

Huscroft-D'Angelo, J., Duppong Hurley, K., Lambert, M., & Trout, A. (2018). Investigating the factor structure and validity of the Family Empowerment Scale for parents of children with emotional disturbance in middle school. *Children and Youth Services Review*, 86, 14-20. doi.org/10.1016/j.chilyouth.2018.01.013

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Investigating the Factor Structure and Validity of the Family Empowerment Scale for Parents of Children with Emotional Disturbance in Middle School

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Compliance with Ethical Standards:

This research was supported by the U.S. Department of Education through Grant #R324A130180 to the University of Nebraska – Lincoln. The opinions expressed are those of the authors and do not necessarily represent the views of the Institute of Education Sciences or the U.S. Department of Education.

Conflict of Interest:

Jacqueline Huscroft-D'Angelo declares that she has no conflict of interest. Matthew Lambert declares that he has no conflict of interest. Kristin Hurley declares that she has no conflict of interest. Alexandra Trout declares that she has no conflict of interest.

## Highlights

Results indicated that the hypothesized three-factor model fit the data adequately.

*FES* scores were reliable based on coefficient alpha and omega, and evidence of convergent validity with measures of parent activation, caregiver strain, and child behavior were moderate to strong.

The results support the use of the *FES* with parents of middle school youth who have ED and further validate the three-factor structure identified in the initial measure development.

Practical and clinical implications of these findings include support for the use of the *FES* with this particular group of parents.

## Abstract

Parent empowerment involves the ability of caregivers to meet the needs of their family while maintaining feelings of control and is particularly important for families of children at-risk. It is necessary to establish reliable and valid tools to measure parent empowerment. The purpose of this study was to examine the internal factor structure, score reliability, and convergent validity of the *FES* scores with caregivers of middle school youth who had an Individualized Education Plan for Emotional Disturbance (ED) or Other Health Impairment (OHI) due to emotional or behavioral needs. A confirmatory factor analysis (CFA) was used to examine the internal structure the *FES*. Score reliability was examined by computing coefficient alpha (Cronbach, 1951) for each subscale score and computing Coefficient omega and coefficient omega hierarchical for good-fitting factor models and bifactor models. Convergent validity was examined by generating composite scores for each subscale, followed by computing Pearson correlations between *FES* subscale scores and scores from the *PAM*, *CGSQ* and the *SDQ*. Results indicated that the hypothesized three-factor model fit the data adequately. *FES* scores were reliable based on coefficient alpha and omega, and evidence of convergent validity with measures of parent activation, caregiver strain, and child behavior were moderate to strong. The results support the use of the *FES* with parents of middle school youth who have ED and further validate the three factor structure identified in the initial measure development. Practical and clinical implications of these findings include support for the use of the *FES* with this particular group of parents.

**KEYWORDS:** Empowerment, Caregiver, Psychometrics, Emotional Disturbance, Other Health Impairment, Middle School

**Abstract**

Parent empowerment involves the ability of caregivers to meet the needs of their family while maintaining feelings of control and is particularly important for families of children at-risk. It is necessary to establish reliable and valid tools to measure parent empowerment. The purpose of this study was to examine the internal factor structure, score reliability, and convergent validity of the *FES* scores with caregivers of middle school youth who had an Individualized Education Plan for Emotional Disturbance (ED) or Other Health Impairment (OHI) due to emotional or behavioral needs. A confirmatory factor analysis (CFA) was used to examine the internal structure the *FES*. Score reliability was examined by computing coefficient alpha (Cronbach, 1951) for each subscale score and computing Coefficient omega and coefficient omega hierarchical for good-fitting factor models and bifactor models. Convergent validity was examined by generating composite scores for each subscale, followed by computing Pearson correlations between *FES* subscale scores and scores from the *PAM*, *CGSQ* and the *SDQ*. Results indicated that the hypothesized three-factor model fit the data adequately. *FES* scores were reliable based on coefficient alpha and omega, and evidence of convergent validity with measures of parent activation, caregiver strain, and child behavior were moderate to strong. The results support the use of the *FES* with parents of middle school youth who have ED and further validate the three factor structure identified in the initial measure development. Practical and clinical implications of these findings include support for the use of the *FES* with this particular group of parents.

