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# North Carolina Family Assessment Scale: Measurement Properties for Youth Mental Health Services

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## Abstract

**Objective:** The purpose of this study is to assess the reliability and validity of the North Carolina Family Assessment Scale (NCFAS) among families involved with youth mental health services. **Methods:** Using NCFAS data collected by child mental health intake workers with 158 families, factor analysis was conducted to assess factor structure, and thematic analysis of intake notes was used to test content validity. **Results:** This study found only three NCFAS subscales. The case notes included themes specific to youth with mental health needs that were not captured by current NCFAS items. **Conclusions:** This study suggests variation in the fit for the NCFAS in child mental health services compared to the measurement properties established in child welfare samples.

## Keywords

NCFAS, reliability, content validity, factor analysis

The systems of care philosophy (Stroul & Friedman, 1986) and efforts to curb the high costs of out-of-home services have led to an increased interest in developing in-home services for youth with mental health needs (U.S. Department of Health and Human Services [DHHS], 1999). Interventions like multisystemic therapy (MST; Henggeler, Melton, & Smith, 1992), functional family therapy (FFT; Alexander, Robbins, & Sexton, 2000), and wraparound (Burns, Hoagwood, & Mrazek, 1999) are examples of established practices that are now considered likely to work with families in home and community settings (U.S. DHHS, 2001). The goals of these programs broadly emphasize increasing parenting capacity, promoting stability of youth behaviors, and ultimately preventing out-of-home placement for youth.

While an outcome such as whether or not a youth subsequently experiences an out-of-home placement is fairly straightforward to measure, assessing changes in family functioning is not as simple. There are many facets to understanding a family environment, including issues specific to the child, the caregiver as well as their interactions with each other and other systems. Social workers trained in systems theory and ecological frameworks are likely attuned to the complexity of comprehensively assessing a family. These assessments can be completed informally as part of the initial intake and goal-setting phase, but the growing focus on performance measurement and accountability has strengthened the use of standardized assessment instruments (Springer, Abell, & Hudson, 2002).

## Overview of Family Assessment

Many of the instruments to assess family functioning have origins in the field of marriage and family therapy. As such, they often reflect a specific clinical approach to understanding and working with families. Examples of these measures include the family assessment device (FAD; Epstein, Baldwin, & Bishop, 1983), the Family Adaptability and Cohesion Evaluation Scales (FACES; Olson, Tiesel, & Gorall, 1996) and the Family Environment Scale (FES; Moos & Moos, 1976). These measures assess abstract constructs like family cohesion, flexibility, roles, and personal growth. There is little attention to more practical obstacles to family functioning like the habitability of the living environment or the presence of substance abuse within a family.

Each of these family therapy assessments are well validated with established psychometric properties. They rely primarily on self-report from family members, which are easy to administer, but may limit participation and input from younger members of the family. While FACES has been validated with youth as young as 11 years old (Franklin, Streeter, & Springer, 2001), some researchers do not

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recommend children under 12 years of age completing the FAD (Sawin & Harrigan, 1995). In considering candidates for a comprehensive assessment of functioning among families involved in the child mental health system, the primary focus on abstract therapeutic constructs and the ability to assess only the perspectives of parents and older youth make these earlier contributions an imperfect fit.

More broad-based ecological models of assessing family functioning have developed within the child welfare field. As child welfare policy shifted from child safety to family preservation in the 1980s, interest in serving families and promoting stability within the family setting was strengthened. In a recent review of standardized family assessments, Johnson and colleagues (2008) identified 85 different instruments. While entities like the Children's Bureau have presented best practice guidelines on family assessment processes, they do not advocate for a specific standardized measurement tool (U.S. DHHS, 2005).

Parallel to the increasing interest in family-based care within the child welfare system, the children's mental health field has also seen a growth of in-home services for families to prevent out of home placement for youth. The traditional medical model focused on the symptoms of the identified patient; sometimes parents were seen as partly to blame for the child's problems rather than part of the solution. However, as a child's mental health is expressed in the context of his or her social environment (U.S. DHHS, 1999), the systems of care philosophy promotes the role of family and community in supporting youth with mental health needs, and measures are needed to assess the functioning of the family context.

There are many choices for standardized family assessment measures—from self-report surveys to multimethod assessment packages. In assessing a family receiving in-home mental health services for a youth, calibrated assessment instruments that provide comprehensive measurement of family functioning constructs are needed. This article explores the capacity for the North Carolina Family Assessment Scale (NCFAS; discussed below) to be able to adequately assess families involved in the child mental health system.

