

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

A PSYCHOMETRIC INVESTIGATION OF THE FAMILY EMPOWERMENT SCALE

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Abstract

Since the advent of the consumer movement roughly 30 years ago, professionals across helping disciplines have lauded empowerment as a critical piece to effective consumer-centered services. Within youth mental health in particular, quality improvement initiatives and flagship service models have been effortfully built with empowerment as a core tenet. Notably, these clinical efforts largely outpaced any consensus on how to clearly define or measure empowerment, and consequently, empirical investigation of empowerment's relationships to service engagement, processes, and outcomes is relatively underdeveloped. Koren and colleagues' Family Empowerment Scale (FES; 1992) is the first general empowerment measure ever created and remains the primary instrument for assessing caregivers' empowerment in the context of their seeking supports for children with emotional disabilities; however, questions about its structure, scoring, and performance, particularly with ethnic minority caregivers, remain unresolved even decades after its conception. The current study therefore examined the FES' factor structure, reliability, and validity as applied to a community sample of 354 ethnically diverse caregivers from Hawai'i. Although the competing four-factor, three-factor, and three-factor bifactor models were all identified to provide an acceptable fit to this sample's data, the three-factor bifactor model yielded the best fit indices. Furthermore, omega hierarchical estimates indicated the majority of FES response variance was attributable to participants' differences on a general empowerment factor (as opposed to empowerment within the family, service system, or community/political subdomains). The identified FES General scale and three subscales' reliabilities all fell in the excellent range. Regarding convergent validity, all FES scales showed promising associations with purported determinants of treatment-seeking behavior, including Help-Seeking Intentions, Knowledge, and Perceived Behavioral Control; however, more

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unexpected patterns emerged between the FES Community/Political scale and scales measuring Help-Seeking Attitudes and Perceived Treatment Barriers. Overall results contribute to the FES psychometric literature by furthering evidence of its potential bifactor structure, highlighting its applicability to Asian and Pacific Islander caregivers, and replicating observed relationships with other variables associated with mental health service uptake.

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Psychometric Study of the Family Empowerment Scale

Background

Consumer empowerment has been long touted as an essential component of advancing consumers' and families' effective engagement in mental health services; however, a nuanced understanding of empowerment as a mental health construct has been hampered by issues of circularity in its study (Salzer, 1997; Segal et al., 1995). Indeed, empowerment's induction as a guiding principle for mental health care dates back to the late 1980s and early 1990s with the rise of the mental health consumer movement (e.g., Stroul & Friedman, 1986), and the field's rush to incorporate empowerment concepts into quality improvement initiatives largely outpaced psychometric development efforts and definitional consensus (Koren et al., 1992; Rogers et al., 1997). Accordingly, psychometrically-sound measurement and evaluation of consumer empowerment has only begun to occur years after its reification within large-scale mental health initiatives, and questions related to how well these initiatives promote and capitalize upon empowerment, or even how much empowerment influences mental health treatment outcomes, have not been satisfactorily resolved (Salzer, 1997). Keeping with how this line of research has unfolded, then, this paper will sequentially review empowerment's early rise in mental health, ongoing conceptual issues in its definition and measurement, psychometric development efforts around it, and finally, the current state of research efforts linking empowerment to other mental health service-related constructs.

Empowerment's Rise in Mental Health

A 2006 report by Canada's Standing Committee on Social Affairs, Science, and Technology stated that "Children and youth are at a significant disadvantage when compared to other demographic groups affected by mental illness, in that the failings of the mental health

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system affect them more acutely and severely” (Kirby & Keon, p. 135). Mental health conditions are the leading cause of youth disability worldwide (Erskine et al., 2015), and take a tremendous financial and psychological toll on the youth and families affected. In fact, mental health conditions have repeatedly been not only the most expensive domain of childhood health conditions overall but have also incurred the highest expenses per treatment-seeking child in the United States (Soni, 2009; Soni, 2015). Beyond this fiscal burden, caregivers of youth with mental health concerns often experience negative impacts on their own emotional and physical wellness. Affected youths’ family members have reported experiencing feelings of grief, exhaustion, frustration, anxiety, and guilt; sleep disturbances; reduced activities outside of the home; stigmatization and ostracization; family breakdown; and perceived lack of support from mental health systems and service providers (Albert & Simpson, 2015; O’Grady & Skinner, 2012; Rose et al., 2002).

Per Jubb and Shanley (2002), one issue that has historically worsened families’ caregiving burdens (and consequently, youth mental health outcomes) has been the mental health system’s neglect of the unique expertise and therapeutic role families can offer to those in mental health treatment. For example, Tunnell and colleagues (1988) highlighted brief psychiatric hospitalizations as characteristic of an era dominated by the medical model of treatment, even though these were often unsustainably expensive and ineffective at producing sufficient recovery for individuals with severe mental illness to re-integrate into their home lives. A key problem with this approach, the authors argued, was the lack of co-occurring training, education, and support for families- despite extant evidence that families often became caregivers post-discharge and that family psychoeducation programs showed a significant reduction in relapse rates compared to hospitalization alone (Tunnell et al., 1988). Institutions’ slow uptake of

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family-centered models has been tied to a variety of factors, including organizational characteristics (e.g., ability to bill for transitional services), surrounding community demographics (i.e., whether the local population is perceived as socioeconomically, culturally, and linguistically prepared to engage in a family member's treatment), and, of particular importance, providers' ambivalent and even negative attitudes about family members of those with mental health conditions (Tunnell et al., 1988). Corrigan and Miller (2004, p. 541) argued that while once-dominant theories of "parental weakness" causing youth mental health concerns have diminished since the latter half of the 1900s, their lingering influence on public and provider attitudes contributes to families' experiences of stigma and tension with the mental health system. In line with this perspective, a series of focus groups conducted by Rose and colleagues (2004) over 15 years after Tunnell et al.'s (1988) work found that families continued to cite a lack of inclusion in and education about treatment as a major barrier to their successful engagement in relatives' care.

One key quality improvement initiative spanning the last three decades has involved what DeChillo and colleagues (1994, p. 564) described as a shift "from paternalism to partnership" in the relationship between service providers and families. In response to widespread caregiver dissatisfaction with services provided for children with emotional and behavioral difficulties (Collins & Collins, 1990; Tarico et al., 1989), the early 1990s were marked by a number of federal laws and state initiatives mandating increased collaboration between families and mental health service providers in the United States (Curtis & Singh, 1996; DeChillo et al., 1994). This movement contributed to a proliferation of service delivery via systems of care (Graves & Shelton, 2007), which placed newfound emphasis on caregivers' agency and active participation in youth mental health treatment (Stroul & Friedman, 1986). The system of care model, typically

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defined as “a coordinated network of community-based services designed to meet the challenges of youth and their families” (Substance Abuse and Mental Health Services Administration, 2015, p. 2), simultaneously targeted numerous grievances about children’s mental health services by aiming to reduce institutionalization; facilitate access to community-based supports; provide flexible, comprehensive, and integrated services; and, most importantly, empower families throughout the service process (Cook & Kilmer, 2004). The family-driven, empowerment-focused approach around which this model was conceived has not only endured as a system of care guiding principle (Hodges et al., 2010; Stroul et al., 2010), but has been accepted as the foundation of numerous large-scale youth mental health quality improvement initiatives (e.g., the Federal Children’s Mental Health Initiative) and is commonly recognized as a general best practice in children’s mental health services (Cook & Kilmer, 2004; Stroul et al., 2010).

Despite the family-centered mental health service model’s glowing reception amidst the rise of positive psychology and resiliency-focused paradigms, there has been relatively little investigation into how the most well-received elements of this model might be associated with its success (Cook & Kilmer, 2004; Graves & Shelton, 2007). Graves and Shelton (2007) contend that among the many elements of family-centered care argued to be important (e.g., individual tailoring of resources, connecting families with community supports, cultural and linguistic competencies in service delivery; see Stroul et al., 2010), empowerment is most often described as the crucial piece for treatment success; however, they noted that at the time of their work, no studies had empirically examined empowerment as a mechanism of change within family-centered care. As described previously, one barrier to such research was that even as treatment delivery systems were built around the aspiration of family empowerment, the construct itself was poorly operationalized and not measurable by standardized methods. In a stark illustration of

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this problem, Staples' (1990) discussion of empowerment reported that despite mounting conceptual interest, the noun form of "empowerment" was not yet listed in *Webster's World Dictionary*. Thus, although empowerment was already hailed as a pillar of mental health quality improvement by the late 1980s through 1990s, a lack of consensus on its definition meant that psychometrically sound measurement and empirical validation of its impact on quality improvement remained incomplete over the next decade (Koren et al., 1992; Salzer, 1997).

Defining and Measuring Empowerment

In their own work to define and measure empowerment, Koren and colleagues (1992) highlighted the concept's emergence as a shared research focus and value across various helping professions in parallel with the consumer movement. This multidisciplinary captivation with a tenuously defined construct yielded various complementary definitions; empowerment has been dually conceptualized as a collective and individual phenomenon, a process and an outcome, a status both externally granted and internally developed, and a way to gain control over one's own life and participate effectively in one's community (Rogers et al., 1997; Staples, 1990; Zimmerman & Rappaport, 1988).

One of the earliest attempts to quantitatively measure empowerment came from Zimmerman and Rappaport's (1988) work, which defined "psychological empowerment" as "the connection between a sense of personal competence, a desire for, and a willingness to take action in the public domain" (p. 725). Notably, the authors did not develop any unified measure of empowerment, but instead leveraged 11 different indices related to personality, cognitive, and motivational aspects of perceived control in an attempt to identify an underlying common dimension approximating psychological empowerment. When administered to an adult community sample, their battery results showed predominantly moderate correlations between

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the 11 proposed empowerment indices (i.e., mean $r = .29$, range .02 - .56), which the authors interpreted to indicate that each measure assessed both an overlapping and unique aspect of empowerment. Furthermore, a discriminant function analysis yielded one significant common dimension across the 11 indices that was positively associated with community engagement above and beyond any of the individual indices; specifically, this composite variable representing empowerment accounted for 29.16% of the variance in participants' level of activity engagement (i.e., determined based upon participants' responses to an activity checklist including behaviors such as voting and attending community meetings) and 18.49% of the variance in their level of community involvement (i.e., determined based upon a standardized sum of participants' self-reported number of leadership positions held, number of hours spent, number of membership months, and attendance rate within community organizations). Taken together, the authors interpreted their results to suggest that the common variance across their 11 indices could be defined as psychological empowerment; that psychological empowerment is composed of cognitive, personality, and motivational aspects of personal control and competence; and that psychological empowerment is predictive of the degree of engagement one will have in community activities (Zimmerman and Rappaport, 1988). This work provided early evidence of empowerment as a multifaceted construct related to behavioral engagement with one's community; however, the authors recommended additional studies to better clarify causal relationships between empowerment and participation and to potentially develop an abbreviated, unified instrument that could more readily assess empowerment in future research.