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### Investigating the Factor Structure and Validity of the Family Empowerment Scale for Parents of Children with Emotional Disturbance in Middle School

“Empowerment is the ability to seek control over one’s life by taking action to get what one wants and needs” (Murray, Handyslide, Straka, & Arton-Titus, 2013, p. 146). This involves increasing one’s knowledge, skills, and boosting motivation to achieve a desirable outcome (Turnball, Turnball, Erwin, & Soodak, 2006). It also implies a process that enables individuals to gain control over their lives by having influence on their interpersonal and social environments (Hasenfeld, 1987; Parsons, 1991; Resendez, Quist, & Matshazi, 2000; Zimmerman & Rappaport, 1988). This occurs through a continuum of experiences that afford the individual an opportunity to apply his or her own proficiencies to acquire new information and skills (Turnball et al., 2006). The higher the level of empowerment the more likely the individual can facilitate positive changes to improve their quality of life or promote a life-style change that is necessary for achieving successful outcomes (Curtis & Singh, 1996).

Parental empowerment involves the ability of the caregiver to meet the needs of their family while maintaining feelings of control (Murray et al., 2013) and is directly aligned to the family empowerment status (Kazdin & Wassell, 2000; Author; in press; Author, under review; McKay, Harrison, Gonzales, Kim, & Quintana, 2002; Strazdins & Broom, 2004). Empowerment implies a sense of confidence parents demonstrate in managing their children and actions they take to meet the needs of their children (Vuorenmaa, Perala, Halme, Kaunonen, & Astedt-Kurki, 2015). High levels of parental empowerment are associated with resilience, confidence in decision making and taking positive action to help meet family needs (Zhang & Bennett, 2003; Zimmerman, 2000); whereas, low parental empowerment conveys a sense of helplessness, hopelessness, and dependency (Zimmerman, 2000). At the family level, empowerment has been

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defined as a family invested with authority (Morrow & Malin, 2004). It is the process of a family acquiring the skills, resources, authority, opportunity, and motivation to meet the needs of their family. Family empowerment is in essence an action that is associated with high self-efficacy (Green, Walker, Hoover-Dempsey, & Sandler, 2007; Ice & Hoover-Dempsey, 2011).

The importance of empowerment in parents who have a child who is receiving schools services for emotional or behavioral needs is strongly emphasized in the professional literature. It is widely recognized that although families at-risk are frequently the recipients of school-based, community, health or mental health services, they typically do not advocate for themselves (Collins & Collins, 1990; Dean, 1993; Olin et al., 2010; Singh, 1995; Vuorenmaa et al., 2015). Parents who demonstrate high levels empowerment have more consistent treatment attendance, improved parent-child relationships, decreased stress and increased confidence (Chacko et al., 2009; Kazdin & Wassell, 2000; Ruffolo, Kuhn, & Evans, 2006). Parental empowerment has also been associated with improved child behavioral and academic outcomes (Chacko et al., 2009; Ruffolo et al., 2006). Opposite to this are those parents who feel disempowered; they may develop negative attitudes towards mental health services, underutilize services, and may be hesitant to fully participate in the treatment of their child (Collins & Collins, 1990; Dean, 1993; Olin et al., 2010; Owens et al., 2002; Pescosolido et al., 2008; Scheel & Rieckman, 1998; Singh, 1995).

Families of children with emotional and behavioral challenges have several factors that likely contribute to empowerment levels. Studies indicate that children with identified emotional and behavioral needs are more likely to have characteristics such as lower socio-economic status, higher percentages of single-parent homes, or high levels of parental risk behavior such as substance abuse, court involvement, abuse, neglect, lower levels of positive parenting, and

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decreased family stability (Curry, 1991; Frensch & Cameron, 2002; Griffith et al., 2009; Mayberry & Heflinger, 2012; Wells & Whittington, 1993). These risks coupled with the challenges of caring for or managing a child with emotional and behavioral challenges contribute to poorer family functioning, and increased parental stress (Brannan & Heflinger, 2001; Taylor-Richardson, Heflinger, & Brown, 2006; Vaughan, Feinn, Bernard, Brereton, & Kaufmann, 2013). Moreover, parents experience decreased empowerment, self-efficacy, and inability to advocate for their child (Early, Gregoire, & McDonald, 2002; Frensch & Cameron, 2002; Olin et al., 2010; Rodriguez-Jenkins & Marcenko, 2014). To address these needs, children with IEPs for behavioral needs often receive a variety of services and supports that require engagement from parents (Kutash, Duchnowski, Green, & Ferron, 2013). However, evidence suggests that parents of youth with emotional and behavioral challenges are some of the least engaged parents as they often underutilize services, and display negative attitudes towards services and support systems (Collins & Collins, 1990; Dean, 1993; Olin et al., 2010; Owens et al., 2002; Pescosolido et al., 2008; Singh, 1995).