## NCFAS

The NCFAS was collaboratively designed as a practice tool in the early 1990s by providers, administrators, and researchers to assist with service planning and to broaden the assessment of family preservation outcomes beyond just preventing placement. Among 85 assessment tools used in child welfare, the NCFAS was rated as one of the top three family assessment instruments because of its comprehensiveness in assessing multiple domains of family functioning and its relevance to assessing family-related risk factors to target for intervention (Johnson et al., 2008). It can be used for case planning and ongoing monitoring

as well as decision making around investigation, service continuation, and reunification. It has since been implemented in child welfare services for several states including Alaska, Colorado, Connecticut, Indiana, New Mexico, and Utah. In Maryland and North Carolina, the NCFAS is used across the state in family preservation services for child welfare as well as several juvenile justice programs.

The NCFAS has several features that make it a good fit for comprehensive family-based interventions. Ecological in focus, the NCFAS has a five-factor structure that reflects several domains of family life, including Environment, Child Well-Being, Family Interactions, Family Safety, and Parent Capability. Unlike many deficit-based instruments, each of the NCFAS items can be rated on a continuum from  $-3$  (*serious problem*) to  $+2$  (*clear strength*), with the option of a baseline score of 0 for domains that reflect adequate functioning. The NCFAS can be completed by workers at intake with minimal training, and because it only has 39 items, the burden is minimal. The NCFAS has been found to be sensitive to measuring change (Kirk, Kim, & Griffith, 2005). Reed-Ashcraft, Kirk, and Fraser (2001) analyzed the psychometric properties of the NCFAS with child welfare recipients and found the measure had adequate internal consistency and concurrent validity with the Child Well-Being Scales (CWBS; Magura & Moses, 1986), index of family relations (IFR; WALMYR, 1996), and the Family Inventory of Resources for Management (FIRM; McCubbin, Thompson, & McCubbin, 1996).

Because of the similar focus on improved family functioning for in-home mental health services for youth and the paucity of available standardized instruments that measure multiple domains of family ecology, there is interest in using the NCFAS outside of family preservation within child welfare. The NCFAS for Reunification (NCFAS-R) assesses readiness for reunification from child welfare supervised foster care and is in use in several states. Some research has suggested its utility for community-based mental health services (cf. Johnson et al., 2008). However, to date, no measurement studies have examined whether the NCFAS is an appropriate tool for non-child welfare populations.

The purpose of this article is to assess the reliability and validity of the NCFAS with families served by a child mental health in-home treatment program. The research question addressed is as follows: Are the NCFAS measurement properties supported when used with a sample of families involved in the child mental health system? Factor analytic techniques will be used to examine whether the established factor structure of the NCFAS is supported with a mental health sample. In addition, thematic analysis will be used with unstructured case notes to assess content validity of the NCFAS in comprehensively addressing relevant domains of family life for families involved in the child mental health system.

## Method

### Program Setting

The In-Home Intervention Program for Children (IHIP-C) is a pilot program, operating in five Maryland counties, to promote the treatment of children with serious mental health problems in the community (cf. Lindsey, Lee, & Sullivan, 2009). The target population for IHIP-C is youth who significantly utilized the public mental health systems (PMHS) through institutional care (i.e., hospitalization or residential treatment centers) and foster care children. In addition, youth identified for IHIP-C are judged to be at risk of more restrictive placements based on intensity of mental health needs. The program utilizes the NCFAS as an initial assessment tool to identify family needs and strengths and then as a measure of changes in family functioning during the course of service delivery.

### Research Design

This study used intake data from Maryland's IHIP-C program, which included NCFAS scores and case notes. There were 158 NCFAS measures completed at intake by 29 assessors across five counties. The NCFAS is completed following the initial visit to the home when the assessor meets with both the youth and caregiver(s). In addition to completing the close-ended NCFAS items, workers also recorded observations about the family needs and strengths as part of their case notes at the intake visit. Both the quantitative NCFAS item scores and the open-ended case notes were used in this study. All study methods were approved by the Human Research Protections Office at the University of Maryland, Baltimore.

