literature (Zielinski & Bradshaw, 2006). Yet research also points to the presence of protective factors that can help buffer this relationship (Bell, Romano, & Flynn, 2013). For example, child-level strengths (e.g., coping, talents) have been shown to buffer the relationship between traumatic experiences and emotional and behavioral problems and risks (Griffin, Martinovich, Gawron, & Lyons, 2009). Despite the key role that child-level strengths play in children's responses to adversity, they do not play the only role. Bell et al. (2013) found that after child-level strengths, family-level strengths in the form of positive parenting was the next strongest predictor of resilience.

Despite the gains made in the literature regarding factors at the child and family levels

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that are associated with adaptation, Masten and Monn (2015) pointed out that more work is required to study the interconnectedness of these two variables in the resilience literature. Using a contemporary developmental systems perspective, we follow Masten (2014) in defining resilience as a process enabling a dynamic system “adapt successfully to disturbances that threaten its function, viability, or development” (Masten, 2014, p.1018). If child-level and family-level factors interplay to affect developmental outcomes, then factors at both levels must be studied, with a focus on the way in which they interact as protective factors. From this perspective, a *protective factor* is any quality of the child or family that independently or in concert helps buffer the relationship between risk and outcome. Therefore, our use of child-level and family-level protective factors is consistent with the stress-buffering hypothesis definition (Cohen & Willis, 1985). The stress-buffering hypothesis has been used as a model of how social support can be protective, such as by providing esteem support or informational support in the context of adversity to promote adaptation to the stress.

Notably, at the family ecological level, more attention has been paid to the nuclear family system, and relatively little is known about the role of kin (e.g., grandparents, aunts/uncles, cousins) and fictive kin (e.g., pastors, teachers, family friends) network support in affecting children’s developmental outcomes. Even less is known about the possible protective benefits of these networks among children in foster care (Blakeslee, 2012, 2015). This study was designed to meet a need in the empirical literature by examining the role of both child-level strengths and nonparental kin and fictive kin involvement (protective factors) as buffers in the relationship between maltreatment (risk) and longitudinal emotional and behavioral outcomes (i.e., internalizing and externalizing behaviors; indicators of adaptation) among children 6 to 13 years of age in foster care.

CHILD-LEVEL STRENGTHS AND (FICTIVE) KIN INVOLVEMENT

The benefits of child-level strengths, including coping (Compas, Connor-Smith, & Saltzman, 2001), talents (Gilligan, 2001), optimism (Brodhagen & Wise, 2008), ego overcontrol (Kim, Cicchetti, & Rogosch, 2009), and

self-esteem (Cicchetti & Rogosch, 1997), have been well documented in the literature regarding their capacity to buffer the impact of adversity on negative outcomes. However, a noteworthy limitation in the literature is that more emphasis has been placed on child-level assets and much less research has explored the possible benefits of kin and fictive kin networks (Scales & Gibbons, 1996); even less is known about these networks among children in foster care. Extended family and fictive kin involvement may be particularly beneficial to children in foster care given that African American children are overrepresented in child welfare (Lu et al., 2004) and that kinship networks are often stronger and seen as more integral to development in the African American community (Cazenave & Straus, 1979; Hunter & Taylor, 1998; Harrison, Wilson, Pine, Chan, & Buriel, 1990). Research on children outside of the foster care system has found that support (e.g., financial, emotional, or instrumental aid) from the kinship network among ethnic minority families can be protective regarding the development of anxiety, substance use, and antisocial behaviors (e.g., McLoyd, Jayaratne, Ceballo, & Borquez, 1994; Taylor, Seaton, & Dominquez, 2008).

Support from the kin and fictive kin network may help foster parents manage some of the daily hassles they report (e.g., Harnett, Dawe, & Russell, 2012). Rhodes and colleagues found that foster parent’s needs for help with childcare, transportation, and financial support were statistical predictors of their intent to quit being foster parents (Rhodes, Orme, & Buehler, 2001). Further, given some of the disappointment foster parents experience regarding caseworker responsiveness, it is not surprising that they often rely more on their families than on caseworkers (Titterington, 1990) and report that their family networks are among the most important factors in their satisfaction and willingness to continue to foster children (Rhodes, Orme, Cox, & Buehler, 2003). This research suggests that the broader kin and fictive kin network may provide a supportive scaffold that helps to reduce caregiver burden, with implications for placement stability, foster parent stress, and resulting effects on children’s well-being.

Kin and fictive kin networks may also have a direct effect on children’s well-being. Research has demonstrated that children’s relationships with adult mentors outside of the nuclear family

can be protective regarding internalizing symptoms and externalizing behaviors (see Sterrett, Jones, McKee, & Kincaid, 2011). However, even less formal involvement, such as weekly visits with grandparents, has been shown to be associated with lower levels of depression (Furstenberg & Hughes, 1995). In a foster care sample using a cross-sectional portion of the sample used in the present study, Jhe Bai, Leon, Garbarino, and Fuller (2016) found that kin and fictive kin network involvement (e.g., visits, telephone calls, tutoring) was associated with fewer externalizing behaviors. Research in the foster care literature regarding internalizing symptoms has frequently found that kin social support interacts with adversity by protecting against negative outcomes at lower levels of the adversity (Salazar, Keller, & Courtney, 2011).