Over 30 years after Zimmerman and Rappaport's (1988) work, empowerment research remains plagued by conceptual ambiguity – in fact, its multifaceted nature seemingly contributes to ongoing inconsistency in how it is operationalized and assessed. To illustrate, Acuña Mora et

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al. (2022) sought to inventory definitions and measures of patient empowerment within healthcare literature and encountered a myriad of conceptualizations. Although the authors hoped to find that healthcare researchers shared a clear, cohesive understanding of empowerment, they instead found that among 76 studies claiming to measure empowerment, only 49 offered an explicit definition of their target construct. Those 49 studies collectively offered 35 unique definitions and 38 unique instruments ostensibly used to assess empowerment. Furthermore, 12 of the studies cited multiple definitions simultaneously and 24 of them did not consistently differentiate empowerment from related constructs that the authors argued are already clearly defined in their own respective literature (e.g., “self-efficacy,” Bandura 1997). Perhaps due to this conflation, eight of the 76 studies assessed empowerment only with measures of empowerment-adjacent proxy constructs (e.g., self-efficacy, patient activation) and another seven studies used self-developed questionnaires informed by the researchers’ unspecified interpretation of empowerment. To complicate matters further, the authors also found that more than 50 potential correlates of empowerment have been examined within existing literature, yet most of those variables have been studied fewer than five times, with inconsistent empowerment definitions as their basis for association. Acuña Mora and colleagues conclude that researchers’ understanding of empowerment might best be enhanced by a twofold approach of improving definitional clarity and replicating important correlational findings across studies.

Although it predates Acuña Mora and colleagues’ review, one particularly ambitious attempt to clarify empowerment’s definition lies within Fumagalli et al.’s (2015) aptly titled literature review, *Patient Empowerment and its Neighbors: Clarifying the Boundaries and Their Mutual Relationships*. Fumagalli and colleagues assert that empowerment arose within “an explosion of terms... each having multiple and overlapping meanings” (p. 384), and that because

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studies claiming to measure patient empowerment have actually assessed a variety of phenomena, there is no way to effectively synthesize research evidence and make inferences about empowerment's role in care. Accordingly, their work attempted to disentangle empowerment from several adjacent and overlapping terms used in healthcare contexts: engagement, enablement, participation, involvement, and activation. The authors collected definitions of these terms used by 286 unique studies; compared those diverse definitions to identify their commonalities, differences, and connections; and ultimately proposed a concept map that outlines the boundaries and relationships between empowerment and its neighboring terms along two dimensions: the construct's nature (i.e., process, emergent state, or behavior) and focus (i.e., acquisition of motivation, ability, or power). Regarding the first dimension, the authors concluded that empowerment encompasses a combination of an emergent state (i.e., possession of cognitive, motivational, and affective conditions that allow one to take action) and the process by which individuals arrive at that state, but does not include behaviors, as might be indicated by the terms involvement or participation. To further this point, they cite arguments that holding power precedes but does not guarantee channeling that power into actual actions (e.g., Aujoulat et al., 2007). For the second level of distinction, the authors differentiated the patients' acquisition of power from their acquisition of only motivation (as in engagement) or ability (as in enablement; p. 386), as the latter two in isolation are insufficient to constitute power. Fumagalli and colleagues thus summarize that empowerment can be a result of engagement and enablement, and a prerequisite for participation and involvement, but is best defined and measured as conceptually distinct from any of these associated terms.

Overall, these studies have made noble efforts in better defining empowerment, with some noteworthy compatibility in their conclusions: in acknowledging the cross-cutting

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relationships between empowerment and its adjacent constructs, Fumagalli and colleagues' (2015) concept map echoes Zimmerman and Rappaport's (1988) description of empowerment as a unique function represented by the connections between other cognitive, personality, and motivational elements underlying personal control. Both sets of authors also work to isolate empowerment's unique predictive value while also honoring its shared variance with related constructs, thereby avoiding the trap of term conflation and interchangeability identified by Acuña Mora et al.'s (2022) work. Nonetheless, the reality is that much of this progress occurred well after empowerment's explosion in mental health literature and decades after the development of the only existing measure of caregivers' empowerment for seeking youth mental health services (Koren et al., 1992); thus, there is still much work to be done to improve empowerment's measurement in youth mental health.

The Family Empowerment Scale: Original Development

As Zimmerman and Rappaport (1988) suggested, burgeoning mental health reforms highlighted the unmet need for a targeted empowerment measurement tool, and particularly for one that might be leveraged to measure empowerment as it was conceptually relevant to mental health service consumers. Building from this momentum, Koren and colleagues (1992) developed the Family Empowerment Scale (FES) toward the goal of providing a brief self-assessment of empowerment specifically tailored to families seeking supports for youth with emotional disabilities. Within their efforts, which they noted to represent both the first general empowerment measure as well as the first to focus on family members of youth with emotional disabilities, the authors chose to operationalize empowerment as a state rather than as a causative condition or process. Specifically, Koren and colleagues believed this perspective maximally aligned with Staples' (1990, p. 30) view of empowerment as an "ongoing capacity of individuals

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or groups to act on their own behalf to achieve a greater measure of control over their lives and destinies,” which would avoid the assumption of constancy and allow for measurement of empowerment as it might change in response to time and experiences. The authors leveraged existing research, discussions with caregivers of youth with emotional disabilities, and contributions from service-provider staff to develop a two-dimensional conceptual framework that guided item development. The first of these dimensions relates to the setting of empowerment, which Koren and colleagues argued could be expressed at three levels of: (a) family, including caregivers’ management of daily activities, (b) service system, including caregivers’ active engagement in services on behalf of their children, and (c) community, including caregivers’ advocacy at the policy-making level for all children. The second dimension relates to the way in which empowerment is expressed, which the authors asserted could include: (a) attitudes, or what caregivers believe, (b) knowledge, or what information caregivers know and might act upon, and (c) behaviors, or what caregivers actually do. The authors further noted that each expression of empowerment can occur at any given level for a total of nine possible manifestations; for example, a survey item such as “I tell professionals what I think about services being provided to my child,” would represent behaviors expressed at a service system level (Koren et al., 1992, p. 309). Koren and colleagues generated a large pool of items representing each of these nine cell combinations, then selected three to four final items per cell by consensus on parameters of clarity and content relevance. Following pilot testing with a sample of 94 community parents, items were revised and added, resulting in a 34-item measure with response options consisting of a 5-point rating continuum from “1” (i.e., “not true at all”) to “5” (i.e., “very true”). Notably, the authors reported their analyses in an atypical sequence (i.e., reliability analyses before factor analysis), and seemingly determined their subscales (i.e., 12

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“Family” items, 12 “Service System” items, and 10 “Community/Political” items) and their scoring strategy (i.e., each subscale score is determined based on the sum of corresponding item responses) without fully integrating psychometric and factor analytic testing. Specifically, the authors did align their scoring system with the dimension that prevailed in their factor analyses (i.e., level rather than expression), but they also maintained their item organization across the three levels exactly as they originally proposed, despite contrary item loading results.

Koren and colleagues' (1992) initial psychometric evaluation of the FES used a sample of 440 caregivers (94% female, 92% White, 85% birth or adoptive parents) of children under age 21, who were recruited through organizations providing services for families of youth with mental health concerns. Among this population, the FES demonstrated internal consistency in the good range (per benchmarks from George & Mallery, 2013) for each of the authors' proposed subscales of Family ($\alpha = .88$), Service System ($\alpha = .87$), and Community/Political ($\alpha = .88$) levels. Koren et al. also assessed test-retest reliability for 107 caregivers who completed the FES a second time, three to four weeks after initial administration, and found Pearson correlation coefficients indicating reliability in the acceptable range for the Service System subscale ($r = .77$) and in the good range for the Community/Political ($r = .85$) and Family ($r = .83$) subscales. These coefficients collectively suggest good interrelation between each subscales' respective items and reasonable stability of subscale scores within short periods of time. The authors did not assess convergent or divergent validity; however, content validity was approximated by enlisting 25 professionals, including social work faculty and service providers, to classify items within the proposed conceptual framework without having prior knowledge of the authors' hypotheses. Koren and colleagues calculated Fleiss' (1971) Kappa for multiple raters and found agreement coefficients for the professionals' classification of items to the

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Family ($\kappa = .83$), Community/Political ($\kappa = .77$), and Service System ($\kappa = .70$) subscales to meet Landis and Koch's (1977) benchmarks for Substantial agreement. The authors likewise found an average agreement coefficient of .83 between all raters and their original proposed framework and interpreted this as providing substantial support for their suggested item classification.

After completing the analyses described above, Koren and colleagues next completed an exploratory factor analysis (EFA) to further test their assumptions about how the FES' factor structure aligned with their proposed conceptual framework. Of note, this sequencing of analyses is unusual, as limited expressions of reliability and validity are insufficient indicators of dimensionality and would typically be assessed more broadly after identifying a measure's structure via factor analysis. For their initial EFA, Koren and colleagues used a principal axis factoring extraction with the Varimax rotation method and found four factors that accounted for 52% of the variance (Koren et al., 1992). Although the authors did not formally name these four factors following their analyses, they contended that the factor structure overall aligned with their proposed framework for three empowerment levels. Specifically, the authors declared that the 10 items loading onto Factor I represented a strong core aligning with the Community/Political level, the nine items loading on Factor II and four items loading on Factor IV collectively represented the Service System level, and the remaining nine items on Factor III represented the Family level of empowerment. The factors' correspondence to the proposed framework for empowerment expression (i.e., Knowledge, Behaviors, Attitudes) appeared minimal; although Factor II was comprised of predominantly Knowledge items, the other factors were mixed between all three expression categories. Notably, Koren and colleagues (1992) did not report factor loadings for FES Items 1 and 8 (although these were noted to load below 0.4), and offered no discussion about seven of the 32 reported items that showed similar or even identical loadings

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across multiple factors (e.g., Item 31, “When faced with a problem involving my child, I decide what to do and then do it,” showed a loading of .47 on both Factors II and III, and the authors did not share rationale for their decision to retain the item on Factor III). In summary, although this work ultimately yielded four factors with several cross-loading items, the Koren and colleagues’ (1992) decision to cluster Factors II and IV together and describe their results as indicating three levels of Family, Community/Political, and Service System empowerment have resulted in subsequent literature often referring to their results as a three-factor solution (c.f., Huscroft-D’Angelo et al., 2018; Lambert et al., 2020).

The Family Empowerment Scale: Ongoing Study

Additional factor analyses conducted after Koren and colleagues’ original work have provided mixed support for their framework. The first attempt at replicative psychometric study of the FES came from Singh and colleagues (1995) and used a sample of 228 parents (71.9% birth mothers, 77.2% White) of youth described as having a “serious emotional disturbance” and/or an Attention-Deficit/Hyperactivity Disorder (ADHD) diagnosis. The authors conducted an EFA using “a principal components procedure for factor extraction” (p. 87) and the Varimax rotation method and used a combination of mathematical (i.e., scree plot and Eigenvalues) and qualitative reasoning to determine the number of factors to extract. Per the authors, a three-factor solution seemed the most appropriate but lacked conceptual clarity, and a five-factor solution was acceptable but did not yield a structure similar to Koren and colleagues’ (1992) original work. The authors therefore opted for a four-factor solution that accounted for 52.5% of the total variance. The four factors were described as Systems Advocacy, representing parents’ thoughts, beliefs, and behaviors in relation to their interactions with the mental health service system; Knowledge, representing parents’ understanding and skills for obtaining necessary mental health

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services; Competence, representing the parents' perceptions of their parenting competencies; and Self-Efficacy, representing parents' self-perception of their ability to use and impact the mental health service system in ways that personally affect their families. Internal consistencies fell in the good range for the Systems Advocacy ($\alpha = .89$), Knowledge ($\alpha = .89$), and Competence ($\alpha = .85$) factors, and within the acceptable range for the Self-Efficacy ($\alpha = .79$) factor. The authors did not assess test-retest reliability due to their belief that this would be an inappropriate index given empowerment's capacity to change via external influences, nor did they report validity testing. Within their factor structure, eight of 34 total items loaded significantly onto more than one factor (i.e., loading $\geq .4$), and Pearson product-moment correlations among factors were all moderately high (i.e., ranging from .62 to .71; all p -values $< .001$), suggesting that Singh et al.'s (1995) identified factors were not independent.