Professionals working with parents who have low levels of empowerment can be particularly challenging. For example, engaging families in services proves to be difficult with low recruitment and retention rates for interventions that include parental participation (Redmond et al., 2002; Spoth & Redmond, 2000; Spoth et al., 2007). This requires family support professionals to break through barriers such as mistrust with service providers, uneasiness with interactions and relationships with professionals, and unresponsiveness to professional supports (Children's Bureau, 2016). Furthermore, professionals are often tasked with implementing tailored services and often need to expand service and support options to keep families engaged such as collaboration with education and behavioral health systems



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(Children's Bureau, 2016). It has also meant shifting practice to include an emphasis on family voice, strength-based approaches, and including additional types of support such as parent peer-led models (Cavalieri, Olin, Kim, Hoagwood, & Burns, 2011; Children's Bureau, 2016).

Measuring family empowerment is also difficult, as few measures have been deemed reliable and valid with caregiver populations of children receiving educational supports due to emotional and behavioral needs. The *Family Empowerment Scale (FES)* (Koren, DeChillo, & Friesen, 1992; See Table 1 for example items) was developed to measure caregiver perceptions regarding their roles and responsibilities within their family, local service systems, and the ability to advocate on behalf of their child (Koren et al., 1992). Koren and colleagues (1992) reported evidence of the scale's internal structure and score reliability with a sample of caregivers who had a child under the age of 21 with emotional and behavioral disorders. This initial exploratory factor analysis suggested that items formed three distinct factors (Family, Services, and Community) and demonstrated adequate internal consistency with coefficient alpha ranging from .87 to .88. Two studies have supported the original three-factor model; one with 100 parents who were part of a multilevel crisis intervention project for children and adolescents with emotional disturbances (VanNess-Knolls & Tighe, 1996) and another with a sample of 120 caregivers who had an adolescent recently return home from residential care (Author, under review). One study conducted by Singh and colleagues (1995) yielded a four-factor solution representing domains of advocacy, knowledge, competence, and self-efficacy in a sample of 228 parents of children who had a mean age of 13.3 (SD = 4.5) years and with serious emotional disturbance or attention deficit hyperactivity disorder.

The psychometric properties of the *FES* have been studied with various populations at-risk for emotional and behavioral needs, although only one within the last decade and none of

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these were focused on a sample of youth with an IEP for emotional or behavioral difficulties. For example, Curtis and Singh (1996) examined the convergent validity of the *FES* and the *Family Involvement Scale-Family* (FIS-F; Curtis & Singh, 1996) reporting that all four *FES* subscales and three *FIS* subscales (Treatment, Parent-Professional Partnership, Information/Courtesy) were highly intercorrelated. Curtis and Singh (1996) also conveyed that two *FES* subscales (Knowledge and Self-Efficacy) were significantly correlated with the Treatment Subscale of the *FIS*, one *FES* subscale (Competence) was correlated with the Treatment subscale of the *FIS*, but was not statistically significant, and the *FES* Systems Advocacy subscale was not correlated with any of the *FIS* subscales. Akey, Marquis, and Ross (2000) reported a correlation of 0.74 between *FES* scores and scores from the *Psychological Empowerment Scale*. Author and colleagues (under review) reported the *FES* subscale scores were reliable based on coefficient alpha and omega with alpha values ranging from .87-.94. Evidence of convergent validity with the *Caregiver Self-Efficacy Scale* (CSES; Boothroyd, 1997) was moderate to strong with correlations ranging between .26-.71. The *Family* subscale of the *FES* was most strongly correlated (.71) to the *Behavior Management* subscale of the *CSES* and one non-significant relationship between the *FES Community* subscale and the *CSES Provider Issues* subscale (.13) was also reported.

Although *FES* scores have been found, over a number of studies, to be reliable and valid for populations at-risk these studies have not been revisited for nearly two decades. Moreover, the internal structure, score reliability and validity of the *FES* scores has not been evaluated among caregivers of middle school youth identified with an Individualized Education Plan (IEP) for behavior related challenges. The purpose of this study was to examine the internal structure, score reliability, and validity evidence for the *FES* subscale and total scores for caregivers of middle school youth with an IEP related to emotional and behavioral challenges.

## **Method**

### **Participants**

A total of 212 caregivers were included in this study. The majority of caregivers were female (86.3%), Caucasian (74.3%), and biological caregivers (79.7%). Just under one-fourth reported having a college degree (23.6%), 46.7% had some college or held an associate degree, 25.5% held a high school diploma or GED, and 4.2% did not graduate high school. Almost half of the caregivers (43.4%) reported incomes of less than \$30,000, 19.8% reported incomes between \$30,001-\$50,000, and 36.8% reported incomes of >\$50,000.