GAPS IN THE LITERATURE

Overall, then, research indicates that both child-level strengths and children's kin and fictive kin networks can be protective regarding adverse outcomes, but much work remains. First, when exploring moderator effects, most resilience research emphasizes whether the proposed protective factor buffers the association between adversity and outcome with a two-way interaction variable between the adversity and a single proposed protective factor (Cicchetti, 2013; Luthar, Cicchetti, & Becker, 2000). However, developmental systems (Masten, 2014) and social ecological (Garmezy, 1983; Rutter, 1987; Werner & Smith, 1982) approaches to resilience hold that multiple levels of children's ecologies (e.g., child-level and family-level) work in concert to optimally predict positive outcomes. Research exploring the possible benefit of having both child-level and family-level assets is lacking (Ungar, 2011). Further, the overwhelming majority of studies exploring family-level factors only study the nuclear family system. When important people outside of the family are studied, it is often only the impact of a single or small number of important nonparental adult persons. However, social convoy theory (Kahn & Antonucci, 1980) holds that the full social network provides the greatest opportunity for network members to take on specific functions in supporting an individual's needs. Given dynamic fast-paced changes in the needs of children entering foster care, a larger social convoy may help by allowing different

members of the family to be available to take on new roles as needed and also to relieve family members who are feeling overburdened.

A second gap in the literature is that the study of kin and fictive kin networks is even scarcer in child welfare than outside of child welfare. This is important considering that foster care children perceive nonparental adults as more important in their lives than non-foster care children (Farrugia, Greenburger, Chen, & Heckhausen, 2006).

Finally, a third area for development in the literature is the need for more person-focused research in this field versus more traditional variable-centered approaches; this represents a limitation because these two approaches pertain to unique research aims. Variable-focused approaches explore the ways in which specific variables affect outcomes as independent variables, moderators, or mediators (Masten, 2001). This approach is well suited to examining the specific role of these variables (e.g., whether visits with extended family predict behavioral outcomes), and it maximizes statistical power. However, variable-focused approaches are ineffective in reflecting the nuanced relationship among sets of variables that is necessary to test the tenets of dynamic systems models, such as what is theorized in developmental systems approaches. Person-focused approaches seek to find distinct classes of people within the sample that share attributes (e.g., identifying distinct types of family involvement). As such, these approaches seek to better describe the way variables present relative to other variables in describing people.

PRESENT STUDY

The literature is sparse regarding the impact of kin and fictive kin involvement in foster care children's lives on key child welfare outcomes such as emotional and behavioral outcomes. Even less is known about the role of kin and fictive kin involvement at the time of entry into care and the types of families that exist in terms of support and involvement provision. The present study was designed to explore the types of kin and fictive kin involvement that exist for children when they enter care and the relationship between these family types and behavioral (internalizing and externalizing) outcomes. The involvement measured covers a range of categories (e.g., visits, telephone calls, childcare support, support to the foster

parent, tutoring). We hypothesized that two protective factors—child-level strengths (H1) and (fictive) kin involvement (H2)—are associated with lower internalizing problems and externalizing behavior. Further, we hypothesized that child-strengths and (fictive) kin involvement each moderate the relationship between maltreatment and outcome (H3 and H4, respectively). In addition, we hypothesized that child-level strengths and (fictive) kin involvement interact such that higher levels of both protective factors would confer the highest advantage (H5). We further hypothesized that child-level strengths, (fictive) kin involvement, and maltreatment interact such that higher levels of the two protective factors optimally buffer the association between maltreatment and outcome (H6). Finally, we hypothesized that children with more (fictive) kin involvement have fewer placements (H7) and more placements with relatives (H8).

METHOD

Participants

Participants were children and adolescents entering the care of the Illinois Department of Children and Family Services (DCFS) who received Family Finding services as part of a grant through the Children's Bureau (see Procedure). Eligible participants lived in Cook and Will Counties between October 2011 and October 2014.

Procedure

The data for this study were collected from an independent evaluation of a Family Finding demonstration grant from the Children's Bureau, known as the Recruitment and Kin Connections Project. The interventionists, known as Kin Connection Specialists, conducted an intensive family search and engagement outreach service for children's caseworkers. The information was intended to provide positive supportive resources for service planning and concurrent planning. They began meeting with family members from the beginning of children's entry into care at the temporary custody hearing. Through word-of-mouth, genealogy searches, file reviews, and interviews with the children, the Kin Connection Specialists located and interviewed as many relatives as they could

identify. The Kin Connection Specialists sent a list of participants in the intervention profile to a research team at the first author's institution as part of the program evaluation.

To determine types of involvement, the evaluation team reviewed relevant demographic and family information on the Illinois DCFS Statewide Automated Child Welfare Information System (SACWIS) database. This information provided a starting point for the interview with the Kin Connection Specialists to identify the kin and fictive kin and the level of involvement for these types of kin (e.g., respite, childcare). This two-step process allowed the evaluation team to better ensure that the list of kin and fictive kin in the child's life was complete and accurate. Any kin who could be identified were included.

In addition, the evaluation team received a database containing longitudinal Child and Adolescent Needs and Strengths (CANS; Lyons, 2009) data from DCFS and a partnering institution. These data provided us with longitudinal internalizing problems and externalizing problems data and Time 1 maltreatment, strengths, and family problems data. The institutional review boards at both DCFS and the first author's university approved this study.