Another early factor analysis by VanNess-Knolls and Tighe (1996), using a sample of 100 families (>75% White, parent gender not reported) who participated in a multilevel crisis intervention program for youth with mental health concerns, described a three-factor solution explaining 42% of the variance. Although most numerical values (as well as the type of factor analysis completed) were missing from the authors' conference presentation documents, they described three factors of Systems Advocacy, Competence, and Self-Efficacy that were "almost identical" to Singh and colleagues' (1995) findings, with the exception of the latter authors' Knowledge items migrating to other relevant factors (e.g., items that related to knowledge about systems advocacy moved to the Systems Advocacy factor). Per the authors' report, Cronbach's (1951) alpha coefficients indicated "substantial" internal consistency for all three factors (VanNess-Knolls and Tighe, 1996; p. 5).

Empowerment's Relationship to Mental Health Treatment

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Although the above-described models demonstrated some conceptual overlap, each study's reorganization and relabeling of FES factors seems to have only perpetuated disagreement about its best-fitting structure, scoring, and interpretation. Such disagreement has likely contributed to the FES' relative underutilization and limited utility in assessing empowerment's relationship to treatment engagement, processes, and outcomes. To date, empowerment as measured by the FES has often taken the role of an outcome variable to evaluate family-centered treatment programs, and many existing studies are dated and lack the methodological rigor necessary to infer causality. For example, Thompson and colleagues (1997) conducted a survey of 270 families of youth receiving early intervention services and found caregivers' ratings of their treatment experience on the Family-Centeredness Scale (Herman et al., 1996) were positively associated with their empowerment scores on all three of Koren et al.'s (1992) FES subscales. The authors' structural equation model proposed that increases in FES scores occurred both as a direct result of family-centeredness and through a secondary pathway by which family-centeredness increased access to supports, which decreased family stress and subsequently increased feelings of empowerment (Thompson et al., 1997). Importantly, however, the authors acknowledge that their cross-sectional methodology did not allow them to confirm their proposed flow of effects (i.e., empowerment could have instead elicited more family-centered treatment). Similarly, Dempsey and Dunst (2004) found that among 141 caregivers of youth who received early intervention services, participants who endorsed receiving a combination of relational (e.g., active listening, providing validation of existing competencies) and participatory (e.g., enabling joint decision-making, helping caregivers develop competencies) therapeutic strategies also reported higher FES total scores. Again, the authors used a cross-sectional approach that could not confirm directionality or causal effects.

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More recent studies that have employed repeated FES administration have found varying results related to how empowerment changes over the course of and in response to different treatment characteristics. One small-scale study found that parents' FES scores significantly increased across all three factors following their participation in a support group targeting psychoeducation and mutual aid for caregivers of youth with Autism Spectrum Disorders ($n = 11$; Banach et al., 2010). Another found that among caregivers of youth with ADHD, those who participated in in-person behavioral training services ($n = 25$) experienced significant pre- to post-treatment increases in their total FES scores, while caregivers who received services via video-teleconference ($n = 12$) experienced no significant changes in empowerment (Tse et al., 2015). Other studies have found more inconsistent evidence for empowerment as a product of treatment approach. Using only the FES Family subscale, Blanckstein and colleagues (2021) found that among caregivers of 111 youth enrolled in joint residential and systemic services, staffs' family-centered attitudes and behaviors had no apparent relationship with empowerment score changes. Furthermore, Bruns et al. (2015) found that when fidelity to the Wraparound model was poor, 6- to 12-month score changes across the three FES subscales did not differ between families of youth with serious emotional disorders who were enrolled in Wraparound ($n = 47$) versus traditional managed care ($n = 46$). McNally Keehn and colleagues (2020) likewise found that caregivers of youth with neurodevelopmental disabilities experienced similar increases in empowerment after participation in family-centered, strength-based intervention regardless of whether they received care coordination supports ($n = 17$) or care as usual ($n = 35$); however, they notably made up their own scoring system for the FES, consisting of items they deemed to be "about your family" (e.g., "I have a good understanding of my child's disorder")

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versus “about your child’s services” (e.g., “I am able to work with agencies and professionals to decide what services my child needs”; p. 5).

Even more sparse and inconclusive have been studies of empowerment as a predictor variable for treatment engagement and outcomes. Curtis and Singh (1996), applying the four-factor scoring model (Singh et al., 1995), found that caregivers’ scores on the FES Knowledge factor were moderately and positively correlated with their scores on the Family Involvement Scale (Singh et al., 1996), a self-report measure of parents’ perceived involvement in youth mental health services. Although this might suggest that parents with greater knowledge-related empowerment are more likely to be active participants in their children’s healthcare, the authors cautioned that because they only collected FES data after caregivers completed treatment, it was unclear whether parents gained knowledge empowerment through participation or were more active participants because of their pre-existing empowerment. Resendez and colleagues (2000) likewise used Singh et al.’s (1995) four-factor model to examine the relationship between scores on the FES and the Child and Adolescent Functional Assessment Scale (CAFAS; clinician-report measure that assesses youths’ levels of functional impairment; Hodges, 1989) in a sample of 2,414 caregivers of youth who received services from the Riverside County Department of Mental Health. Their findings indicated that all FES subscale scores showed small but significant negative correlations with youths’ CAFAS totals (i.e., higher empowerment related to lower impairment) at intake (Resendez et al., 2000); however, the authors did not expand their analyses to examine relationships between changes in empowerment and CAFAS scores between intake and discharge. Graves and Shelton (2007) explicitly note this as a shortcoming of extant analyses with the FES, and expanded this program of research to conduct the first study examining empowerment as a potential treatment progress mediator within family-centered care

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approaches. Participants of Graves and Shelton's (2007) study included 79 families of youth who were in or at-risk of out-of-home placements due to serious emotional and behavioral difficulties. Within this sample, the authors found that overall family empowerment, measured by the FES total score, mediated the relationship between family-centered care and changes in child functioning, such that family-centered care did not significantly predict decreases in children's problem behaviors after the model accounted for variance associated with changes in family empowerment. The authors hailed their results as among the first to examine an "active ingredient" of family-centered care, and suggested that future research continue to diversify participant samples and perhaps even expand to non-clinical populations, where a wider range of responses on empowerment measures might allow for identification of additional relationships between variables (Graves & Shelton, 2007).

In summary, although the FES is a promising tool with over 30 years of history in mental health research, its infrequent and inconsistent application across studies offers limited insight into empowerment's true role in family mental health services. Across the above-mentioned studies alone, the authors used four different scoring systems (i.e., composite total; three subscales derived from Koren et al., 1992; four subscales derived from Singh et al., 1995; and two subscales improvised by McNally Keehn et al., 2020) against a multitude of associations, yielding minimal replications and poor opportunity for cross-study comparisons. Furthermore, the few studies that examined their selected FES subscales separately found no significant differences in the direction or magnitude of each subscale's relationships with associated variables, drawing further into question the utility of using such disparate scoring systems. Accordingly, recently renewed research efforts around the FES have focused primarily upon identifying a replicable, clinically useful factor structure.

The Family Empowerment Scale's Structure Revisited: A Bifactor Model

Huscroft-D'Angelo and colleagues (2018) conducted the first factor analysis of the full FES in over two decades since VanNess-Knolls and Tighe's (1996) study, using a sample of 212 caregivers (86.3% female, 74.3% White) of middle-school aged youth with Individualized Educational Plans for emotional and behavioral concerns. The authors completed a confirmatory factor analysis (CFA) to assess the fit of four different models: (a) a single-factor (unidimensional) solution, (b) a four-factor solution based on Singh et al. (1995), (c) a three-factor solution based on Koren and colleagues' (1992) proposed scoring system, and (d) a bifactor model with one general and three specific factors (henceforth referred to as a three-factor bifactor solution), which further explored the three-factor model by assuming a general factor onto which all items load in addition to three orthogonal, level-specific grouping factors. Bifactor models, though historically underutilized in psychometric evaluations, are a useful method for exploring the empirical feasibility and practical utility of subscales on test scores (Reise et al., 2010; Rodriguez et al., 2015). The authors' results highlighted the three-factor bifactor model as the most favorable solution (i.e., Comparative Fit Index [CFI] = .951, Root Mean Square Error of Approximation [RMSEA] = .058), as this provided a significant improvement in fit (i.e., $\Delta\chi^2 = 125.40$, $p < .001$) compared to the three-factor model (i.e., CFI = .931, RMSEA = .062, and neither the single-factor nor four-factor model provided an acceptable fit to their data. The authors also calculated omega hierarchical estimates. When calculated for the general factor in a bifactor model, omega hierarchical represents the percentage of reliable score variance on the overall measure that can be attributed to individual differences on the identified general latent factor; by contrast, when calculated for a specified subscale, omega hierarchical represents the proportion of reliable score variance of that subscale

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score after partitioning out variance attributable to the general factor (Reise et al., 2013).

Huscroft-D'Angelo and colleagues (2018) reported an omega hierarchical estimate of .76 for the FES General factor, indicating that 76% of the variance in caregivers' total FES scores was attributable to one underlying empowerment variable. Omega hierarchical estimates were .23, .32, and .74 for the Family, Service System, and Community/Political factors, respectively, indicating that 23% of the variance of the Family score was attributable to a family latent variable, 32% of the Service System score was attributable to a service system latent variable, and 74% of the variance of the Community/Political score was attributable to a community/political latent variable. As interpreted by the authors, these results imply a fairly strong general family empowerment factor that was primarily shared between the Family and Service System factors). The Community/Political factor had the most unique variance, suggesting that this subscale might measure slightly different elements of empowerment compared to the other subscales. Huscroft-D'Angelo et al. (2018) also found the FES to show good convergent validity with the Parent-Patient Activation Measure (PAM; Green et al., 2010), which assesses caregivers' knowledge, skills, and confidence in managing children's healthcare. All three FES subscale scores were significantly correlated with PAM scores (Family $r = .60$; Service System $r = .57$; Community/Political $r = .26$). Similarly, the FES Family subscale showed good divergent validity with the Caregiver Strain Questionnaire ($r = -.28$), which purportedly assesses the extent to which caregivers experience additional demands and stress related to caring for a child with emotional or behavioral problems. Taken together with the FES' good to excellent range reliability as indicated by both Cronbach's (1951) alpha (i.e., Family $\alpha = .91$, Service System $\alpha = .90$, Community/Political $\alpha = .89$) and McDonald's (1999) omega (i.e., Family $\omega = .94$, Service System $\omega = .93$, Community/Political $\omega = .93$), the authors proposed that

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their results support the use of a three-subscale FES scoring system, but that further testing with more diverse caregiver populations would be beneficial.