### **Procedures**

All procedures were approved by the university's Internal Review Board prior to the recruitment process. Participants were recruited from middle schools in urban and suburban areas from public and private alternative schools as part of a larger study for a parent-to-parent support intervention. School staff identified eligible middle school students based on having an IEP for a primary verification of ED or OHI due to emotional or behavioral disorders as the primary identified need. This was necessary as some schools verified students under OHI for emotional and behavioral reasons instead of using the ED verification. Once they identified eligible students, the school personnel contacted and visited with parents via email, phone, or in person regarding interest in a research study at a local university studying a phone intervention providing parent-to-parent support. If the parents expressed interest, their name and contact information was provided to university research staff. Next, university research staff contacted families with a full informed consent protocol that included additional eligibility criteria, such as the caregiver speaking fluent English. If the family consented, then they were asked to complete intake data on their family and child. This consisted of a battery of measures completed via

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phone interviews using computer-assisted telephone interview methodology. All families were given a stipend for completed the intake measures. Only families that completed the intake data were then assigned to a treatment condition. This study includes all caregivers that completed intake data, regardless of which treatment condition they were eventually assigned to for the larger study.

### **Measures**

*The Family Empowerment Scale (FES; Koren et al., 1992)* was used to examine caregiver empowerment. The *FES* is a 34-item instrument designed to measure the empowerment of a parent or caregiver of an emotionally disturbed family member. The items are rated on a 5-point scale (1= not true at all to 5= very true) with higher scores representing more empowerment. The *FES* scoring procedure is based on a simple, unweighted summation of the items, resulting in sum scores in for three subscales. The *FES* has three subscales: family, service system, and community. *FES* scores have demonstrated adequate psychometric properties with internal consistency ranging from .87 to .88 across the three subscales and test-retest reliability correlations ranging from .77 to .85.

The *Caregiver Strain Questionnaire-Short Form (CGSQ-SF7; Brannan, Athay, & Andrade, 2012)* measures objective strain (i.e., observable negative occurrences that result from the child's disorder) and subjective internalized strain (i.e., caregivers' feelings about those occurrences) in caregivers of youth with emotional and behavioral problems. Participants respond on a 5-point scale from 1 (*not at all*) to 5 (*very much*) to indicate how often each item was a problem for them during the past month. Subscale scores can range from 1 to 5, with higher scores indicating higher levels of caregiver strain. In the current sample, coefficient alpha was 0.87 the total strain scores.

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An adapted version of The *Parent Patient Activation Measure – Mental Health (P-PAM-MH)* was used with permission from the developer and Insignia Health, from the existing *PAM-MH* (Green et al., 2010) and *P-PAM* (Pennarola et al., 2012). The *P-PAM-MH* was adapted to be applicable to caregivers of youth with mental health disorders and has adequate psychometric properties (Author, under review). The *P-PAM-MH* contains 13 items in which caregivers indicate their level of agreement from 1 (*strongly disagree*) to 4 (*strongly agree*). Raw scores were calculated by adding responses for the 13 items and were converted into activation scores. Activation scores range from 0.0 to 100.0, with higher scores indicating greater activation.

The *Strengths and Difficulties Questionnaire (SDQ)*; Goodman, 2001) assesses behavioral problems and competencies of youth. There are 25 items, which are rated on a 3-point scale (0=*not true*, 1=*somewhat true*, 2=*certainly true*) and represent five domain behavior problem scores: Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial Functioning. For this study, only the total score was examined, which is a composite of the five domains. The *SDQ* has extensive documentation of adequate reliability and validity (e.g., Goodman, 2001; Mellor, 2004).

### **Data Analysis**

**Internal structure.** We used confirmatory factor analysis (CFA) to examine the internal structure of the *FES* scores by fitting four different CFA models: (1) single-factor model, (2) three-factor model, (3) three-factor *bifactor* model, and (4) four-factor model. The single factor model evaluated the unidimensionality of *FES* scores and was used as a basis for model comparison rather than a substantive alternative model. The three factor model evaluated multidimensionality of *FES* scores based on the three subscales hypothesized by the assessment developers (Koren et al., 1992). The three factor *bifactor* model further evaluated the three factor

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solution by partitioning item response variance into common sources. The bifactor model was primarily used to explore the tenability of the three separate subscale scores. The four factor model also evaluated multidimensionality of the *FES* scores, but was based on a solution reported in a later study by Singh et al. (1995).