Measures

Demographic and family information. The Kin Identification and Level of Engagement (KILE) form, which was developed for this study, was used to conduct SACWIS file reviews and to serve as a starting point for Kin Connection Specialist interviews. The following information was obtained: race/ethnicity, gender, age, kin and fictive kin types (e.g., maternal grandmother, maternal great aunt, paternal aunt, maternal cousin), and the type of kinship involvement provided to youth by each of the identified kin. The type of (fictive) kin involvement included the following variables, which were coded dichotomously (yes/no) for each (fictive) kin individual: visits to the child, telephone calls, letters or birthday cards, attendance at the child's important events (e.g., games, performances, graduations), invitations to family events (e.g., family holiday gatherings), mentorship, help with homework, childcare support, respite, transportation support, coaching, support to the foster parent (e.g., social support, financial support), and support

to the biological parent (e.g., transportation to Alcoholics Anonymous meetings, financial support, attendance at parental visitations). However, family members were rarely recorded as writing letters, attending or inviting the child to important events, providing respite, coaching, or mentoring, and these items were therefore not included in our analyses. Therefore, the following variables were included in further analyses: visits, telephone calls, support to the biological parent, support to the foster parent, childcare, help with homework, and transportation. These dichotomous items were summed to obtain composite scores. In addition to studying involvement, we were able to use the data to determine the network range of children in the sample. Network range refers to the generational range of kin and fictive kin types (e.g., aunt, grandparent) or in type of fictive kin (e.g., coach, teacher). For example, if a child experienced an involved aunt and an involved grandfather, this would cover two generations, and the child would receive a range score of two. If the child experienced involvement from an aunt, grandfather, cousin, and coach, the child would receive a score of four. Traditional foster parents were coded as fictive kin so that their involvement with the child would be measured as well. Although created for this study, the KILE has already been shown to demonstrate concurrent validity (Blakely, Leon, Jhe Bai, & Fuller, 2016; Jhe Bai et al., 2016).

The initial SACWIS file review was conducted between 45 and 90 days of entering foster care to ensure that the child's SACWIS psychosocial history had been completed. The Kin Connection Specialist interviews were conducted after the file review was complete but no more than 180 days after the participants entered foster care. However, because Kin Connection Specialists began their Family Finding work at the temporary custody hearing and completed all work within 40 days of DCFS taking Temporary Custody, all data received regarding the type of kin and fictive kin involvement closely aligned with involvement as the child entered care.

CANS data. Time 1 CANS data were measured by workers conducting the initial psychosocial history upon children's entry into care and within 45 days of temporary custody. Subsequent CANS were completed by children's caseworkers at 6-month intervals and by placement review or wraparound teams when

additional services were required. Participants were selected for analysis if they received three or more assessments in accordance with the requirements of the analytic approach used in this study. With three or more time points, we were able to fit trajectories to scores and therefore measure the course of change overtime.

To complete the CANS as part of the psychosocial history, workers must first establish a kappa reliability of .80. Subsequent file reviews to establish continuing reliability among caseworkers have consistently been found to remain reliable (see Griffin et al., 2009).

Internalizing symptoms. Internalizing symptoms items included depression, anxiety, somatization, traumatic grief/separation, and adjustment to trauma. Response options for each ranged from *no evidence of x* (coded as 0) to *clear evidence of a disabling level of x that makes it virtually impossible for the child to function in any life domain* (3). These items had an internal consistency (Cronbach's alpha) of .71. Because we eventually dichotomized the scale (discussed subsequently), we conducted a Kuder–Richardson 20, which produced a score of .63.

Externalizing behavior. Externalizing behavior problems included oppositional behavior, conduct disturbance, attention-deficit/impulse control, anger control, danger to others, sexual aggression, and delinquency. Response options for each ranged from *no evidence of x* (0) to *evidence of a severe level of x that places the child or community at significant risk of physical harm due to these behaviors* (3). These items had a Cronbach's alpha of .84. The Kuder–Richardson 20 for these items was .72.

Maltreatment. Items designed to measure maltreatment included neglect, physical abuse, sexual abuse, and emotional abuse. Response options for each item ranged from *no evidence of x* (0) to *child has experienced severe and repeated x that causes sufficient physical harm to necessitate hospital treatment* (3). These items had a Cronbach's alpha of .43.

Strengths. Strengths educational strengths, coping and savoring, optimism, talents/interests, spiritual/religious, and involvement in the community. Response options ranged from

child has a strong and stable x outlook for his/her future (0) to there is no evidence of x at this time and/or child has difficulties seeing positive aspects about him/herself or his/her future (3). Cronbach's α for these items was .88.

Family problems. Family problems included family dysfunction, such as domestic violence or constant arguing, and response options ranged from *no evidence of family dysfunction* (0) to *child is having severe problems with parents, siblings, and/or other family members* (3). Family strengths were also measured in the context of family problems, with response options ranged from *family has one or more strong relationships where communication is effective* (0) to *there is no evidence of any family relationships as strength at this time or the child has no identified family, or the family requires significant assistance to develop relationships and their ability to communicate* (3). These items had a Cronbach's alpha of .78.