Child mental health workers who completed the NCFAS had varying levels of education, with just over half of the NCFAS measures in this study completed by workers who held a master's degree or clinical license. About half of the master's level clinicians had a master's in social work degree. In addition to formal education, child mental health workers were trained by their supervisors or the IHIP-C program administrator on the NCFAS measure. The IHIP-C program administrator received formal training in the instrument from its developers. Subsequent training for workers was less standardized. The training involved becoming familiar with the instrument and its scoring. However, no efforts to insure interrater reliability or uniformity in training were conducted. Some workers receive ongoing feedback and consultation from their supervisor on NCFAS scoring; in some cases, both workers and supervisors collaboratively complete the NCFAS instrument.

### Sample

All 158 families completed their intake meetings between March 2005 and February 2008. Only families with a youth

**Table 1.** Description of Sample

Variable	n (%)
Male	98 (63%)
Race	
White	89 (56%)
African American	53 (33%)
Other	16 (10%)
Axis I diagnosis	
Disruptive behavior disorders	46%
Attention deficit	54 (34%)
Oppositional defiant	11 (7%)
Conduct	5 (3%)
Impulse	2 (1%)
Explosive personality	1 (0.6%)
Mood disorders	37%
Depression	23 (15%)
Bipolar	19 (12%)
Mood disorder NOS	16 (10%)
Other	13%
Posttraumatic stress	6 (4%)
Anxiety	4 (3%)
Psychosis/schizo-affective	3 (2%)
Adjustment	3 (2%)
Cognitive/pervasive developmental	2 (1%)
Obsessive-compulsive	1 (0.6%)
Diagnosis not available	8 (5%)
Psychotropic medication use	79 (50%)
Age in years, <i>M (SD)</i>	12.7 (2.6)

Note: NOS = not otherwise specified.

who had a *Diagnostic and Statistical Manual of Mental Disorder* (4th ed; *DSM-IV*; American Psychiatric Association, 1994) diagnosis were eligible to participate in this program; however, the diagnosis type varied. Almost half of the sample (46%) had received a diagnosis of a disruptive behavior disorder (attention deficit disorder, conduct disorder, impulse control disorder, or oppositional defiant disorder). Youth ranged in age from 6 to 17 years, with a mean age of 12.7 ( $SD = 2.6$ ). Additional descriptive characteristics of youth served in the program are listed in Table 1.

### Data Analysis

The analytic plan followed several steps. First, descriptive statistics (frequencies, mean, range) for each item and the subscales were computed using SPSS 15.0. To assess the reliability of the five NCFAS subscales (Environment, Family Interactions, Parent Capacity, Safety, and Child Well-Being), internal consistency measures were calculated. A Cronbach's alpha coefficient of .70 was used as a benchmark of adequate reliability (Nunnally, 1978).

Next, factor structure was examined using Mplus 4.2 (Muthén & Muthén, 2001). Mplus was selected because the items in the measure have ordered categorical response

options, and maximum likelihood estimation most commonly used in confirmatory factor analysis assumes multivariate normal distribution. Mplus allows robust weighted least squares estimation, which has been shown to perform optimally for factor analysis with categorical indicators (Flora & Curran, 2004).

Confirmatory factor analysis was first conducted and model-fit statistics were assessed to determine how well the original NCFAS factor structure was supported with this population. Four model-fit measures were used. Robust even in smaller samples (Bentler, 1990), the comparative fit index (CFI) assesses the incremental fit of the model to a baseline model where covariances are assumed to be zero. The Tucker–Lewis index (TLI) compares a model's lack of fit with a baseline model's lack of fit (Bentler & Bonett, 1980). Both measures range from 0 to 1 and a .90 or higher is considered a relatively good fit (Hatcher, 1994). The root mean square error of approximation (RMSEA) is an absolute fit index that measures the amount of misspecification in a hypothesized model, with values less than .08 suggesting adequate fit and less than .05 indicating good model fit (Curran, Bollen, Chen, Paxton, & Kirby, 2003). Weighted root mean square residual (WRMR) is used only with robust weighted least squares estimation, and values under 1.0 indicate adequate fit (Yu & Muthén, 2002).

Following the quantitative analysis, content validity of the NCFAS was assessed using thematic analysis of the case notes. Content validity reflects the extent to which a measure comprehensively assesses all relevant facets of a construct (in this case, family assessment). Because the NCFAS was designed for families served by the child welfare system, it was unclear whether families served by the youth mental health system could be adequately assessed with this measure. Case notes from the intake visits recorded the assessor's observations of family functioning. Content analysis of these case notes was conducted to assess whether the assessor identified relevant issues that had not been captured by the NCFAS instrument.