Goodness of fit was assessed using the chi-square statistic and alternative fit indexes (AFIs) such as the comparative fit index (CFI) and the root mean error of approximation (RMSEA). A *close* fitting model would have a non-significant chi-square statistic, a CFI > 0.95, and a RMSEA < 0.06 (Hu & Bentler, 1999). An *acceptable* model would have a non-significant chi-square statistic, CFI > 0.90 and RMSEA < 0.08. AFIs are independent of sample size and typically considered more helpful when evaluating goodness-of-fit compared to chi-square statistics which tend to be overly sensitive to sample size (Hu & Bentler, 1999). Chi-square different tests ( $\Delta\chi^2$ ) were used to compare the goodness-of-fit across nested models. Because the *FES* items were rated on a 5-point response scale, we used weighted least squares with mean and variance adjustments (WLSMV) to estimate the CFA models. Missing data were omitted using a pairwise-present approach, which is the default in Mplus when using the WLSMV estimation method. All analyses were conducted using Mplus v7.11 software (Muthén & Muthén, 1998-2014).

**Reliability.** We examined score reliability using two methods. First, we computed coefficient alpha (Cronbach, 1951) for each subscale score. Coefficient alpha (or Cronbach's alpha) is the proportion of true score variance to total score variance; values closer to 1 indicate higher reliability. Based on the seminal work of Nunnally (1978), coefficient alpha values > 0.80 are acceptable for research and applied settings. We also estimated score reliability based on the factor analysis models. Coefficient omega ( $\omega$ ; McDonald, 1978) and coefficient omega

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hierarchical ( $\omega_h$ ; McDonald, 1999) were computed for good-fitting factor models and bifactor models, respectively. Coefficient omega measures the precision with which the *FES* composite scores represent the underlying level of a caregiver's empowerment (i.e., the proportion of the composite score variance that can be attributed to the target construct [true score]). For the bifactor model, we calculated omega hierarchical, which differs from coefficient omega in that the former accounts for the general factor variance. That is, omega hierarchical only includes item variance that is *unique* to each subscale score.

**Convergent validity.** Pearson correlations were computed between *FES* subscale scores and total scores from the *PAM*, *CGSQ* and the *SDQ*. The magnitudes of correlation coefficients were judged in comparison to the general guidelines proposed by Cohen (1988) where coefficients  $< 0.30$  are considered small,  $0.30 - 0.50$  are considered moderate, and  $> 0.50$  are considered large. Because the constructs of empowerment, activation, strain, and managing challenging behaviors overlap (Alegria et al., 2008; Brannan & Heflinger, 2001; Authors, in press; Authors, under review; Koegel, Brookman, & Koegel, 2003; Morrow & Malin, 2004; Olin et al, 2010), we anticipated moderate to large correlations between *FES* scores and *PAM*, *CGSQ* and *SDQ* scores.

## Results

### Internal Structure

Table 2 lists model fit statistics including chi-square ( $\chi^2$ ), comparative fit index (CFI) and root mean squared error of approximation (RMSEA) for each of the confirmatory factor analysis models. The chi-square difference tests (between CFA models) are also reported in Table 1. The degrees of freedom for chi-square differences tests were equal to the difference in *dfs* between the two models being compared.

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**Single factor model.** The unidimensional model did not fit the data acceptably as indicated by the CFI (0.706) and RMSEA index (0.128); therefore, we can conclude that the *FES* scores are not unidimensional. However, nearly all of the factor loadings were large ( $> 0.50$ ) which seemed to indicate a fairly strong commonality between all of the items. The source of misfit in the single factor model was the inter-correlated residual item variances that arise due to multidimensionality (i.e., subscales). Omega reliability estimates were not computed for this model given poor fit to the data.

**Three-factor model.** The three-factor model was based on the hypothesized model provided by the assessment developers (Koren et al., 1992). The three factors represent empowerment related to: (1) family, (2) service systems, and (3) community/political. This model fit the data acceptably (CFI  $> 0.90$ , RMSEA  $< 0.08$ ) and this model represented a statistical improvement over the single-factor model ( $\Delta\chi^2 = 197.37, p < 0.001$ ). All of the factor loadings were large ( $> 0.50$ ) which indicated that each item was substantially related to the underlying factors. The family factor was highly correlated with the service systems factor ( $r = 0.73$ ) and moderately correlated with the community factor ( $r = 0.41$ ). The systems services and community factors were also moderately correlated ( $r = 0.36$ ). The substantial correlation between the family and service systems factors may indicate a common source of shared variance (i.e., poor discriminant validity).