Following from this line of research, Lambert and colleagues (2020) tested the same set of models using FES response data from 120 caregivers (83.3% female, 74.3% White) of youth who were recently discharged from residential therapy. Their results largely converged with Huscroft-D'Angelo et al.'s (2018) findings; the three-factor bifactor model again emerged as the best fit (i.e., CFI = .964, RMSEA = .054) and showed significant improvement in fit (i.e., $\Delta\chi^2 = 107.90, p < .001$) over the three-factor correlated traits model (i.e., CFI = .946, RMSEA = .065), which was the only other model to achieve acceptable fit. Omega hierarchical estimates were .35, .13, and .53 for the Family, Service System, and Community/Political factors, respectively, again showing that a considerable amount of item variance within each of these subscales was not specifically associated with their corresponding separate latent constructs. The omega hierarchical estimate for the FES General factor, by contrast, was .84, indicating that 84% of all FES response variance for Lambert and colleagues' (2020) participants was related to their differences on a general empowerment latent construct. Reliability estimates were in the good to excellent range for both the subscales (i.e., Family $\alpha = .91, \omega = .94$; Service System $\alpha = .94, \omega = .96$; Community/Political $\alpha = .87, \omega = .91$) and the General factor (i.e., $\alpha = .94, \omega = .97$). Lambert and colleagues (2020) also found good support for the FES' convergent validity with the Caregiver Self-Efficacy Scale (CSES; Boothroyd & Evans, 1997), as evidenced by moderate (i.e., $r = .30$; Cohen, 1988) or higher bivariate correlations between most FES and CSES subscale dyads and between the FES total score and each CSES subscale score. The authors interpreted their collective results to suggest that while a three-factor scoring system for the FES is acceptable, the high unique variance attributed to the General factor (i.e., 84%) and improved

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fit of the bifactor over the three-factor model make a unidimensional FES scoring system a worthwhile future research focus.

Although neither Huscroft-D'Angelo et al. (2018) nor Lambert et al. (2020) outlined a theoretical rationale for their decisions to test a bifactor model, the introduction of this model into FES psychometric literature might nicely complement the aims of recent conceptual literature on empowerment. Specifically, while conceptual analyses have sought to improve cross-comparability of research by disentangling empowerment's definition from those of adjacent and related constructs, a bifactor model could ideally disentangle the shared and unique variance of the FES factors and yield a more cohesive, clinically relevant measurement of family empowerment. Toward the goal of better understanding the FES' optimal scoring system and its measured constructs' relationships with mental health service uptake, engagement, and outcomes, the FES might particularly benefit from studies that further probe its potential bifactor structure; that expand its administration to more ethnically and clinically diverse family samples; and that examine its relationships with other treatment-associated constructs (e.g., behavioral intentions, treatment barriers).

The Current Study

The current study examined the FES' factor structure, reliability, and validity as applied to a non-clinical, ethnically diverse sample of caregivers in Hawai'i. This study had three primary aims. First, in light of historically mixed findings with regard to the FES' factor structure, CFAs were conducted to compare the extent to which a single-factor (unidimensional), four-factor (i.e., based upon Singh et al., 1995), three-factor (i.e., based upon Koren et al.'s [1992] scoring schema), or three-factor bifactor model best fit with the current sample after adjusting for parsimony. In line with contemporary psychometric studies' findings (Huscroft-

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D'Angelo et al., 2018; Lambert et al., 2020), I hypothesized that the three-factor bifactor solution would provide a significantly better fit compared to the other two models using caregiver scores. The second aim of this study was to examine the reliability of the total and forthcoming subscale factors of the FES. Consistent with extant research (e.g., Huscroft-D'Angelo et al., 2018; Koren et al., 1992; Lambert et al., 2020; Singh et al., 1995), I hypothesized that the total and subscale factors of the FES would demonstrate good reliability. Finally, construct validity of the FES was investigated by examining its convergent validity patterns with the Parental Attitudes Toward Psychological Services Inventory (PATPSI; Turner, 2012), a measure of caregivers' general attitudes toward outpatient mental health services, and the Parent Engagement in Evidence-Based Services questionnaire (PEEBS; Chang, 2016), a measure of caregivers' behavioral determinants for pursuing evidence-based mental health interventions for their children. It was hypothesized the FES total score and relevant subscales would demonstrate evidence of convergent validity as evidenced by moderate correlations (in expected directions, outlined below) with these theoretically related constructs.

Methods

Participant Sampling and Demographics

Participant data were drawn from a larger psychometric investigation of the Parent Engagement in Evidence-Based Services questionnaire (PEEBS; Chang, 2016), in which eligible participants were defined as any adult who provided primary care for a youth up to 18 years of age, regardless of their blood relative status to the youth (Choy, 2020). Volunteer participants were recruited from 14 local, community-based family events (i.e., events had no affiliation with clinical mental health services) between April 2016 and April 2018. Of the 733 caregivers solicited for participation, 400 individuals completed and returned the measure battery, resulting

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in a 55% participation rate. Multiple caregivers from the same family were allowed to participate; however, the authors retained only one response set per family within the final dataset to prevent potential analytic confounds resulting from dual reports referencing the same youth. This resulted in a final sample of 360 caregivers from unique families, who were predominantly female¹ ($n = 271, 75.4\%$), an average of 40.5 years old (range = 21 – 65, $SD = 7.7$), and racially diverse (i.e., Asian $n = 225, 62.5\%$; Native Hawaiian/Pacific Islander $n = 112, 31.3\%$; White $n = 90, 25.0\%$; multiracial $n = 84, 23.3\%$). A majority of caregiver participants were married or in domestic partnerships ($n = 280, 77.8\%$) and had completed at least some college ($n = 290, 80.6\%$). Reported household size ranged from one to 14 people ($M = 4.4, SD = 1.4$), and although household income data was collected via ordinal brackets (e.g., “\$0 - \$5000”) rather than specific figures, a minimum of 42.8% of participants ($n = 154$) were determined to come from “low income” households based on their endorsement of an income bracket for which the upper limit fell below the “low income” threshold for their respective household size and metropolitan area (i.e., as defined by the U.S. Department of Housing and Urban Development, 2018). See Table 1 for additional demographic details of this sample.

Measures

Family Empowerment Scale

The Family Empowerment Scale (FES; Koren et al., 1992; Appendix A) is a 34-item self-report measure of empowerment for caregivers of youth experiencing emotional and behavioral

¹ The Publication Manual of the American Psychological Association, Seventh Edition (2020) differentiates the terms “sex” and “gender” and recommends reporting on participants’ genders rather than assuming binary/cisgender identities; however, the Participant Background Information form (Appendix D; Chang, 2016) explicitly used the term “sex” and offered only male and female options. Although the author strongly aligns with the APA’s stance on this matter and regrets the limitations of this archival dataset, this manuscript will use the term “sex” in order to not misrepresent the data as they were collected.

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difficulties. The FES operationalizes empowerment as a multi-faceted and dynamic state of attitudes, knowledge, and behaviors that relate to a caregiver's capacity to achieve greater control over challenges related to their child's emotional or behavioral concerns. Items are rated on a 5-point scale (i.e., ranging from 1 = "not true at all" to 5 = "very true") and categorized across three subscales based upon setting: Family (i.e., in the home), Service System (i.e., parental engagement with service providers), and Community/Political (i.e., parental advocacy on behalf of all children at a community policy-making level). As described above, Koren and colleagues (1992) found good internal consistency and acceptable-to-good test-retest reliability on all subscales.

Parent Background Information

This self-report survey assesses information related to caregiver demographics (e.g., age, sex, ethnicity), family characteristics (e.g., marital status, household size), and the caregiver and children's previous use of mental health services. See Appendix D for a copy of this survey.

Parental Attitudes Toward Psychological Services Inventory (PATPSI)

The PATPSI (Turner, 2012; Appendix B) is a 21-item self-report measure that assesses caregivers' attitudes regarding outpatient mental health services. Items are rated on a 6-point scale ranging from 0 ("Strongly Disagree") to 5 ("Strongly Agree"), and responses are used to calculate both a total scale score and three subscale scores of Help-Seeking Attitudes (i.e., caregivers' recognition of mental health services as a legitimate response to psychological problems), Stigmatization (i.e., caregivers' concerns about external negative evaluation as a result of seeking mental health services), and Help-Seeking Intentions (i.e., caregivers' stated propensity to seek mental health services if needed). Exploratory and confirmatory factor analyses of the PATPSI have supported its three-factor structure and indicated its internal

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consistency to be in the acceptable range for the Help-Seeking Attitudes subscale ($\alpha = .70$), in the good range for the Stigmatization ($\alpha = .88$) and Help-Seeking Intentions ($\alpha = .89$) subscales, and in the excellent range for its total scale score ($\alpha = .90$; Turner, 2012). Given the long-theorized relationship between caregiver empowerment and service engagement (e.g., Dunst et al., 1994; Graves & Shelton, 2007), as well as the PATPSI's status as the only existing measure for examining caregivers' help-seeking attitudes and intentions toward mental health services (Chang, 2016), the PATPSI was identified as a suitable candidate for examining the FES' convergent validity in this investigation. For the current study, PATPSI alphas were as follows: Help-Seeking Attitudes $\alpha = .79$ (acceptable range), Help-Seeking Intentions $\alpha = .65$ (questionable range), and Stigmatization $\alpha = .85$ (good range; George & Mallery, 2013).

Parent Engagement in Evidence-Based Services (PEEBS)

The PEEBS (Chang, 2016; Appendix C) is a 66-item questionnaire that assesses a variety of behavioral determinants underlying caregivers' intentions for using evidence-based youth mental health treatments. All items are rated on a five-point scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree"). The PEEBS was the primary questionnaire of interest for the larger psychometric study from which this investigation will draw its data (Choy, 2020). Within that study, an EFA identified the PEEBS' factor structure as including five subscales of Evidence-Informed Action (i.e., caregivers' direct intentions to pursue evidence-based treatments for their children), Perceived Behavioral Control (i.e., caregivers' subjective perception of their ability to engage in their children's mental health treatment), Subjective Norms (i.e., caregivers' values placed on referencing community resources to help them choose their children's mental health treatments), Knowledge (i.e., caregivers' perceived knowledge about accessing both general and research-based mental health treatments), and Perceived Treatment Barriers (i.e.,

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logistical challenges that might prevent caregivers from seeking treatment for their children).

Although the PEEBS does not directly measure empowerment, its focus on behavioral determinants of mental health service engagement is conceptually related to the FES; thus, the PEEBS was included in the current study for convergent validity analyses. Given that this study drew data from Choy's (2020) psychometric examination of the PEEBS, subscales' internal consistencies herein match his and were found to be in the acceptable range for the Subjective Norms ($\alpha = .76$), Perceived Treatment Barriers ($\alpha = .72$), Knowledge ($\alpha = .73$), and Perceived Behavioral Control ($\alpha = .78$) subscales and in the good range for the Evidence-Informed Action subscale ($\alpha = .85$).

Procedure

Caregiver participants were recruited from 14 school and community events (e.g., public school family movie nights, Keiki Spring Fest at Wai'anāe District Park) between 2016 and 2018 for the larger aforementioned PEEBS psychometric investigation (Choy, 2020). The authors of that study contacted event supervisors for permission to solicit participants at each event, and once approved, they and/or trained undergraduate research assistants attended the events to recruit caregivers in-person. All caregivers were informed that participation was voluntary and confidential, were briefed about the study rationale (i.e., to further scientific understanding of caregivers' beliefs about youth mental health services), and signed an informed consent form prior to participation (see Appendix E). Each participant completed a paper assessment battery, which was sequenced as follows: first, the Parent Background Information form; second, the PEEBS questionnaire; and third and fourth, in randomized order, the FES and PATPSI. Packets were reviewed upon return to ensure completion, and participants were prompted to complete any missing items unless those were deliberately left blank. Participants received a small

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compensation package (i.e., school supplies) for completing the study. All procedures were approved by the University of Hawai'i at Mānoa Human Studies Program (i.e., CHS #23735; February, 2016).