Two members of the research team read through the case notes affiliated with the 158 NCFAS measures. These readers then met to discuss commonly occurring phrases or ideas (labeled as themes) that were present in the case notes that were not otherwise captured by any of the NCFAS items or domains. These themes were descriptively named. Next, two researchers independently reread and coded the case notes for these themes. Coders held a consensus session to compare each coded text excerpt and reconcile any differences. These themes and their supporting examples are presented in the results section of this article.

## Results

Table 2 displays descriptive statistics regarding each NCFAS item rating. Following convention established by

Reed-Ashcraft et al. (2001), raw scores were converted to range from 1 (*clear strength*) to 6 (*serious problem*). For each item, the full range of response options was endorsed across the sample. Only three items had significant missing data because they did not necessarily apply to families in which there was a single caregiver or single child. These items assessed the relationship between caregivers ( $n = 130$ ), the relationship between siblings ( $n = 138$ ), and the presence of domestic violence between caregivers ( $n = 105$ ).

Internal consistency for each of the five NCFAS subscales was assessed using Cronbach's alpha coefficient. Four of the five subscales demonstrated strong reliability. The 10-item Environment subscale had an alpha of .90, the 4-item Family Interaction subscale was .87, the 7-item Parenting Capacity subscale also showed good reliability at .92, and the 8-item Well-being subscale had an alpha value of .83. The 3-item Safety subscale was problematic for this population, with an alpha of .66. Dropping the domestic violence item, the remaining 2-item Safety subscale (assessing emotional abuse and sexual abuse) had a Cronbach's alpha of .73.

Confirmatory factor analysis was conducted using the factor structure reported by Reed-Ashcraft and others (2001). Factor analysis is a method to identify items that are correlated to each other based on an underlying latent factor. In confirmatory factor analysis, the correlated items are known a priori and the model is built to constrain only these known relationships. The fit between the actual data and the proposed model can be statistically measured.

On all model-fit statistics, this factor structure suggested a poor fit (see Table 3). Because of internal consistency concerns with the original three-item Safety subscale, the revised two-item Safety subscale was used and the model was rerun. Model-fit improved somewhat, although it remained weak. With concerns about the reliability of the Safety subscale and the substantive contribution of the safety items (fewer than 15% of the sample had either of these items rated in the problem continuum), the Safety factor was dropped from the model and confirmatory factor analysis was rerun. Modification suggestions recommended including the overall item assessing environment on the parent capacity factor as well as the item assessing the community environment to load onto the Child Well-Being subscale. These changes resulted in a model that was improved but still only marginal, according to the model-fit measures.

Based on concerns about the fit of the established factor structure with this sample, exploratory factor analysis with promax rotation using MPlus was conducted to identify whether a different factor structure was present for this sample. Unlike confirmatory factor analysis, exploratory factor analysis does not specify a specific structure of covariances for the items to follow or a specific number of underlying constructs. Each item can load onto each factor, with the highest factor loading representing the underlying