DATA ANALYSIS

Latent profile analysis (LPA) was used to assess for possible (fictive) kin involvement profiles among the participants. LPA is akin to cluster analysis as it is a person-centered analytic approach that evaluates unobserved heterogeneity (i.e., profiles) that may be present within a larger sample. However, LPA differs from cluster analysis in that there are statistical indices to assist in determining the optimal number of profiles, in contrast to scree plots in cluster analysis, and profile memberships are assigned based on response probabilities as opposed to deviations from the group mean.

By employing typical fit indices (e.g., Akaike information criterion [AIC]; Bayesian information criterion [BIC]) and the bootstrapped Lo–Mendell–Rubin likelihood ratio test (BLMR LR), LPA allows for an inferential test of the number of profiles. There are multiple factors to consider regarding statistical power to distinguish latent classes, particularly the quality and number of indicators, sample size, and distinctiveness between classes (Gudicha, Tekle, & Vermunt, 2016; Tein, Coxe, & Cham, 2013). A simulation study suggested that in conditions of clear classification (indicated by entropy values greater than .8 to .9), sample sizes equal to and greater than 100 may be sufficiently powered (Gudicha et al., 2016). Additionally, the power

to distinguish between classes improves as a function of the number of indicators and the quality of the indicators (Tein et al., 2013).

To examine the possible effect of child strengths (H1), kin and fictive kin profiles (H2), the interaction between strengths and (fictive) kin profiles (H5), and the moderating effect of these variables and their interactions on maltreatment (H3, H4, and H6) on outcomes, a two-level hierarchical linear model (Bryk & Raudenbush, 1992) was used. By applying a two-level model to the data, we were able to nest CANS assessments into time (number of quarters [in terms of years] since entry into the system). Of primary interest, level two Time 1 (i.e., time invariant) predictors (e.g., demographics, strengths, profile membership) were used to predict slope trajectories of externalizing behavior and internalizing symptoms. Chi-square tests and independent samples t tests were used to test for descriptive differences between the two profiles (H7 and H8).

The outcomes, externalizing behavior and internalizing symptoms, were positively skewed with a large number of zeros. Data transformations such as a log-transformation were often insufficient to ensure that the assumptions of the test (most notably, the assumption of normality of residuals) were met. This can lead to biased parameter estimates and an increased likelihood of Type I errors. Therefore, we recoded the CANS items into dichotomous count data by recoding scores of 0 or 1 into a "0" (*absence of a problem*), and scores of 2 or 3 into a "1" (*presence of a problem*). The items were then summed, allowing us to use a hierarchical generalized linear model (HGLM) with a Poisson distributed outcome consisting of count data. We ran the model using the overdispersion feature in HGLM (Bryk & Raudenbush, 1992) because the mean and standard deviations of both scales were equivalent. We chose to use a "2" or "3" to indicate the presence of an externalizing behavior/internalizing symptom problem based on the item anchorings and how the CANS is used in practice. Because of the number of analyses run, an alpha was set at .01 to reduce the risk of experiment-wise Type I errors. Two- and three-way interactions were tested using standardized scores.

There were no missing data from the file review analyses that were used to run the latent profile analyses, leaving the full sample of 221 cases. However, 27 were missing an initial

Table 1. Descriptive Statistics of High- and Low-Involvement Profiles and the Overall Sample, and Tests for Differences Between the Profiles

Variable	High involvement		Low involvement		Overall	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Total	52	23.5	169	76.5	221	
Demographic variables						
Age ^a	8.9	2.6	10.1	2.4	9.9	2.4
Gender: female	30	56.8	23	44.2	24	47.0
Race: African American	29	55.6	31	59.4	30	58.5
Ethnicity: Latino	7	13.9	7	13.3	7	13.4
Multiethnic	13	25.0	9	17.2	10	18.9
Entry to care variables						
Emergency shelter	7	13.2	18	35.3**	16	30.4
Home of relative	44	84.2	24	45.9***	28	54.5
Physical abuse	8	15.4	13	25.6	12	23.5
Sexual abuse	3	5.4	6	10.9	5	9.6
Neglect	46	89.2	43	82.2	44	83.7
Dependency	9	18.2	13	25.6	12	24.0
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Profile involvement variables						
Visits	4.5	3.0	2.6	2.4***	3.1	2.7
Phone calls	1.7	2.0	1.7	2.0	1.7	1.9
Support to biological parent	3.1	2.3	2.9	2.8	3.0	2.7
Other support to foster parent	4.4	2.16	1.1	1.7***	1.9	2.3
Childcare	3.0	0.9	0.7	0.8***	1.2	1.3
Help with homework	1.1	1.4	0.3	0.6***	0.4	0.9
Transportation	2.0	1.4	0.3	0.6**	0.7	1.2
Family network variables						
Size of kin and fictive kin network	21.7	7.1	18.5	7.3	19.2	7.4
Breadth of kin and fictive kin network	3.8	1.6	3.0	1.5	3.1	1.5
Placement variables						
Number of placements	2.3	1.1	3.2	2.4	2.9	2.0
Number of relative placements	1.4	0.6	1.1	1.1	1.2	1.0
Proportion of relative placements to total placements	0.7	0.3	0.4	0.4***	0.5	0.4

Note. ^aAge statistics are *M* and *SD*.

p* < .01. *p* < .001.