Analytic Strategy

Data Preparation and Integrity

For the larger PEEBS psychometric investigation, all data were double-entered by two research assistants working independently, then cross-checked and validated by that study's principal investigator. A small number of data entry inconsistencies were identified and corrected, and no impossible values (i.e., values exceeding minimum and maximum scores for each variable) were found in the data. The finalized data set was exported from Microsoft Excel into IBM Statistical Package for the Social Sciences (SPSS; Version 25; SPSS, Inc., 2015) for descriptive analyses. Regarding data integrity for the current investigation, I examined the distributional properties (i.e., means, standard deviations, skewness, kurtosis) of the identified FES scales to assess for issues that could impact the performance of my planned analyses. In alignment with guidelines offered by George & Mallery (2013), skewness and kurtosis values between -2.0 and 2.0 were interpreted to represent that the data normality was acceptable. To further assess normality, I performed visual inspection of the data via histograms and Q-Q plots. Extreme values were formally identified using the SPSS box plot function. I addressed missing data using the full information maximum likelihood (FIML) method in Mplus Version 8.8 (Muthén & Muthén, 2022). Maximum likelihood approaches use all available data to identify the parameter values that have the highest probability of producing the sample data, and are a widely recommended method of addressing missing data due to their ability to produce unbiased

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estimates with both missing completely at random and missing at random data (Baraldi & Enders, 2010).

Power

There is no standard consensus for determining adequate sample size for a CFA; however, commonly cited guidelines include suggestions to recruit 5 - 10 participants per variable (Floyd & Widaman, 1995) and to include at least 200 participants for any structural equation modeling-type analysis (Boomsma, 1985). Based upon these guidelines, my final sample size of 354 caregiver assessment batteries (i.e., excluding six cases for which FIML could not be applied due to no non-missing data) was determined to be an adequate sample for a CFA of the 34-item FES. Regarding aim three, previous research focused on the PEEBS has found it to have moderate to strong convergent validity with the FES and PATPSI (Chang, 2016; Choy, 2020). Following this reasoning, and in line with my hypothesis that the FES would show good convergent validity with the PEEBS and PATPSI, I estimated required sample size for aim three using G*Power 3.1 (Faul et al., 2009), with alpha set to .05, power set to .80, and a conservative effect size estimate of .20 (i.e., halfway between Cohen's [1988] benchmarks for .10 = small and .30 = medium). This calculation indicated a minimum sample size of 150, again suggesting that the proposed analyses were sufficiently powered with the available data.

Analytic Strategy

Descriptive Statistics. Demographic information, including caregiver age, sex, ethnicity, education level, marital status, household size, and income were analyzed and reported in order to describe the participant sample. Additionally, overall descriptive statistics (e.g., mean, range, and standard deviations) for caregivers' responses on the questionnaire battery were calculated and reported.

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Aim 1: Factorial Structure. I conducted four separate CFAs of the FES using Mplus 8.8 to examine the fit of four different models: (a) a single-factor (unidimensional) model, (b) a four-factor model (see Figure 1), (c) a three-factor model (see Figure 2), and (d) a three-factor bifactor model (see Figure 3). Following the procedures of past FES factor analytic research, the single-factor model was used to evaluate the unidimensionality of FES scores and served as a basis for comparison, rather than as a viable alternative model (c.f., Huscroft-D'Angelo et al., 2018; Lambert et al., 2020). The four-factor model examined Singh and colleagues' (1995) factors of Systems Advocacy, Knowledge, Competence, and Self-Efficacy, and the three-factor model evaluated the original authors' proposed Family, Service System, and Community/Political subscales (Koren et al., 1992). The three-factor bifactor model was tested to further probe the plausibility of the three subscales along which the FES is most often scored by partitioning item response variance into common sources and thereby accounting for variance attributable to a single underlying latent factor (i.e., general empowerment). Models were estimated using the weighted least squares with mean and variance adjustment (WLSMV) method, as this estimation method was specifically designed for ordinal observed data and is noted to provide less biased factor loading estimates than maximum likelihood estimation with robust error (MLR; another viable and popular method for factor estimation with categorical data; Li, 2016). Following model estimation, factor loadings were examined to ensure that items adequately and significantly loaded onto hypothesized factors. Researchers have proposed a variety of cutoffs at which items should ideally load to be retained on their respective factors (i.e., ranging from 0.3 to 0.7; c.f. Floyd & Widaman, 1995; Hair et al., 2019; Tavakol & Wetzels, 2020); however, for the current investigation, prioritization was given to *p*-values over the factor loadings alone, as the dual loadings in bifactor models (i.e., general and specific factor) complicate decision-

making about item retention, and a small loading is not necessarily indicative of a poor fit if the item's standard error is also proportionately small (K. Hayashi, personal communication, May 16, 2023). Each model's goodness of fit was evaluated using the Comparative Fit Index (CFI; Bentler, 1990), Standardized Root Mean Square Residual (SRMR; Hu & Bentler; 1999), and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990). Per benchmarks set by Hu and Bentler (1999), models were considered close-fitting if they yielded a CFI > .95, a SRMR < .08, and a RMSEA < .06, and acceptable if they yielded a CFI > .90, a SRMR < .10, and a RMSEA < .08. The chi-square (χ^2) statistic was also calculated and reported; however, χ^2 was not formally considered for evaluating model fit, as prevailing advice suggests that it is overly sensitive to model complexity (e.g., χ^2 value decreases when parameters are added to the model) and sample size (e.g., increased risk of type I errors in larger samples; Jöreskog and Sörbom, 1993). Given the nested nature of the examined models (i.e., unidimensional under all other models; three-factor model under the three-factor bifactor model), χ^2 difference testing was conducted using the DIFFTEST function in Mplus Version 8.8 (Muthén & Muthén, 2022) to compare the relative fit of the four-factor, three-factor, and three-factor bifactor models.

Aim 2: Reliability. Given that the bifactor three-factor model demonstrated the best fit to the data, I calculated coefficient omega (ω ; McDonald, 1999) and omega hierarchical (ω_h ; Zinbarg et al., 2005) for the FES General scale and each of the three subscales (i.e., Family, Service System, Community/Political). Coefficient omega is a method of computing reliability that does not depend upon an assumption of uncorrelated item errors (Cho & Kim, 2014), and it is considered a superior reliability indicator in cases where the Cronbach's alpha assumption of tau-equivalence (i.e., equal factor loadings for all items) is violated, as is often the case with psychological scales (Deng & Chan, 2017; Dunn et al., 2014; Trizano-Hermosilla, & Alvarado,

2016; Zhang & Yuan, 2016). As described above, omega hierarchical as calculated for the general factor in a bifactor model represents the percentage of reliable total score variance attributable to individual differences on the identified general latent factor. When calculated for a specified subscale, omega hierarchical represents the proportion of reliable score variance of that subscale score after partitioning out variance attributable to the general factor (Reise et al., 2013). Although there are no commonly cited qualitative benchmarks for omega interpretation, McDonald (1999) asserts that under conditions in which the assumptions for Cronbach's alpha are met (i.e., tau-equivalence), alpha and omega estimates should be the same. Furthermore, both Huscroft-D'Angelo and colleagues (2018) and Lambert and colleagues (2020) reference alpha benchmarks for their qualitative interpretation of omega coefficients in their respective FES psychometric papers. Acknowledging the imperfect match of these benchmarks and the criticisms of qualitative cut-offs more broadly (e.g., Taber, 2018), I chose to reference alpha benchmarks to provide a provisional descriptive context for my omega coefficients. In line with George & Mallery's (2013) recommended conventions, coefficients of $< .50$, $\geq .50$, $\geq .60$, $\geq .70$, $\geq .80$, and $\geq .90$ were considered unacceptable, poor, questionable, acceptable, good, and excellent, respectively.

Aim 3: Convergent Validity. I conducted zero-order bivariate Pearson product correlations to examine convergent validity patterns between the identified FES general and three subscale scores, PEEBS total and subscale scores, and PATPSI total and subscale scores. Cohen's (1988) guidelines for r were used to interpret small ($r \leq .10$), medium ($.10 < r \leq .30$), and large ($r \geq .50$) effect sizes. Empowerment has been theoretically linked to treatment factors such as behavioral engagement and attitudes; however, empirical relationships between these constructs have not been thoroughly explored. Therefore, I anticipated significant, positive, and

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small-to-medium sized correlations between FES scores and: (a) the four positively-valenced PEEBS subscale scores (i.e., Evidence-Informed Action, Perceived Behavioral Control, Subjective Norms, and Knowledge) and (b) the two positively-valenced PATPSI subscale scores (i.e., Help-Seeking Intentions and Help-Seeking Attitudes). I also anticipated significant, negative, and small-to-medium sized correlations between FES scores and: (a) the PEEBS Perceived Treatment Barriers subscale and (b) PATPSI Stigmatization subscale scores.

Results

Data Integrity

Regarding data integrity analyses, FES total and subscale minimum values, maximum values, means, standard deviations, skewness, kurtosis, and number of statistical outliers are presented in Table 2. A total of one, three, three, and zero outliers were identified for the FES General scale and Family, Service System, and Community/Political subscales, respectively. Given that these outliers were not the result of impossible values and appeared to represent natural variance within the participant sample, they were kept intact for all analyses. Skewness and kurtosis values fell in the acceptable range for all scales, although the Family subscale skewness value indicated a moderate negative skew for that data. Visual inspection of the FES data via Q-Q plots and histograms likewise indicated a largely symmetrical data pattern for the General scale, a moderate negative skew for the Family subscale, and slight negative and positive skews for the Service System and Community/Political subscales, respectively.

As described above, missing data for Aims 1 and 2 were addressed using the FIML method in MPlus Version 8.8 (Muthén & Muthén, 2022). Mplus analyses indicated that six of the 360 caregiver response sets (i.e., 1.7%) had no non-missing values on the FES (i.e., zero items on the FES were completed); thus, these participants' data were excluded and the final

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sample size for the factor analyses was 354 participants. Missing data levels across the 354 included FES measures were as follows: (a) 326 (92.1%) had no missing items, 19 (5.4%) had only one missing item, and nine (2.5%) had two or more missing items.

Aim 1: Factorial Structure

Four separate CFAs were conducted using Mplus Version 8.8 (Muthén & Muthén, 2022) to compare the fit of collected FES data to (a) a single-factor (unidimensional) model, (b) a four-factor model based on Singh et al.'s (1995) solution, (c) a three-factor model based on Koren and colleagues' (1992) proposed scoring system, and (d) a three-factor bifactor model. The results of these CFAs are discussed below, with particular attention to comparative fit indices as indicators of model fit. As noted above, although I calculated the chi-square (χ^2) statistic and have reported each model's χ^2 value in Table 3, I did not consider this statistic as a formal indicator of fit due to its sensitivity to model complexity and sample size (Jöreskog and Sörbom, 1993).