**Table 2.** Descriptive Statistics of NCFAS Items (N = 158) Grouped by Original Subscales

Variable	M	Median	Mode	SD	Skew	Skew/SE	Krtosis	Krtosis/SE
Environment	3.02	3	3	1.38	0.317	-1.63	-0.678	-1.76
Personal hygiene	2.87	3	2	1.33	0.437	-2.25	-0.621	-1.61
Housing stability	2.87	3	3	1.47	0.555	-2.85	-0.572	-1.48
Income/employment	3.42	3	3	1.45	0.066	-0.34	-0.903	-2.34
Food and nutrition	2.58	3	3	1.14	0.493	-2.54	0.137	0.35
Financial management	3.28	3	3	1.35	0.053	-0.27	-0.763	-1.97
Housing habitability	2.54	2	1	1.39	0.739	-3.80	-0.283	-0.73
Safety in community	2.78	3	2	1.24	0.617	-3.17	-0.022	-0.06
Learning environment	3.13	3	3	1.26	0.252	-1.30	-0.473	-1.22
Transportation	2.61	2	1	1.47	0.739	-3.80	-0.342	-0.88
Parental capabilities	3.46	3	3	1.33	-0.006	0.03	-0.695	-1.80
Supervision of youth	3.30	3	3	1.45	0.184	-0.95	-0.890	-2.31
Disciplinary practices	3.80	4	5	1.35	-0.244	1.26	-0.751	-1.95
Developmental opportunities	3.34	3	3	1.29	0.082	-0.42	-0.800	-2.08
Caregiver mental health	3.61	4	4	1.28	-0.085	0.44	-0.353	-0.92
Caregiver physical health	3.40	3	3	1.44	0.188	-0.97	-0.775	-2.01
Caregiver substance use	2.26	2	1	1.31	1.003	-5.13	0.675	1.74
Family interactions	3.99	4	5	1.45	-0.231	1.19	-0.968	-2.51
Bonding with children	3.50	3	5	1.52	-0.133	0.69	-1.032	-2.68
Mutual support in family	3.66	4	3	1.30	0.109	-0.56	-0.452	-1.17
Expectations of children	3.65	3	3	1.23	0.080	-0.41	-0.622	-1.61
Sexual abuse	2.58	3	3	1.37	0.794	-4.10	0.240	0.62
Emotional abuse	3.39	3	3	1.41	-0.115	0.59	-0.729	-1.88
Domestic violence	2.60	3	3	1.34	0.742	-3.15	0.441	0.94
Children's behavior	4.94	5	6	1.11	-1.069	5.52	0.817	2.12
Relationship with caregiver	4.42	5	5	1.33	-0.851	4.38	0.213	0.55
Child's mental health	4.71	5	5	1.05	-1.117	5.77	1.422	3.69
Child well-being	4.20	5	5	1.30	-0.608	3.12	-0.503	-1.30
School performance	4.31	5	5	1.28	-0.589	3.01	-0.321	-0.82
Peer relationships	4.25	4	5	1.26	-0.277	1.42	-0.792	-2.04
Motivation to maintain family	3.19	3	3	1.53	0.292	-1.50	-0.949	-2.46
Sibling relationship	4.28	4	5	1.28	-0.446	2.16	-0.341	-0.83

Note: NCFAS = North Carolina Family Assessment Scale.

**Table 3.** Model-Fit Statistics for Confirmatory Factor Analysis Models

	CFI	TLI	RMSEA	WRMR
Reed-Ashcraft model	.84	.93	.15	1.12
Reed-Ashcraft model with two-item Safety subscale	.87	.95	.12	1.09
Reed-Ashcraft model without Safety subscale	.89	.96	.12	1.09
With modifications	.91	.97	.11	0.99

Note: CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; WRMR = weighted root mean square residual.

construct that best represents the item. In exploratory factor analysis, several models with varying numbers of factors are analyzed to find the model that most closely reflects the data. Results for this analysis suggested that a three-factor solution was the best fitting (Root-Mean-Square Radius

[RMSR] = .054). In the four-factor solution, no items loaded strongly on the fourth factor.

Table 4 displays the rotated factor loadings for the three-factor solution. The factors seem to encompass the Overall Environment, Overall Family Interactions, and Overall Child Well-Being. The items in earlier models that loaded onto a fourth factor labeled Parental Capabilities were divided between the Environment and Family Interaction subscales. Specifically, the Environment subscale, including all 10 of the previously established items, and 4 additional items (developmental opportunities, caregiver's health, mental health, and substance abuse) that previously loaded onto Parental Capabilities also showed high loadings on the Environment factor. The Family Interaction subscale included 4 items from the established model with the addition of the other 3 items from the Parental Capabilities factor (supervision, disciplinary practices, and overall parental capabilities) and 3 items (relationship with parents, motivation to maintain family, and overall child well-being)

**Table 4.** Exploratory Factor Analysis Factor Loadings

	Environment	Child Well-Being	Family Interactions
Environment	.63	-.13	.37
Housing stability	.67	-.14	.17
Safety in community	.35	.19	.17
Habitability of housing	.74	-.13	.16
Income/employment	.80	.05	-.06
Financial management	.85	.06	-.05
Food and nutrition	.82	.00	-.01
Personal hygiene	.37	.18	.06
Transportation	.69	.11	-.19
Learning environment	.61	.38	-.07
Parental capabilities	.43	-.13	.60
Supervision of children	.36	.01	.53
Disciplinary practices	.25	.10	.65
Developmental/enrichment opportunities	.50	.01	.30
Caregiver's mental health	.47	-.06	.35
Caregiver's physical health	.41	.08	.21
Caregiver's substance use	.53	-.14	-.02
Family interactions	.09	.11	.76
Bonding with children	.06	-.12	.85
Expectations of children	.09	-.04	.81
Mutual support within the family	.19	.14	.64
Child well-being	.10	.31	.56
School performance	.17	.61	.07
Children's mental health	-.12	.77	.25
Children's behavior	.25	.71	-.27
Relationship with siblings	-.22	.43	.19
Relationship with parents	-.15	.39	.72
Relationship with peers	-.08	.73	-.01
Cooperation/motivation to maintain family	-.19	.31	.61