CANS assessment or the assessment occurred after the first 90 days in care. An additional 25 cases were dropped because the children only had one CANS assessment (usually because they entered care later). Finally, 36 cases were dropped because they were missing items comprising the strengths or maltreatment CANS scale. This left a total sample for the outcome analyses of 133. Despite the missing data, the sample of children with missing data did not

statistically differ from the sample of children with complete data on demographic data, reason for entry into care, profile membership likelihood, or first placement on entry into care.

RESULTS

As Table 1 depicts, approximately 50% of the sample was female, and a majority was African American (58.5%). A majority of children

Table 2. Information Criteria, Entropy, and Likelihood Ratio Test Values

Model	Fit indices and entropy of the latent profiles					
	Log likelihood	AIC	BIC	ABIC	Entropy	BLMR LR
1 profile	-3028.85	6085.69	6133.27	6088.90		
2 profile	-2898.86	5841.71	5916.47	5846.75	.89	.027
3 profile	-2796.64	5653.28	5755.23	5660.16	.96	.201

Note. ABIC = adjusted Bayesian information criterion; AIC = Akaike information criterion; BIC = Bayesian information criterion; BLMR LR = Bootstrapped Lo-Mendell-Rubin likelihood ratio.

experienced neglect (83.4%), and the next highest categories were dependency (24.0%) and physical abuse (23.5%); far fewer children entered care with an indication of sexual abuse (9.6%). The mean age of children in the sample was 9.85 years ($SD = 2.44$, range = 6–14). Children had a mean of approximately three placements, and approximately half of those placements were with relatives. Finally, with regard to network size, a mean of 19.22 kin and fictive kin ($SD = 7.37$, range = 2–41) were identified, and the network range mean was 3.14 ($SD = 1.51$, scale range = 0–7).

Using the previously described criteria for optimal profile selection, three LPA models were sequentially conducted using Mplus (Version 7; Muthén & Muthén, 1998). The three-profile model was the best fit to the data based on having the lowest observed AIC, BIC, and ABIC values, and highest entropy value, but the BLMR LR had a p of .201 (see Table 2), indicating that the three-profile model did not statistically improve the fit of the model. Therefore, the two-profile model was retained with the two profiles identified as the high-involvement profile ($n = 52$, 23.53%) and the low-involvement profile ($n = 169$, 76.47%). The high-involvement profile had kin and fictive kin networks that were more likely to visit the child, provide childcare support to the foster parent, tutor the child, provide transportation, and offered other support to the foster parent (e.g., emotional or financial support; see Table 1).

Youth's first placement being in a shelter occurred at a statistically lower rate among those in the high-involvement profile (13.2%) than among those in the low-involvement profile (35.3%), $\chi^2(1, N = 142) = 9.50$, $p = .002$. Further, most children in the high-involvement profile experienced a first placement with a relative (84.2%), whereas fewer than half of the children in the lower involvement profile were initially placed with a relative, $\chi^2(1,$

$N = 142) = 20.49$, $p < .001$. As a result, placement was included as a covariate in the HGLM analyses. The involvement profiles did not statistically differ on reason for entry into the system, network size or breadth, or mean number of placements or relative placements. However, the proportion of relative placements to total placements was statistically higher for the high-involvement group (.71, $SD = .28$) than the low-involvement group (.44, $SD = .38$), $t(175) = 5.11$, $p < .001$. Finally, the groups did not statistically differ on demographic variables (i.e., age, gender, race/ethnicity).

The majority of intercorrelations among the predictors and covariates used in the HGLM analyses were small to moderate (less than .30; see Table 3). Two correlations were greater than .30. The correlation between strengths and family dysfunction was $-.51$ ($p < .01$). Because of the size of the correlation and concerns about multicollinearity, family dysfunction was not included in the HGLM analyses. The strengths variable was used instead of family dysfunction because strengths figured prominently in our hypotheses. The correlation between involvement profile and home of relative first placement was moderate at .38 ($p < .01$). We ran the models with and without the home of relative variable; the inclusion of the variable in the analyses did not substantively alter the results and was therefore kept in the model.

Internalizing Symptoms and Externalizing Behaviors

Unconditional growth curve analyses indicated that the mean trajectories for externalizing behavior and internalizing symptoms had a nonzero intercept and a nonzero slope. For the conditional internalizing model, 6 of the 13 variables used to estimate internalizing problems slopes were statistically significant at the .01 level (see Table 4). Not surprisingly,

Table 3. Correlations Among Poisson Regression Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Internalizing	–										
2. Externalizing	.33**	–									
3. Age	.11	.27**	–								
4. Gender (female)	.13	–.02	.06	–							
5. Race or ethnicity (African American)	–.01	.07	.07	.02	–						
6. Relative placement	–.21*	–.33**	–.27**	.05	–.02	–					
7. Shelter placement	–.04	.14	.18*	–.02	.05	–	–				
8. Maltreatment	.32**	.21*	.02	.05	–.20*	–.12	–	–			
9. Strengths	–.27**	–.40**	–.20	.09	–.06	.25**	–.17	–.16	–		
10. Profile (high involvement)	–.10	–.13	–.25**	.14	–.05	.38**	–.26	–.20	.11	–	
11. Family dysfunction	.44**	.39**	.22*	.06	.08	–.16	–.04	.28**	–.51**	–.14	–

Note. * $p < .05$. ** $p < .01$.