Single-Factor (Unidimensional) Model

The unidimensional model did not fit the data acceptably, as indicated by the CFI (.866), SRMR (.089) and RMSEA (.104). All items loaded significantly onto the single factor (p -values $< .001$) and other than Item 1 ("I feel that I have a right to approve all services my child receives"; factor loading = 0.29), all factor loadings were greater than 0.4. These results suggest that despite the model's poor fit, there is a high degree of commonality across the FES items overall.

Four-Factor Model

The four-factor model provided an improved fit compared to the single-factor model ($\Delta\chi^2(6) = 341.20, p < .001$), and was an acceptable fit for the data based upon the CFI (.903), SRMR (.076), and RMSEA .089). All items loaded significantly onto their designated factors (p -

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values $< .001$), and with the exception of FES Item 1 (factor loading = 0.31), all loadings were high (> 0.5). The intercorrelations between factors were all large (Systems Advocacy and Knowledge $r = .81$, Systems Advocacy and Competence $r = .64$, Systems Advocacy and Self-Efficacy $r = .75$, Knowledge and Competence $r = .90$, Knowledge and Self-Efficacy $r = .91$, Competence and Self-Efficacy $r = .92$), suggesting poor discriminant validity between factors.

Three-Factor Model

The three-factor model likewise provided an improved fit compared to the single-factor model ($\Delta\chi^2(3) = 274.41, p < .001$). Furthermore, the three-factor model yielded improved CFI (.925), SRMR (.068) and RMSEA (.078) results, suggesting an acceptable fit to the FES data that was also statistically superior to that of the four-factor model. Similar to the four-factor model, all items on the three-factor model loaded significantly onto their hypothesized factors (p -values $< .001$), and all factor loadings apart from FES Item 1 (loading = 0.30) were 0.4 or higher. Notably, the intercorrelations between factors were again all large (Family and Service System $r = .93$, Family and Community/Political $r = .65$, Service System and Community/Political $r = .78$; Cohen, 1988), suggesting a likely common source of shared variance and poor discriminant validity between factors.

Three-Factor Bifactor Model

Given both the acceptable fit of the three-factor model to the data and the fact that the three-factor model can be considered as nested under the three-factor bifactor model (Reise, 2012), these two models were compared directly via χ^2 difference testing. Results indicated that the three-factor bifactor model provided an improved fit over the three-factor model ($\Delta\chi^2(31) = 291.81, p < .001$) and yielded superior fit indices (i.e., CFI = .941, SRMR = .058, RMSEA = .071) to all other models tested. Based upon the combination of these fit indices, I determined

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the three-factor bifactor solution to be the preferred model for this sample's FES data. All items loaded significantly onto the FES General factor (p -values $< .001$), and apart from Item 1 (loading = .29) and Item 8 ("I get in touch with my legislators when important bills or issues concerning children are pending."; loading = .38), all loadings were above .4. It is noteworthy that FES Item 1 also did not load adequately onto its designated factor in Koren and colleagues' (1992) original paper and did not load at .4 or higher on any factor in any of the tested models in the current study. Upon closer examination, I also found that Item 1 was the only individual FES item with a skewness value outside of the acceptable -2 to 2 range (i.e., item skewness = -2.13) and that caregivers in this sample overwhelmingly endorsed "very true" (77.5%) and "mostly true" (16.7%) responses for this item. In contrast, Item 8 did load strongly onto the Community/Political factor (loading = .65), suggesting that its low loading on the General factor is due to its stronger relation with the specific factor, rather than a poor fit with the model overall.

Item loadings for the specific factors were more variable, with most loadings being significant but small ($< .4$) and a majority of items (28 of 34) showing larger general than specific factor loadings (see Table 4 for full results). Given that Reise and colleagues (2010) highlight items' differential loadings on general versus specific factors as an indicator of their utility in measuring those respective constructs, implications of item-level loading patterns will be explicated more in the Discussion section below.

Aim 2: Reliability

I calculated omega and omega hierarchical estimates to assess the reliability of and unique variance associated with each factor of the prevailing bifactor model (see Table 5). As noted within the Methods section, I used qualitative interpretation conventions for alpha to

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provide some descriptive context for my omega coefficients given (a) the lack of established conventions for omega and (b) the relative comparability of these two reliability indices (see McDonald, 1999). Per these interpretative guidelines, the omega estimates for the General ($\omega = .971$), Family ($\omega = .937$), Service System ($\omega = .929$), and Community/Political ($\omega = .924$) factors all indicated reliability in the excellent range, per standard alpha interpretation guidelines (George & Mallery, 2013). Although the three-factor and four-factor models did not fit this data as well as the bifactor model did, I also computed omega for both of those models' subscales to allow for comparisons with past studies' reliability findings. Omega estimates fell in the lower excellent range for all subscales of the three-factor model (Family $\omega = .932$, Service System $\omega = .915$, Community/Political $\omega = .922$). For the four-factor model, omega fell in the lower excellent range for the Systems Advocacy ($\omega = .901$), Knowledge ($\omega = .928$), and Competence ($\omega = .911$) subscales and in the lower good range for the Self-Efficacy subscale ($\omega = .818$).

The omega hierarchical (ω_h) estimate for the General factor was .893, indicating that approximately 89.3% of the variance in overall FES scores can be attributed to participants' individual differences on a general empowerment latent factor. By contrast, omega hierarchical estimates for the Family ($\omega_h = .175$), Service System ($\omega_h = .033$), and Community/Political ($\omega_h = .412$) subscales indicated comparatively small contributions of these proposed constructs to their respective subscales' score variances. After partitioning out variance associated with the general empowerment latent factor, about 17.5% of the Family subscale's, 3.3% of the Service System subscale's, and 41.2% of the Community/Political subscale's score variance could be attributed to their specified latent variables, respectively.

Aim 3: Convergent Validity

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Pearson product zero-order bivariate correlations were conducted to examine the relationships between all FES, PEEBS, and PATPSI scales (see Table 6).

In line with my hypotheses, the FES Family subscale showed positive and statistically significant correlations with the PEEBS Subjective Norms ($r = .14$), Knowledge ($r = .37$), Evidence-Informed Action ($r = .20$), and Perceived Behavioral Control ($r = .36$) subscales, as well as with the PATPSI Help-Seeking Intentions subscale ($r = .43$). Also as predicted, the FES Family subscale showed a statistically significant and negative correlation with the PATPSI Stigmatization subscale ($r = -.14$). Contrary to my hypotheses, however, the FES Family subscale scores showed no significant association with the PEEBS Perceived Treatment Barriers or PATPSI Help-Seeking Attitudes subscales.

Convergent validity patterns for the FES Service System subscale were similar, as the predicted positive and statistically significant correlations were identified with the PEEBS Subjective Norms ($r = .14$), Knowledge ($r = .40$), Evidence-Informed Action ($r = .16$), and Perceived Behavioral Control ($r = .40$) subscales, as well as with the PATPSI Help-Seeking Intentions subscale ($r = .43$). The FES Service System subscale also showed a statistically significant and negative correlation with the PATPSI Stigmatization subscale ($r = -.17$) in line with my expectations. Again contrary to my hypotheses, however, no significant associations were identified between the FES Service System subscale and the PEEBS Perceived Treatment Barriers or PATPSI Help-Seeking Attitudes subscales.

Regarding the FES Community/Political subscale, statistically significant correlations were found in the expected directions with the PEEBS Knowledge ($r = .38$) and Perceived Behavioral Control ($r = .15$) subscales, as well as with the PATPSI Help-Seeking Intentions subscale ($r = .27$). No significant associations were identified between the FES

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Community/Political subscale and the PEEBS Subjective Norms, PEEBS Evidence-Informed Action, or PATPSI Stigmatization subscales, and in direct opposition to my hypotheses, FES Community/Political scores showed a significant positive association with PEEBS Perceived Treatment Barriers score ($r = .27$) and a significant negative association with PATPSI Help-Seeking Attitudes scores ($r = -.21$).

Finally, the FES General scale scores' convergent validity patterns aligned with my predictions with regard to their associations with the PEEBS Knowledge ($r = .45$), Evidence-Informed Action ($r = .14$), and Perceived Behavioral Control ($r = .31$) subscales, as well as with the PATPSI Help-Seeking Intentions subscale ($r = .42$). No significant associations were identified between the FES General scores and the PEEBS Subjective Norms, PATPSI Help-Seeking Attitudes, or PATPSI Stigmatization subscales, and in contrast to my hypothesis, a significant positive correlation was found between the FES General factor and the PEEBS Perceived Treatment Barriers factor ($r = .12$).

Discussion

The current study examined the psychometric properties of the FES with three primary aims: (a) examining the extent to which the competing four-factor (Singh et al., 1995), three-factor (Koren et al., 1992), or three-factor bifactor (Huscroft-D'Angelo et al., 2018; Lambert et al., 2020) model fit with the current sample's data, (b) assessing the reliability of the prevailing factor solution, and (c) testing the FES's convergent validity patterns with measures of caregivers' general attitudes toward mental health services (PATPSI; Turner, 2012) and purported behavioral determinants for pursuing evidence-based psychological interventions for their children (PEEBS; Chang, 2016). This study was conducted during a period of renewed interest in the FES's structure after an over 20-year gap between factor analytic studies (i.e.,

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VanNess-Knolls & Tighe, 1996 to Huscroft-D'Angelo et al., 2018) and amidst ongoing calls to improve our understanding of empowerment's correlates within healthcare contexts (Acuña Mora et al., 2022). It is also the first study to examine the FES's psychometric properties with a community sample of predominantly Asian, Pacific Islander, and multiracial caregivers, whereas previous studies have included over 70% non-Hispanic White participants (Guerrero et al., 2023). Discussion below will therefore center on how this study's psychometric findings compare with those of previous research, interpretations and implications of these results, strengths and limitations of this study, and potential directions for future work on improving our field's understanding and measurement of family empowerment.

Summary and Interpretations of Findings

Aims 1 and 2: Factor Structure and Reliability

In line with my hypothesis, my analyses indicated that the three-factor bifactor model provided the best fit to this participant sample's data. These results align with the most recent FES psychometric studies published by Huscroft-D'Angelo and colleagues (2018) and Lambert and colleagues (2020), thereby strengthening evidence that score variance on the FES represents a combination of both broad and domain-specific (i.e., Family, Service System, and Community/Political) empowerment. Of note, my fit indices also indicated that both the three-factor model proposed by Koren and colleagues (1992) and the four-factor model identified by Singh and colleagues (1995) provided acceptable fits to this sample's data, whereas the latter model yielded acceptable fits in neither Huscroft-D'Angelo et al. (2018) nor Lambert et al.'s (2020) comparative analyses. Importantly, however, the high inter-factor correlations I found on both the three-factor and four-factor models suggested poor discriminant validity between factors and further highlighted the high degree of commonality between FES items.

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As described in the Results section, all but two FES items demonstrated statistically significant loadings of .4 or higher on the bifactor model's General factor, suggesting that most items are strong measures of participants' individual differences on an overall empowerment variable. Of the two low-loading items, one (Item 8) instead loaded strongly onto the Community/Political factor, indicating higher utility in measuring that specific level of empowerment compared to general empowerment. The other item (Item 1), however, also failed to load onto its specified factor in Koren and colleagues' (1992) work and showed poor loadings across all tested models and a highly skewed response distribution (i.e., 77.5% of caregivers endorsed the highest level of agreement) in this study. As such, one potential interpretation for Item 1's poor General factor loading is that it assesses such a universally held belief among this sample's caregivers that it is not particularly useful in measuring individual differences in empowerment. Neither Huscroft-D'Angelo and colleagues (2018) nor Lambert and colleagues (2020) reported on the item loadings for their prevailing bifactor models; however, each set of authors did indicate that all items showed high ($>.5$) loadings on the three-factor model, suggesting that Item 01 performed better with their sample than with the current sample or Koren and colleagues' (1992) original participants.