that were previously classified as part of the Child Well-Being factor. The remaining five items loaded primarily on the Child Well-Being factor. The model does not demonstrate simple structure as several items do not clearly load on a single factor.

### Qualitative Results

To complement the quantitative findings, thematic analysis of qualitative case notes was conducted. Thematic analysis

focuses on finding categories or patterns within the data. Multiple readings of the case notes were completed to identify recurring patterns or ideas that were relevant to understanding family functioning and were not directly measured by the NCFAS items. Two readers independently identified themes, came to an agreement about the themes to include in a codebook, and then independently coded all the case note text to identify each occurrence of the theme. The themes identified by the case note analysis and described below may inform potentially important concepts from which additional items may be developed to ensure content validity of the NCFAS with a child mental health population.

*Knowledge, attitudes, and beliefs about mental health.* Some families in this sample had parenting challenges related to their perception, ideas, and occasional misinformation about their child's mental health problems. For example, "The guardian does not have a clear understanding of the consumer's ADHD behaviors. She is somewhat resistant to change and often says that she just doesn't understand his behaviors." A lack of understanding of the child's mental health problems may lead to parents' setting unrealistic expectations or parents who "admit to being unsure what to hold child accountable for."

Caregivers' beliefs about the emergence of mental health issues were frequently voiced. One mother reported "seeing evil as she held (her son) in her hands and looked at him." Beliefs about mental health issues also seemed to impact parenting capacity. For example, one case note reported, "Consumer's grandparents have difficulty accepting that consumer has diagnosis. They [grandparents] feel that if mom just beat him one good time, he would no longer act out." Despite a diagnosed mental health disorder, parents expressed views that "the consumer can control his actions if he had the desire." These perceptions of behavior as volitional rather than representative of mental health symptomatology are relevant to understanding parents' abilities to effectively manage child behaviors. While the NCFAS currently assesses whether parents have realistic expectations of their children, a parent's knowledge, attitude, and belief system about mental health can distort their understanding of their child's behavior and needs.

*Caregiver mental health issues create parenting challenges.* Considering the biological connection between child and caregiver mental health, the caregivers in this sample often faced their own mental health challenges, which appeared to impact their ability to effectively parent a disordered youth. Several case note examples elucidate this point. For example, one behavior disordered youth reported that his mother "can't enforce rules. She doesn't know how" as she is struggling with her own emotional problems. Another mental health worker noted that "[Mom] may define herself, in part, by her mental health and medical diagnoses," which modeled the secondary gains of attention from

somatic complaints to the youth in the home. Substance abuse issues also impacted parenting. For example, one case note reported that “Mother has a drug case pending. She tends to yell constantly at the children and sends child to his room for time-outs every hour or so. Her own problems preclude effective parenting.”

Although the youth in this sample were receiving services for their mental health needs, several parents identified their own untreated mental health needs. In a family with three special needs youth, “Mother reports she has been diagnosed with bipolar disorder; her mental health continues to go untreated.” Some parents seemed to be accessing mental health services intended for their youth. For example, one caseworker reported that “Jason’s mother has recently been in crisis, experiencing tearfulness and anxiety. Jason’s caseworker has responded to these crisis situations.”

**Stigma.** While families in child welfare services receive in-home services collectively as a family unit, in-home mental health services for youth require recognizing an identified client. In many families where in-home services were being provided, there was evidence of stigmatization of the child with a mental health need. For example, one worker noted, “In the home, consumer seems to be labeled and seems to be treated that way.” At times, this was internalized by the child who “feels like an outcast in the family due to his isolated mental health issues.” Other youth mentioned feeling “alienated by the family” or “isolated by siblings.” One family reported taking several of their children on vacation but not allowing the youth with a mental health need to attend because “she has a reputation for causing a scene and embarrassing them.” Families seemed to struggle with managing the challenging behaviors of these youth without stigmatizing them.