Coefficient omega reliability estimates ( $\omega$ ) for the subscale scores were obtained from the CFA model parameters (McDonald, 1978). Coefficient omega represents the precision with which a *FES* composite score represents the underlying level of a caregiver's empowerment (i.e., the proportion of the sum score variance that can be attributed to the target construct [true score]). Omega was 0.94 for the family factor, 0.93 for the service systems factor, and 0.93 for



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the community factor indicating that all three subscales were reliable measures of the latent constructs.

**Three-factor bifactor model.** To further explore the tenability of the three-factor solution, we fit a bifactor version of the three-factor model to partition item response variance into common sources (Reise, 2012). The bifactor model can complement a correlated factors model "by evaluating whether item response variance is due to a general construct versus group factors" (Brouwer, Meijer, & Zevalkink, 2013, p. 138). In essence, the bifactor model was used to evaluate the degree to which the subscale scores were *unique*, reliable factors.

The results of this model revealed that *FES* item responses appear to follow a bifactor structure as indicated by the close fit to the data (CFI = 0.951, RMSEA = 0.058) and the significant improvement in fit over the three-factor correlated factors model ( $\Delta\chi^2 = 125.40, p < 0.001$ ). Because the item response variance was partitioned into common sources, we calculated omega hierarchical, which only includes item variance that is *unique* to each subscale score. Omega hierarchical was 0.23 for the family factor, 0.32 for the service systems factor, and 0.74 for the community factor. Therefore, 23% of the variance of the family composite score was attributable to the family latent factor; 32% of the service systems composite score was attributable to the service systems latent variable; and 74% of the variance of the community composite score was attributable to the community latent variable. The remaining items variances were attributable to the general factor or represent error variances.

**Four-factor model.** The four-factor model was based on the exploratory factor analysis reported by Singh et al. (1995) where the factors represent a caregiver's: (1) advocacy, (2) knowledge, (3) competence, and (4) self-efficacy. This model did not fit the data acceptably as indicated by the low CFI (0.804) and high RMSEA values (0.105). Correlations between the

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factors ranged from 0.34 to 0.94 where knowledge and self-efficacy were the most highly correlated factors. Reliability estimates were not computed for this model given poor fit to the data.

### **Reliability**

Coefficient alpha estimates and coefficient omega estimates are listed in Table 3 for each subscale score. Coefficient alpha estimates were adequate ( $> 0.80$ ; Nunnally, 1978) for each of the subscale scores. Coefficient omega also indicated that reliability was sufficient ( $>0.90$ ), but omega hierarchical estimates ranged from low to acceptably high (0.23 – 0.74) for the subscales. Lower omega hierarchical estimates indicate that, after controlling for the general factor variance, the reliable variance of the family and service systems subscale scores was largely due the common (shared) variance; however, the community subscale score was still reliable after controlling for the general factor indicating that this score is both unique and reliable. Omega hierarchical was 0.76 for the general factor (i.e., total score) indicating that 76% of the composite score variance can be attributed to a single, general (common) factor.

### **Convergent Validity**

Evidence of convergent relationships between the *FES* scores and scores from the *PAM*, *CQSG* and *SDQ* are presented in Table 4. Correlations between *FES* subscale scores and the other scores ranged from -0.35 to 0.60. All three *FES* subscale scores were significantly correlated with *PAM* scores ( $r_{\text{Family}} = 0.60$ ;  $r_{\text{Service Systems}} = 0.57$ ;  $r_{\text{Community}} = 0.26$ ), and the *Family Empowerment FES* subscale score was significantly correlated with *CGSQ* ( $r = -0.28$ ) and *SDQ* scores ( $r = -0.35$ ). The *Service Systems Empowerment* and *Community Empowerment* subscale scores were not significantly related to the *CGSQ* and *SDQ* scores.

## **Discussion**

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The purpose of this study was to assess the internal structure, score reliability, and convergent validity of the *FES* scores when used with caregivers of middle school aged youth with an IEP for primarily emotional and behavior related challenges. Our hypothesis that the three-factor structure of the *FES* would be replicated for this sample of families of middle school students receiving special education supports for emotional and behavioral needs was supported. However, the three-factor bi-factor model had the strongest empirical support. This suggests that there is a fairly strong “general” family empowerment factor that is shared especially between the *Family Empowerment* and *Service Systems Empowerment* subscales. The *Community Empowerment* subscale has the most unique variance of the three subscales. Subscales scores were reliable based on coefficients alpha and omega indicating that the items for each subscale were similar. These findings suggest that the use of the three subscales is supported, but also indicates that the *Community Empowerment* subscale is measuring slightly different aspects of empowerment than the family or service system subscales.