Likewise consistent with my hypotheses and closely aligned with results from recent FES psychometric studies (Huscroft-D'Angelo et al., 2018; Lambert et al., 2020), I found the FES General scale and all three specific subscales to demonstrate excellent reliability as indicated by coefficient omega. Omega estimates for the bifactor model were slightly higher than those for the three-factor and four-factor subscales, which all fell in the low excellent to high good range (see Table 5). Although direct comparisons between alpha and omega lack precision, omega coefficients for the three-factor and four-factor models' subscales were all superior to the

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corresponding alpha values reported in those models' original papers, which might be due in part to the limitations of alpha as applied to scales that do not meet tau-equivalence assumptions. Nonetheless, both alpha and omega coefficients followed the same qualitative pattern across studies (i.e., the three-factor Family, Service System, and Community/Political subscales fell in the same range; the four-factor Systems Advocacy, Knowledge, and Competence subscales fell one qualitative range above the Self-Efficacy subscale), suggesting that the various proposed subscales showed similar reliability across populations and that Singh and colleagues' (1995) Self-Efficacy subscale is the weakest scale in terms of reliability.

Omega hierarchical coefficients for the bifactor model were likewise similar to those identified in recent psychometric papers, albeit with the General factor accounting for an even higher proportion of unique and reliable FES score variance within this sample. When comparing ω_h results across studies at the subscale level, each specific latent factor in this study accounted for relatively less FES score variance than was identified in Huscroft and colleagues' (2018) or Lambert and colleagues' (2020) publications (see Table 5), and the Service System latent factor contributed particularly little to this sample's score variance. Given the multiple demographic (e.g., predominantly Asian American versus White American caregivers) and level-of-care (i.e., community caregivers versus those receiving school-based or therapeutic residential services) differences between the current study's participants and those referenced in the Huscroft-D'Angelo and Lambert publications, it is difficult to isolate what might be driving the more unidimensional response patterns for this sample. In line with broader patterns from contemporary FES psychometric studies, though, the Community/Political subscale continued to demonstrate the highest degree of unique variance among the three subscales, again suggesting

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that it measures a more distinct facet of empowerment compared to the Family and Service System subscales.

Taking all of the above into account, results suggest that the FES's internal structure and reliability are quite comparable between this community sample of racially diverse caregivers and the predominantly White caregivers represented in prior studies. Interestingly, all of the competing models tested provided at least an acceptable fit to this sample's data and yielded good or better reliability as assessed by coefficient omega; however, the bifactor model's superior fit indices and the high degree of unique variance accounted for by the General factor suggests that there may be value in considering the use of an overall FES score in future practice.

Aim 3: Convergent Validity

Convergent validity was explored through Pearson product zero-order bivariate correlations between the FES, PATPSI, and PEEBS subscale scores. Across 24 subscale-by-subscale analyses, I hypothesized overall small to medium magnitude relationships, including 18 significant and positive bivariate correlations (i.e., each FES subscale with the PEEBS Subjective Norms, Knowledge, Evidence-Informed Action, and Perceived Behavioral Control subscales; each FES subscale with the PATPSI Help-Seeking Intentions and Help-Seeking attitudes subscales) and six significant and negative bivariate correlations (i.e., each FES subscale with the PEEBS Perceived Treatment Barriers and the PATPSI Stigmatization subscale). Fifteen of my 24 hypothesized relationships were significant in the direction predicted, two were found to be significant in the opposite direction of my predictions, and seven bivariate correlations yielded no significant relationships. To date, one other study (Chang, 2016) has examined the relationships between a unique sample's FES, PATPSI, and PEEBS scores using a sample of 634 University of Hawai'i undergraduate students; however, given that study's focus

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on the PEEBS' psychometric development and subsequent major revisions to the PEEBS subscales, opportunities for correlational comparisons with that measure are somewhat limited.

With regard to the FES Family subscale, significant and positive associations were identified as expected with the PEEBS Subjective Norms, PEEBS Knowledge, PEEBS Evidence-Informed Action, PEEBS Perceived Behavioral Control, and PATPSI Help-Seeking Intentions subscales. Significant and negative associations were identified as expected with the PATPSI Stigmatization subscale, and no significant relationships were observed between the FES Family subscale and the PEEBS Perceived Treatment Barriers or PATPSI Help-Seeking Attitudes subscales. These results only partially align with Chang's (2016) work, which found similar relationships between the FES Family subscale and the PATPSI Help-Seeking Intentions and Stigmatization subscales but also noted a small, significant, and positive correlation between the FES Family and PATPSI Help-Seeking Attitudes subscales.

For the FES Service System subscale, significant and positive associations were again identified as expected with the PEEBS Subjective Norms, PEEBS Knowledge, PEEBS Evidence-Informed Action, PEEBS Perceived Behavioral Control, and PATPSI Help-Seeking Intentions subscales. Significant and negative associations were identified as expected with the PATPSI Stigmatization subscale, and no significant relationships were observed between the FES Service System subscale and the PEEBS Perceived Treatment Barriers or PATPSI Help-Seeking Attitudes subscales. Interestingly, Chang (2016) found a small, significant, and negative correlation between the FES Service System and PATPSI Help-Seeking Attitudes subscales that was absent from my results but runs in stronger opposition to my expectation that help-seeking attitudes would be associated with empowerment at the service system level.

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The FES Community/Political subscale demonstrated the results most contrary to my predictions. Significant and positive associations were identified as expected with the PEEBS Knowledge, PEEBS Perceived Behavioral Control, and PATPSI Help-Seeking Intentions subscales, and no significant relationships were identified between the FES Community/Political subscale and the PEEBS Subjective Norms, PEEBS Evidence-Informed Action, or PATPSI Stigmatization subscales. Strikingly, and in opposition to my hypotheses, the FES Community/Political subscale showed a significant and positive correlation with the PEEBS Perceived Treatment Barriers subscale and a significant and negative correlation with the PATPSI Help-Seeking Attitudes subscale. The reasons for these unexpected relationships are not entirely clear; however, the unique performance of the Community/Political subscale in this regard does align with omega hierarchical results indicating it measures a somewhat different construct than the Family or Service System subscales. Regarding the association between the FES Community/Political subscale and the PEEBS Perceived Treatment Barriers subscale, Chang (2016) likewise found a small, positive, and significant correlation ($r = .21$) between the FES Community/Political subscale and the corresponding PEEBS Barriers to Treatment Engagement subscale (i.e., the previous iteration of the Perceived Treatment Barriers subscale, containing more items but with generally similar content). One possible explanation for this recurring observation is that caregivers who perceive a higher degree of inaccessibility or cultural misattunement of existing mental health services might be more motivated to engage in community-level activism to address these issues. Such a phenomenon would align with Koren and colleagues' (1992) suggestion that difficulty obtaining services on an individual level can be a galvanizing force for community and political involvement, and would reflect the way that consumer dissatisfaction catalyzed the original movement to integrate family empowerment into

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mental health services (DeChillo et al., 1994). The negative association between the Community/Political and PATPSI Help-Seeking Attitudes subscales is more challenging to contextualize, but also aligns with Chang's (2016) results ($r = -.14$). Qualitative examination of the Help-Seeking Attitudes items (all of which are reverse-scored) highlights recurring language that values caregivers' strong will and minimizes the necessity of professional services (e.g., "Strong willed parents can handle problems without professional help," "Strong willed individuals can handle emotional or behavior problems without needing professional help,"). One could hypothesize that caregivers who perceive themselves as strong willed and effective also consider themselves capable of political advocacy actions; however, this is ultimately speculation, and it would be most beneficial to attempt to replicate these results and assess other factors (e.g., measurement error) that might drive unexpected correlations.

Looking thematically across the three FES subscales, it is noteworthy that the Family and Service System subscales, but not the Community/Political subscale, showed positive relationships with the PEEBS Subjective Norms and Evidence-Informed Action subscales and negative relationships with the PATPSI Stigmatization subscale. One potential explanation for this is that the language in the Subjective Norms and Evidence-Informed Action items explicitly references individual-level treatment (e.g., "Treatments endorsed by my child's pediatrician are important to me," "My child's therapist should always use researched treatments before trying other options"), thereby aligning more closely with empowerment at the family and service system levels than at the broader community or political level. Similarly, with regard to the PATPSI Stigmatization scale, one possibility might be that individual-directed stigma is less salient to caregivers engaging in advocacy at the policy-making level compared to those managing personal mental health concerns at the family and service system levels.

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Given that the FES General factor includes all 34 items from the FES, its associations with the PEEBS and PATPSI subscales can be thought of as an amalgamation of the three FES specific factors' associations with these same constructs. Accordingly, the FES General factor was not significantly associated with the PEEBS Subjective Norms or PATPSI Stigmatization subscales (which showed small, significant correlations with the Family and Service System subscales but not with the Community/Political subscale) or with the PATPSI Help-Seeking Attitudes subscale (which showed a small, significant correlation with the Community/Political subscale but not with the Family or Service System subscales). The FES General scale shared the Community/Political subscale's negative association with the PEEBS Perceived Treatment Barriers subscale but not with the PATPSI Help-Seeking Attitudes subscale; this relates to the relative magnitude of the FES subscales' associations with these constructs (e.g., the Community/Political items were so strongly associated with the Perceived Treatment Barriers items that they pulled the larger scale's correlation to significance, as well). Similarly, the relationships between the PEEBS Evidence Informed Action subscale and the FES Family and Service System subscales were strong enough that this significant relationship was maintained at the General level, despite the absence of a significant relationship between the Evidence-Informed Action subscale and the Community/Political subscale. Across all correlations assessed, three convergent validity indicators – the PEEBS Knowledge, PEEBS Perceived Behavioral Control, and PATPSI Help-Seeking Intentions subscales – were found to have significant relationships with all three FES subscales and yielded the largest magnitude correlations with the FES General factor.

When considering Fumagalli and colleagues' (2015) assertion that knowledge and skills (arguably aligned with Knowledge and Perceived Behavioral Control) are necessary

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prerequisites for empowerment, which is in turn a prerequisite for active behaviors (best approximated in this study by Help-Seeking Intentions), it makes sense that the three subscales identified above showed the strongest relationships with all measured facets of empowerment. On the other hand, despite Fumagalli and colleagues' (2015) argument that attitudes/motivation are also a prerequisite for empowerment, the PATPSI Help-Seeking Attitudes subscale yielded none of the anticipated positive correlations with FES subscales, and in fact was negatively associated with the Community/Political scale. The reasons for these unforeseen findings are not entirely clear and could potentially include both measurement and conceptual factors. Regarding the former point, the Help-Seeking Attitudes subscale of the PATPSI is unique in that it is the only fully reverse-scored scale examined in this study. Although reverse-scored items are noted to have some methodological benefit in disrupting participants' response-style bias (Nunally, 1978; Paulhus, 1991), they have also been described as problematic due to their tendency to compromise response variance, test dimensionality, and scale reliability and validity, particularly among participants of older age, limited English language comprehension, and lower educational attainment (Rodebaugh et al., 2011; Suárez-Alvarez et al., 2018). Thus, while these results could be interpreted to suggest that help-seeking attitudes are of limited relevance to caregivers' empowerment for seeking services, it is also possible that methodological qualities of the PATPSI Help-Seeking Attitudes subscale contributed to its unexpected convergent validity patterns with FES scales across both this work and Chang's (2016) study.