**Acceptability of services.** Treatment acceptability in mental health services research has been conceptualized to include satisfaction, engagement, and perceived relevance (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001). The level to which a family perceives services to be acceptable to them may help understand treatment effectiveness. Among this sample, youth and their caregivers often expressed clear preferences for the types of services they were or were not interested in receiving as well as their impressions of what services would or would not be effective. A system of care philosophy encourages families to have a voice in service selection. This notion of a consumer-directed services perspective was a prominent theme among families.

Both parents and youth expressed doubt about the effectiveness of services being provided.

Mother is not happy with the level of mental health services her son receives and is in the process of attempting to link him with other services. She

believes that the current medication regimen and therapy is not beneficial to him and not addressing the real problem.

Another case note stated, “Client nor her father know if either therapy or medication are beneficial at this point.”

For some youth, resistance to any type of intervention was apparent. “Mother recognizes that client is in need of services, but states that client will often refuse to engage with them because he does not feel he needs this level of support.” One youth stated, “I don’t want anyone to help me.”

In considering the validity of the NCFAS as a comprehensive family assessment for families involved in the child mental health system, the totality of domains that impact family functioning must be covered. By reviewing notes from child mental health workers during initial in-home visits, there seem to be constructs that are not directly assessed in the current NCFAS instrument. Issues like the presence of stigma within a family, receptivity to services, beliefs about mental health, and multigenerational mental health needs are relevant to understanding family dynamics. Like the other items in the NCFAS, these areas are targets for intervention to promote youth stability in the home. Improvements in these domains would enhance the family environment for the youth. Because of their connection to the underlying construct of family functioning, these themes may be candidates for additional items in family assessments within child mental health.

## Discussion and Applications to Practice

The NCFAS measure was designed for use with high-risk families involved with, or about to become involved with, child welfare services. Although youth served by child welfare and child mental health are often considered to be quite similar (Stein, Evans, Mazumdar, & Rae-Grant, 1996), and the children involved with child welfare services have high rates of behavior problems (Burns et al., 2004), the findings from this study suggest that the NCFAS measure does not function equivalently in assessing families of youth involved with mental health services. In this section, several possible explanations for the differential reliability and validity of the NCFAS within a child mental health service delivery system will be discussed.

The low reliability of the Safety subscale may suggest a mismatch for this primarily non-child welfare population. While safety, permanence, and well-being are key focal points of the child welfare system, results from this measurement study imply that issues of basic child safety are not as central for families involved in the youth mental health system. There are two ways to view these findings. First, it is reasonable to assume that issues of abuse or family violence are not as prevalent in families who come



to the attention of child mental health services, compared to child-protective service populations. Alternately, the low reliability in measuring safety may reflect an assessment bias of the in-home mental health workers who complete the NCFAS. These workers may not feel equipped to assess safety risk or may view their role as predominantly focused on the child's mental health needs. Considering the slightly older average age of youth in this sample, compared to many in-home child welfare samples, another plausible explanation may be that safety issues for families with adolescents are different from the safety concerns in families with younger children.

The original NCFAS subscales of Environment, Parental Capabilities, Child Well-Being, and Family Interactions are not as clearly delineated for families in the child mental health system compared to child welfare families. Specifically, parental capabilities items no longer held together as a separate factor in this sample. Items related to parent capacity were captured by the assessment of the environment or family interactions.

The disintegration of the Parental Capability subscale may be tied to a global difference between how family is viewed in the child welfare system compared to the child mental health system. Even in a family-based service like the IHIP-C program described in this study, child mental health services are triggered by the needs of an identified client, that is, the youth exhibiting symptomatology. Service eligibility and billing structures of child mental health service delivery focus on the child's needs (albeit often in the context of a family). For example, reimbursement for the state-supported Psychiatric Rehabilitation Program (PRP) in this study is provided only for services to the child. Case management or other services to the caregiver or other family members are not billable. As a result, the functioning of the child is central in determining services within the child mental health system. In contrast, service delivery within child welfare is more centrally tied to the family's level of need and functioning rather than a single identified child. The structural barriers that mandate a child focus within the child mental health system may create a misfit for instruments that assess family functioning. A child mental health worker may be reticent to investigate or address caregiver needs that cannot be reimbursed. As a case planning tool, the NCFAS may be most appropriately used in family-based programs where every family member receives treatment as a "system," and not programs that primarily target an identified individual.