Overall, the convergent validity evidence for the *FES* subscale scores was strong. First, the *FES* subscales were all positively correlated with the *P-PAM-MH* activation score. This was expected as parental activation in their child’s mental health overlaps with the construct of family empowerment. The *P-PAM-MH* is more focused on how the parent communicates, takes responsibility, and works with medical providers regarding mental health services whereas the *FES* captures additional domains. Parents serve critical roles in supporting their child’s well-being which includes advocating, communicating being a consumer, and implementing strategies to improve their child’s well-being (Bode et al., 2016; US Department of Health and Human Services, US Department of Education, and US Department of Justice, 2001) all of which require

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some level of empowerment (Bode et al., 2016). Thus, it is strong support of external validity that the *FES* subscales were all positively correlated with the *P-PAM-MH*.

The *Family* subscale of the *FES* was significantly and inversely correlated with both the *CGSQ* and *SDQ*. This means that families that were more empowered had lower scores of caregiver strain and less severe child emotional and behavioral problems. This was expected, as families with greater sense of empowerment in theory should be able to more effectively advocate for services for their child, thus reducing caregiver strain and improving mental health functioning for the child (Bode et al., 2016; Chacko et al., 2009; Kazdin & Wassell, 2000; Ruffolo et al., 2006). For example, elevated levels of strain and stress can prevent parents from practicing skills that would build empowerment and promote meaningful engagement in their child's services and supports (Bode et al., 2016; Olin et al., 2010; Vig & Kaminer, 2003). Specifically, within families, empowerment encourages parents to reach desired outcomes for their family and children and has been associated with high self-efficacy (Green et al., 2007; Ice & Hoover-Dempsey, 2011; Zhang & Bennett, 2003).

The *Service Systems* and *Community Involvement* subscales were not significantly correlated with *CGSQ* or *SDQ* scores, which is intriguing. The *Service Systems* scale focuses on empowerment related to their child's mental health services. One would have expected an inverse correlation for the *Service Systems Empowerment* in regard to both the *CGSQ* and the *SDQ*. One possibility for this finding is that perhaps some parents did not believe that additional mental health services were needed for their child, thus creating the scenario where family empowerment would be strongly correlated, but services empowerment was not. This logic could also be extended to the *Community Involvement* subscale, as it focuses on advocating in the community for children, contacting state legislatures, and behaviors that likely are not on the

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radar of most parents. Knowing the importance of practice in developing strong empowerment (Olin et al., 2010; Vig & Kaminer, 2003), it is likely that if a parent is managing high rates of challenging behavior and managing high levels of strain, the practice opportunities for the kinds of skills involved in the *Community Involvement* subscale would be minimal if any at all. In other words, the *Service Systems* and *Community Involvement* subscales may not have been constructs relevant to many parents, which could explain the low correlations with other measures. Given these findings, researchers and practitioners using the *FES* need to cognizant of the potential limitations of the *FES* in regard to applicability of the subscales to their population of interest, especially in regard to the *Community Involvement* subscale.

The findings suggest that researchers or practitioners working with parents of middle school youth with an IEP primarily due to behavior related issues could reliably use the three-factor model to score the assessment and to analyze data. However, there is some concern regarding the *Service Systems* and *Community Involvement* subscales if families were not actively engaged in mental health supports or advocating for mental health reform within the community, respectively. More studies are needed to answer the question about the best way to score the *FES* with this population of families. Future research might also begin to look at how the levels of family empowerment change over time, and especially by subscale.

### **Limitations and Future Research**

Three study limitations should be mentioned. First, participants were limited to parents of middle school youth with school identified ED or OHI due to emotional or behavioral needs. Future studies should consider including samples of parents who have a child with ED in elementary or high school and perhaps include eligibility based on a clinical mental health diagnosis. It is possible that empowerment levels might differ depending on the child's age or

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grade level or by certain mental health diagnoses, especially for the Services subscale. Second, the sample was relatively small at 212 and conducted in a single geographic region. Furthermore, the sample was predominantly Caucasian. It is possible that empowerment levels could vary based on cultural or ethnic diversity as well as by geographic setting (e.g., urban and rural areas). It has been established that certain factors such as poverty, single parenting, and cultural barriers contribute to engagement in services and thus likely impacts parental empowerment (Children's Bureau, 2016). Replicating the findings in other settings and with samples that are more diverse would be beneficial. This would include an emphasis on recruiting not only a larger sample, but also a more diverse sample including those from various racial and ethnic backgrounds as well as from varied settings such as urban and rural areas. Finally, parents in the current study had voluntarily consented to participate in a randomized controlled trial for a parent support intervention. It is possible that volunteering for such a trial is influenced by parents' level of empowerment.