Table 4. Multilevel Poisson Model (Population-Average) for CANS Internalizing Symptoms and Externalizing Behaviors Trajectories

Slope terms	Internalizing symptoms			Externalizing behaviors		
	β	SE	p	β	SE	p
Intercept	–.01	.05	.899	–.05	.04	.199
CANS Time 1 (externalizing/internalizing)	–.06	.02	<.001	.02	.01	.100
Age	–.04	.02	.024	.00	.02	.998
Gender (female)	–.00	.03	.975	.03	.04	.384
Race/ethnicity (African American)	.10	.03	.003	.09	.03	.005
First placement: relative	.04	.05	.411	.02	.05	.600
First placement: shelter	.11	.04	.013	.07	.03	.025
Maltreatment	.07	.02	.003	.10	.02	<.001
Strengths	–.09	.02	<.001	.04	.02	.060
Profile (higher involvement)	–.19	.06	.001	.15	.07	.051
Maltreatment \times strengths	.05	.02	.028	.06	.03	.027
Maltreatment \times profile	–.15	.04	.001	–.13	.06	.022
Strengths \times profile	–.14	.04	.001	–.01	.06	.832
Maltreatment \times strengths \times profile	–.05	.03	.128	.09	.04	.035

Note. All slope terms were controlled for at the intercept. CANS = Child and Adolescent Needs and Strengths.

Time 1 internalizing behavior was again negatively associated with the slope of internalizing behavior over time ($\beta = -.06, p < .001$). In terms of demographics, only race/ethnicity was associated with internalizing symptoms slopes: The African American children in the sample had higher slope trajectories than the other children (i.e., Caucasian, Latino, Multiethnic; $\beta = .10, p = .003$). Children in the high-involvement profile had lower slope trajectories than those in the low-involvement profile ($\beta = -.19, p = .001$), and children’s strengths were negatively associated with slope trajectories ($\beta = -.09, p < .001$). Further, the

interaction between strengths and involvement profile was statistically significant ($\beta = -.14, p = .001$). Although maltreatment was positively associated with internalizing slope trajectories ($\beta = .07, p = .003$), this effect was buffered by a statistically significant interaction between maltreatment and involvement profile ($\beta = -.15, p = .001$).

We next probed the statistically significant interaction effects (strengths \times involvement profile; maltreatment \times involvement profile) using recommendations from Preacher, Curran, and Bauer (2006). Concerning the strengths \times

FIGURE 1. INTERNALIZING SYMPTOMS INTERACTION FOR PROBING OF STRENGTHS \times KINSHIP INVOLVEMENT PROFILE.

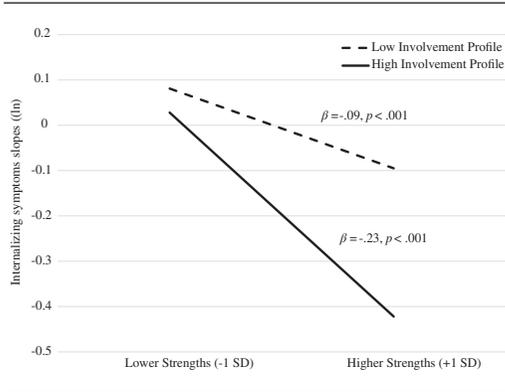
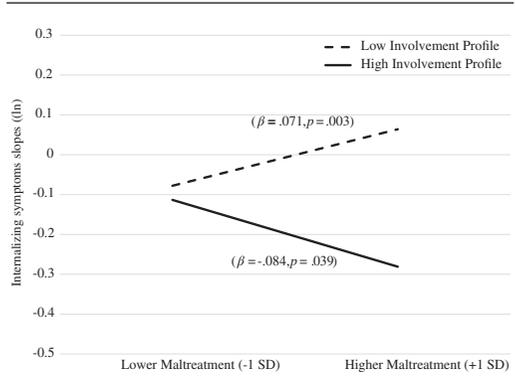


FIGURE 2. INTERNALIZING SYMPTOMS INTERACTION FOR PROBING OF MALTREATMENT \times KINSHIP INVOLVEMENT PROFILE.



kinship profile interaction (see Figure 1), the slopes for both the low-involvement profile and the high-involvement profile were statistically significant and negative ($\beta = -.09, p < .001$ and $\beta = -.23, p < .001$, respectively). These results suggest that both profiles experienced lower mean internalizing slope trajectories with increasing child strengths. However, the confidence interval for the low-involvement profile (99% CI [-.05 to -.13]) did not overlap with the confidence interval for the high-involvement profile (99% CI [-.16 to .29]). This indicates that as Time 1 children's strengths increase, the benefits regarding lower internalizing symptoms accrue more for children with higher levels of kin and fictive kin involvement. Concerning the maltreatment \times involvement profile interaction (see Figure 2), the slope relating increasing levels of maltreatment and higher internalizing symptoms trajectories was positive and statistically significant for the low-involvement profile ($\beta = .07, p = .003$) and negative but not statistically significant for the high-involvement profile ($\beta = -.08, p = .039$).