In addition to the variation found in the NCFAS factor structure, the qualitative comments by child mental health workers identified additional constructs that are relevant for comprehensively assessing families of youth with mental health needs. Issues related to stigma, caregiver beliefs about mental illness, and multigenerational mental health

needs were all themes uncovered in the case notes that would seem to play a critical role in understanding family functioning for youth with mental health needs. If these were not captured in the NCFAS items, then content validity may not be supported, which could result in unmeasured variance and contribute to the results found in this study.

In addition, mental health services for youth should be sensitive to family and consumer perspectives. To maximize family engagement in treatment, services should be attuned to consumer preferences and values. While systems of care principles emphasize least restrictive services like the IHIP-C, providers should assess family views on what services are needed and how services can be individually customized.

The NCFAS is completed by an intake worker after an initial visit with the family in their home. Training, implementation, and monitoring of NCFAS completion are not consistent across workers. Some intake workers received direct oversight from their supervisor in this process while other workers completed this assessment more independently. Levels of education and experience of the intake workers also varied, which may impact instrument ratings.

Although the sample size for the factor analysis exceeded the recommendations specified by Gorsuch (1983) and Kline (1979), some of the model fit statistics may have been influenced by sample size. Specifically, the noncentral chi-square distribution used in the RMSEA fit index is not well approximated in sample sizes under 200, which may have skewed this measure of model fit (Curran, Bollen, Paxton, Kirby, & Chen, 2002). Additional measurement studies should be conducted to confirm the factor structure identified in the exploratory factor analysis here.

Case notes written by intake workers from which the qualitative themes were derived may have reflected worker bias or values. Some case notes included worker interpretations rather than just direct observations or quotes from family members. As a result, workers may have misinterpreted family needs or relevant issues. Involving the workers in the thematic analysis or soliciting their feedback following the identification of themes would have strengthened the rigor of this methodology. This analysis did not include any participatory involvement or member checking to further validate the findings.

Understanding family functioning is relevant to improving the effectiveness of social work interventions with youth. The increased interest in in-home mental health services for youth who prevent out-of-home placement underscores the importance of the family's role in youth treatment. Social work practitioners need to be well-versed in conducting comprehensive measures of family functioning, and instruments like the NCFAS may be helpful tools for this task. In addition, to accurately assess comprehensive constructs like family functioning, programs that utilize standardized

measures should insure that workers are adequately trained in their administration and scoring to insure that the reliability and validity of the instruments are maintained.

Public systems for youth have been accused of operating as vertical silos, which fragments their ability to create effective changes for clients (Koyangi, 2003; New Freedom Commission on Mental Health, 2003). By focusing primarily on the identified client, a child mental health provider may view parenting capabilities as part of the child's environment but not as a leverage point for intervention. Furthermore, the lack of system-level linkages and integrated models of care limit a worker's efforts to deliver or access services for other family members. For example, in this study, workers identified unmet mental health needs among caregivers; however, reimbursement mechanisms limited their ability to address caregiver needs, and the likelihood of improvement in a child's mental health is constrained. Greater flexibility and resource sharing across systems and funding mechanisms may improve the quality and effectiveness of services delivered.

Future research should further explore the psychometric properties of the NCFAS measure in non-child welfare populations. The NCFAS has been used in non-child welfare settings; however, no measurement studies related to its application outside of family preservation services have been conducted. In addition to confirming the factor structure and internal consistency of the NCFAS subscales, predictive validity to assess how well changes in NCFAS scores correlate with other outcome measures would be an important contribution to the field.

Although the NCFAS was developed to assess family functioning for families facing abuse and neglect investigations from child welfare services, this study suggests that many NCFAS items remain relevant to families served by the child mental health system. Progress in family functioning and family capacity to support a youth with mental health needs are key goals for youth in-home mental health services. However, the child mental health system and its funding mechanisms may create barriers to both assessing and addressing family functioning, as services must be funneled only to the identified client rather than caregivers or the family as a whole. While the NCFAS provides a good platform from which to consider family functioning, greater flexibility in child mental health service delivery is needed to accommodate a family assessment measure. In addition, systematic training for assessors and refinement to the NCFAS measure (including the addition of several items specific to mental health) are recommended in using the NCFAS within the child mental health system.

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