### **Conclusions**

Although the evaluation of caregiver empowerment is important for service providers, clinicians, and education professionals working to improve the outcomes of youth at-risk, including those with emotional and behavioral disorders no known studies have evaluated psychometrically-sound measures of caregiver empowerment in parents of middle school youth with ED or OHI. The results support the use of the *FES* with this population, and further validate the three factor structure identified by Koren and colleagues during measure development (Koren et al., 1992). Practical and clinical implications of these findings include support for the use of the *FES* with this particular group of caregivers. Specifically, results of the *FES* may be helpful for service providers or school staff working with families when considering additional services

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that families may need access to in order to support their child. Being able to identify parents who have varied levels of empowerment may help to match specific services and supports to a parent's individual empowerment level, thus improving outcomes for families and youth.

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Ethical approval: All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. All procedures were approved by the lead author's university IRB prior to conducting the study.

Informed consent: Informed consent was obtained from all individual participants included in the study.



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Table 1

*Example Items from the Modified Family Empowerment Scale*

Subscale	Example Item
Family	<p>When problems arise with my child, I handle them pretty well.</p> <p>I feel confident in my ability to help my child grow and develop.</p> <p>I know what to do when problems arise with my child.</p> <p>I feel my family life is under control.</p> <p>I am able to get information to help me better understand my child.</p>
Mental Health Services	<p>I feel that I have a right to approve all services my child receives.</p> <p>I know the steps to take when I am concerned my child is receiving poor services.</p> <p>I am able to make good decisions about what services my child needs.</p> <p>I make sure that professionals understand my opinions about what services my child needs.</p> <p>I am able to work with agencies and professionals to decide what services my child needs.</p>
Special Education Services	<p>I make sure I stay in regular contact with school teachers and staff who provide services to my child.</p> <p>My opinion is just as important as the school's opinions in deciding what special education services my child needs.</p> <p>I know what special education services my child needs.</p> <p>I have a good understanding of the special education service system that my child is involved in.</p> <p>The school should ask me what services I want for my child.</p> <p>I tell people in agencies and government how services for children can be improved.</p>
Community	<p>I know how to get agency administrators or legislators to listen to me.</p> <p>I know what the rights of parents and children are under the special education laws.</p> <p>I feel that my knowledge and experience as a parent can be used to improve services for children and families.</p>

Note. Items are rated on a 5-point Likert Scale ( 1 = never to 5 = very often).

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**Table 2***CFA Model Fit Indicators*

	$\chi^2_{(df)}$	$\Delta\chi^2$	CFI	RMSEA [90% CI]
Single-Factor Model	2345.41 <sub>(527)</sub>	–	0.706	0.128 [.122, .133]
Three-Factor Model	951.66 <sub>(524)</sub>	197.37*	0.931	0.062 [.056, .068]
Bifactor Model	841.95 <sub>(493)</sub>	125.40*	0.951	0.058 [.051, .064]
Four-Factor Model	1733.67 <sub>(521)</sub>	–	0.804	0.105 [.099, .110]

\* $p < .0001$

**Note.**  $\Delta\chi^2$  for the two confirmatory models was calculated using the DIFFTEST feature in Mplus (Muthén & Muthén, 1998-2014). The degrees of freedom for the difference tests were calculated as the difference in the number of degrees of freedom between the two models being compared.

**Table 3***Reliability Estimates*

	$\alpha$	$\omega$	$\omega_h$
Family Empowerment	0.91	0.94	0.23
Service System Empowerment	0.90	0.93	0.32
Community Empowerment	0.89	0.93	0.74
Overall (General) Empowerment	–	0.97	0.76

**Table 4***Convergent Relationships between FES, PAM, CGSQ and SDQ**Scores*

	Service		
	Family	Systems	Community
	Empowerment	Empowerment	Empowerment
PAM Total	0.60*	0.57*	0.26*
CGSQ Total	-0.28*	0.07	0.03
SDQ Total	-0.35*	-0.05	-0.01

\* Statistically significant at the 0.05 alpha level.