In terms of externalizing behaviors, two of the 13 variables were statistically significant at the .01 level. As with the internalizing symptoms analyses, the African American children in the sample had higher externalizing behavior slope trajectories ($\beta = .09, p = .005$). Further, higher levels of maltreatment were associated with higher externalizing behaviors trajectories ($\beta = .10, p < .001$). However, neither involvement profile nor strengths were statistically associated with externalizing behavior trajectories as main effects and none

of the two-way interactions or the three-way interaction between strengths, involvement profile, or maltreatment were statistically significant.

DISCUSSION

We used a person-centered approach via latent profile analysis to explore possible taxonomies of children's kin and fictive kin involvement. In accordance with a developmental systems approach to studying adaptation in the context of risk (e.g., Masten & Roon, 2015), we explored the relationship between child-level and family-level strengths in protecting children from (relatively) negative outcomes.

We found two types of involvement profiles, a low-involvement profile and a high-involvement profile. The high-involvement profile had more kin and fictive kin who visited the child, provided childcare, provided other support to the foster parent (e.g., financial, emotional), provided tutoring, and provided transportation. These results suggest that a small but noteworthy percent of children in foster care have highly involved nonplacement kin and fictive kin networks. Because these networks are present upon children's entry into the system, it may benefit the children if caseworkers identify the children's (fictive) kin network early and ensure that any barriers to ongoing network involvement are addressed.

In terms of entry into care variables, the high-involvement profile had a much lower percent of children entering a shelter as a

first placement and a much higher likelihood of a first placement with a family member. However, the profiles did differ in that placements with relatives were far more common among children in the high-involvement profile than in the low-involvement profile, which suggests that kin and fictive kin who are involved may also be resources as future placements.

We found support for H1 and H2: Children's strengths and kinship involvement were associated with lower internalizing problems trajectories. H3 was not supported given that strengths and maltreatment did not interact to predict outcomes. H4 was supported: High kinship involvement buffered the relationship between maltreatment and internalizing problems. Although kinship involvement and strengths interacted such that being in the high-involvement profile and evidencing high personal strengths was associated with the lowest internalizing problems trajectories (H5), this effect was not further moderated by maltreatment (H6). With regard to placement variables, the profiles did not differ in terms of number of placements or placements with relatives (H7 and H8).

In terms of the relationship we found between the high- and low-involvement profiles and internalizing symptoms trajectories, it may be the case that reducing the burdens that foster parents experience allows them to provide better parenting, which then affects children's emotional functioning. This type of indirect effect has been found in the non-foster care literature. Specifically, Taylor, Casten, and Flickinger (1994) found that kinship networks had their beneficial effects on emotional and behavioral outcomes indirectly by promoting authoritative parenting, and among maltreated children, Lindsey et al. (2012) found that caregiver mental health needs mediated the relationship between network support and children's behavioral needs.

However, kin and fictive kin networks have also been shown to exert a direct effect on children's outcomes (e.g., Bussing et al., 2003). Indeed, our findings are also consistent with social convoy theory—that is, that an individual's broader social network becomes a supportive scaffold for coping and well-being (Kahn & Antonucci, 1980). Children in foster care have multiple needs, often across multiple systems (e.g., child welfare school, correctional), and

their entry into a foster home often creates considerable disruption for the entire family system (Pecora, Whittaker, Maluccio, Barth, & Plotnik, 1992). The more people a child has in his or her life, the more opportunities there are for the network to adapt flexibly to the child and foster family's evolving needs. Either or both the indirect or direct explanations may describe the results given that our measure of involvement captured involvement that directly supported the foster parent (e.g., childcare help) or directly supported the child (e.g., tutoring help).

Although the extant literature indicates that involvement of nonparental adults in children's lives is generally beneficial in terms of both internalizing and externalizing outcomes (Sterrett et al., 2011), our results only showed a benefit for internalizing problems. Consistent with these findings, a meta-analysis conducted by Chu, Saucier, and Hafner (2010) indicated that while social support was protective for both conduct problems and psychological adjustment (defined as depression, anxiety, or happiness), the benefit of social support was stronger for psychological adjustment than for conduct problems. Further, diminished or lower social support among children entering foster care may be particularly harmful given that entrance into care always involves social separation. This may amplify feelings of social isolation and loneliness, which has been shown to have an effect on internalizing problems outside of foster care (see Heinrich & Gullone, 2006).

The benefit of kin and fictive kin involvement was more pronounced for children with more individual strengths. Our finding that the presence of both child-level strengths and higher kin and fictive kin involvement was optimally protective against internalizing symptoms supports ecological models of resilience and service delivery. For example, the *system of care* approach borrows from an ecological approach to human development in promoting the role of child, family, and community capacities in the service of improved outcomes (Stroul & Friedman, 1994). Nonetheless, the empirical literature in general has focused more attention on child-level strengths compared with family-level strengths, and when family-level strengths have been studied, the focus has been on the nuclear family or kinship placement family and not the extended, nonplacement family (see Afifi & MacMillan, 2011). The results of our study

suggest that more attention should be paid to kin and fictive kin in the foster care intervention and research literature, particularly on the way in which their involvement interacts with child-level strengths to promote positive outcomes. Although we did not study changes in strengths or kin and fictive kin involvement, these findings support future work seeking to determine whether changes in both strengths and involvement decrease internalizing symptoms. This finding would highlight the importance of building not just child-level strengths but also supporting the engagement and building up of kinship networks. This would require a noteworthy shift in current child welfare practice because the engagement of noncustodial extended family and fictive kin is not a priority in the field.

Our finding that internalizing symptoms slopes were positively associated with maltreatment severity for the low-involvement but not the high-involvement profile suggests that kinship involvement serves as a stress buffer between maltreatment and internalizing symptoms. Using Luthar et al.'s (2000) framework, the protective role of kinship involvement in the present study serves a protective–stabilizing role. Luthar et al. (2000) described a protective–stabilizing effect as occurring when an attribute, in this case kin and fictive kin involvement, is stably protective across levels of risk. These results support Cohen and Willis's (1985) seminal work on the role of social support in the stress-buffering hypothesis framework. Cohen and Willis suggested that social support can protect against the effect of stress on outcome in any number of ways. For example, esteem support can help protect self-esteem in the face of stress, and informational support can help people modulate their negative appraisals related to the stress. However, it is important to note that prior work with maltreated children has found a protective–reactive effect of social support such that social support only provides a benefit at lower levels of maltreatment (Wright & Folger, 2016). It is possible that support and involvement have different effects depending on the sample studied, and the method of studying maltreatment and support and involvement. Future theoretical and review work should seek to integrate these varying findings to sharpen a research agenda for work in this area.

Limitations

The primary limitation of this study was our use of a measure developed for this research. Therefore, it does not have the psychometric rigor typically seen in more established measures. Nonetheless, prior work using data from this study has been successful in predicting a range of outcomes. For example, a composite score of overall kin and fictive kin involvement using our tool was the single strongest predictor of a first placement being in a shelter (Leon, Jhe Bai, Fuller, & Busching, 2016). Also, in the overall sample, which was used to examine the outcomes of a Family Finding intervention, the intervention group was associated with higher kinship involvement compared with the control group with the implementation of this measure (Leon, Saucedo, & Jachymiak, 2016).

Further, due to missing data, our initial sample size decreased by approximately 40%, compromising statistical power and generalizability. However, the sample of children with missing data did not statistically differ from the sample of children with complete demographic data, reason for entry into care, profile membership likelihood, or first placement upon entry into care.

Another problem with our measure of kin and fictive kin involvement is that it does not overlay neatly on traditional measures of social support. Part of the reason for this is that our tool attempts to measure support in the form of tangible involvement behaviors, such as visits, childcare, and transportation involvement. Traditional measures of support also measure emotional, informational, and appraisal support, which are rated from the subject's perspective and is therefore better construed as *perceived support*. Further, perceived support has often been shown to demonstrate the strongest relationship with well-being in the literature, so it may be that our involvement profiles were to some degree also measuring perceived support and that the results are due to the perceived support construct. It is also important to note that our tool did not measure support provided to a specific person but rather to the foster family, namely the foster parent and foster child. Therefore, this study should be seen as an examination of kin and fictive kin network involvement and not social support as it has been defined in the literature. Further, we did not measure the frequency with which the

involvement occurred (e.g., frequency of visits). Finally, it is important to note that we did not study the processes through which these variables had their effect and the potentially nuanced ways in which they may work in concert to be protective; doing so should be a priority for future work.

Despite these limitations, a strength of the study is that our measure of involvement was obtained through a review of records and third-party interviews, which may have mitigated against biases often seen with self-report data (e.g., Yucel & Downey, 2010). Again, perceived support has been shown to be the most beneficial measure of social support but prior research has not used our measure of involvement. Further, children entering foster care may have difficulty assessing perceptions of support given the often traumatic circumstances of entrance and transition to care. Further, our measure of kin involvement (KILE) was obtained from sources different from our measure of internalizing problems and externalizing behaviors (CANS), allowing us to use a multi-informant approach.

Implications

Child welfare research and practice has not fully recognized the potential value of nonplacement kin and fictive kin. In this study, we found that higher child-level strengths and membership in the high-involvement kin and fictive kin profile were together optimally protective against longitudinal internalizing symptoms outcomes. This result supports future work seeking to enhance both strengths and family involvement in practice settings. It may be the case that more kin and fictive kin involvement better engages the existing strengths of children so that they can be better realized in support of greater adaptation. This supports existing models of service delivery in foster care, such as the System of Care approach. From a research perspective, future studies should be designed to understand the processes through which child-level and family-level strengths interact to promote more positive outcomes (Masten & Monn, 2015).

Our findings suggest that casework practice should identify the involvement of kin and fictive kin networks, which is currently not a priority in the field. Clinical research should be designed

to understand the barriers the child welfare system experiences in supporting kin and fictive kin networks and explore ways to overcome these barriers. For example, it may be the case that family members want to be more involved, but existing family dynamics limit their motivation. The potential for dysfunctional family dynamics is likely more pronounced among families with child welfare involvement. Family systems interventions could be employed to help address these barriers. Family Finding (Campbell, 2010) is an approach to locating and engaging kin and fictive kin networks in child welfare, but the empirical base suggests that this approach is only of modest benefit to children (Leon, Saucedo, & Jachymiak, 2016). More work may need to be done to incorporate the Family Finding intervention into more established clinical treatments, such as multisystemic therapy (Henggler, Schoenwald, Borduin, Rowland, & Cunningham, 2009).

AUTHOR NOTE

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