Despite some unsupported predictions, overall results for Aim 3 suggested that the FES constructs are related to key behavioral determinants of mental health service utilization, with particularly strong relationships noted between FES scores and measures of knowledge, perceived behavioral control, and help-seeking intentions. Accordingly, the FES appears to be a

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reasonably valid measure of families' empowerment for seeking youth mental health services within this newly studied community sample of predominantly Asian, Pacific Islander, and multiethnic caregivers.

Strengths and Limitations

The current study provides a replicative, in-depth psychometric analysis of an underused assessment of caregiver empowerment, and is noteworthy for doing so with more sophisticated statistical approaches (e.g., use of omega rather than alpha for psychological scale reliabilities) and a more diverse participant sample than are present in most previous research. With regard to the latter point, the call to investigate the FES' psychometric properties and cultural appropriateness with diverse families has persisted for nearly 30 years, and this study is the first to answer that call with a participant sample composed largely of Asian and Pacific Islander caregivers. Although Asians were the fastest growing ethnic denomination in the United States between 2010 and 2019 (Budiman & Ruiz, 2021), they remain one of the most under-studied populations in mental research and experience striking rates of service underutilization (Jang et al., 2019; Whitney & Peterson, 2019). Similarly, Pacific Islanders were found to be three times less likely to receive mental health services than non-Hispanic Whites, despite being the United States' third fastest growing ethnic group and demonstrating elevated levels of youth suicidality (Budiman & Ruiz, 2021; Office of Minority Health Resource Center, 2021). Given those gross disparities, this study's findings regarding the FES's performance in measuring family empowerment among Asian and Pacific Islander caregivers offer both promising insights and additional questions about how to better serve those populations.

Despite this study's noted strengths, however, there are also methodological limitations worthy of attention here and within future works. One such limitation is that this sample differed

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from prior studies' samples across multiple factors (i.e., race, geographic, clinical versus community sampling), thereby making it difficult to isolate the source of psychometric differences between these and other findings. For example, might the higher degree of FES unidimensionality observed here be uniquely related to Asian caregivers' experience of empowerment, or is this instead attributable to the use of a community rather than clinical sample? Similarly, it is unclear why all competing models (three-factor, four-factor, bifactor) provided statistically acceptable fits with this sample's data, when the four-factor model has not yielded an acceptable fit in other recent studies (Huscroft-D'Angelo et al., 2018; Lambert et al., 2020). Relatedly, the Parent Background Information form used for this study offered only broad racial categories aligned with those used by the U.S. Census Bureau (e.g., Black, White, Asian, etc.). Such aggregate categorization has been deemed problematic given mental health research's disproportionate treatment of Asians – an exceptionally diverse continent of people – as a racial monolith (Hasnain et al., 2020), thereby failing to examine a variety of cultural, linguistic, socioeconomic, and acculturation differences that influence service access and outcomes. Yet another consideration relates to the potential that individuals who agreed to complete the questionnaires for this study differed from those who declined on relevant characteristics (i.e., self-selection or volunteer bias; Tripepi et al., 2010). If, for example, individuals who invested their time in this study experienced higher levels of empowerment or lower levels of stigma than their community peers, that would reduce the generalizability of these findings.

Another limitation of this study relates to its archival nature and the unclear psychometric quality of the convergent validity measures utilized. Of particular note, the PATPSI Help-Seeking Attitudes subscale did not demonstrate any of the expected relationships with FES subscales in this study, was likewise inconsistent in its relationships with FES constructs in

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Chang's (2016) work, and is subject to potential methodological criticism given its use of reverse-coded items as well as its relatively poor internal consistency ($\alpha = .70$; lower end of the acceptable range) in Turner's (2012) original study. As such, it is challenging to make conclusive inferences about the association between help-seeking attitudes and empowerment as assessed by this study.

Implications and Future Directions

There exist a number of future directions for FES research to both address this study's methodological limitations and to further develop our understanding and measurement of consumer empowerment in diverse populations. First, subsequent studies could ideally improve upon this one by increasing measurement specificity around demographic and clinical characteristics in a larger sample, thereby generating adequate detail and statistical power to meaningfully examine group-level differences (e.g., ethnic subcategories, generational status, history of service) and isolate factors that most strongly influence changes in the FES' structure and convergent validity patterns. In addition, it is recommended that future research both re-assess the FES's convergent validity with the PATPSI and PEEBS and introduce additional convergent validity measures, toward the goals of strengthening correlational evidence through replication and better disentangling the degree to which the present findings represent limited association between attitudes and empowerment versus measurement problems with the PATPSI scale specifically. Complementary measures of caregivers' attitudes toward mental health services may be particularly valuable in pursuing the latter goal.

The above-described limitations notwithstanding, the FES overall demonstrated great potential for empowerment assessment with ethnically diverse caregivers in terms of its replicable factor structure, excellent subscale reliabilities, and convergent validity with several

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behavioral determinants of mental health service use. Although the bifactor model has demonstrated the best fit to FES data in two recent, consecutive publications (e.g., Huscroft-D'Angelo et al., 2018; Lambert et al., 2020), closer examination of the FES's dimensionality and sources of variance within this sample revealed a stronger common empowerment dimension than was observed in either of those past studies. Lambert and colleagues' (2020) argued that their results provided evidence for researchers and clinicians to consider using one overall FES score; by extension, the high proportion of composite score variance attributable to the General factor (i.e., 89.3%) and strikingly low proportions of unique variance contributed by the Family (17.5%) and Service System (3.3%) subscales in this sample could make an even stronger case for a unidimensional interpretation of the FES. As discussed within the Introduction, disparate scoring systems have hampered the comparability of prior FES research findings, and most existing studies have not discussed meaningful predictive or outcome differences at the subscale level. Given those trends, as well as the potential for reducing items (and thus clinical administration burden) in a more generalized measure, the possibility of a single-dimension FES is an appealing one. One complication in this regard is that across studies, the Community/Political subscale seems to measure a somewhat more unique facet of empowerment and does not yield the same convergent validity patterns as other subscales. Although the Community/Political subscale contributed relatively less unique variance in this study (i.e., 41.2%) compared to prior bifactor analyses (i.e., 74% in Huscroft-D'Angelo et al., 2018; 53% in Lambert et al., 2020), it may provide additive value and be worth retaining when caregivers' empowerment at the political advocacy level is of interest.

Looking beyond the factor structure and scoring system, the correlates of family empowerment identified in this study are particularly promising with regard to increasing

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families' service uptake. For example, in light of Ajzen's (1991) assertion that behavioral intentions are the single best predictor of actual behavior, the strong association between the PATPSI Help-Seeking Intentions subscale and all measured aspects of family empowerment might provide an approximation of the relationship between empowerment and actual service uptake. Repeated and longitudinal assessment of empowerment among families receiving mental health treatment could assist in clarifying the directionality of this relationship and identifying points for intervention to increase service uptake. If it were determined that empowerment predicted families' likelihood of successfully pursuing mental health services when necessary, quality improvement efforts might then entail strategies to deliberately increase empowerment among those who might otherwise underutilize care. Other benefits of more consistent empowerment measurement include heightened insight into its role in mental health service outcomes. To illustrate, Graves and Shelton (2007) conducted the only known examination of empowerment as a potential "active ingredient" in youth services and found that changes in family empowerment fully mediated the relationship between family-centered care and positive changes in child functioning. These results highlight the value of maintaining family empowerment as a guiding principle in youth systems of care, and provide compelling rationale to assess empowerment more thoroughly and regularly among families receiving services. My hope is that this study might contribute to such measurement efforts by providing support for the FES as a psychometrically sound measure of diverse caregivers' empowerment, evidence of its relationships with key behavioral determinants of service uptake, and nuanced considerations about the practicality of its competing scoring systems.

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PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Table 1

Participant Demographics

Characteristic	<i>n</i>	%
Sex		
Female	271	75.3
Male	87	24.2
Did not respond	2	0.6
Marital Status		
Single/Never married	48	13.3
Married/Domestic partnership	280	77.8
Separated	6	1.7
Divorced	23	6.4
Widowed	2	0.6
Did not respond	1	0.3
Education		
Less than high school	5	1.4
High school/GED	47	13.1
Vocational/Technical	17	4.7
Some college	95	26.4
Bachelor's Degree	114	31.7
Master's Degree	62	17.2
Doctoral/Professional degree	19	5.3
Did not respond	1	0.3
Household Income		
Less than \$5,000	9	2.5
\$5,000 to \$11,999	15	4.2
\$12,000 to \$15,999	11	3.1
\$16,000 to \$24,999	13	3.6
\$25,000 to \$34,999	14	3.9
\$35,000 to \$49,999	29	8.1
\$50,000 to \$74,999	51	14.2
\$75,000 to \$99,999	53	14.7
\$100,000 or greater	145	40.3
Prefer not to respond	1	0.3
Don't know	15	4.2
Did not respond	4	1.1
Race/Ethnicity^a		
Asian	225	62.5
Native Hawaiian/Pacific Islander	112	31.1
Black	12	3.3
White	90	25.0
Hispanic/Latino	36	10.0
Multiracial	84	23.3

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Other	19	5.3
Did not respond	1	0.3

^aParticipants were able to endorse all racial categories with which they identified; thus, the total percentage is greater than 100. The multiracial category includes all participants who endorsed more than one racial category and is not mutually exclusive with those categories (e.g., a participant who self-identified as Asian and Black would be reflected in both of those categories and in the multiracial category).

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Table 2

Means and Normality Statistics for the Family Empowerment Scale

FES (Bifactor Model)	# of items	Min	Max	Mean	SD	Skewness	Kurtosis	Number of Outliers
General	34	60	170	129.51	19.71	-0.062	-0.168	1
Family	12	22	60	49.23	6.75	-0.558	0.306	3
Service System	12	23	60	48.89	6.95	-0.376	-0.027	3
Community/Political	10	10	50	31.39	8.58	0.158	-0.582	0

Note. All FES items are scored on a five-point scale ranging from 1 = Not True to 5 = Very True.

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Table 3

Confirmatory Factor Analysis Fit Indices (n = 354)

Model	$\chi^2(df)$	$\Delta\chi^2(df)$	CFI	SRMR	RMSEA
Single-factor	2543.81* (527)	--	0.866	0.089	0.104
Four-factor	1973.90* (521)	341.20* (6)	0.903	0.076	0.089
Three-factor	1645.66* (524)	274.41* (3)	0.925	0.068	0.078
Bifactor	1373.33* (493)	291.81* (31)	0.941	0.058	0.071

Note. $\Delta\chi^2$ was calculated using the DIFFTEST feature in Mplus Version 8.8 (Muthén & Muthén, 2022). The degrees of freedom were calculated as the difference in the number of degrees of freedom between the two models being compared.

* $p < .001$

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Table 4

Item Loadings for Three-Factor Bifactor Model

Family Empowerment Scale Item	Factor Loading (S.E.)	
	General	Specific
Factor 1 - Family		
02. When problems arise with my child, I handle them pretty well.	0.29* (0.07)	0.48* (0.04)
04. I feel confident in my ability to help my child grow and develop.	0.54* (0.04)	0.59* (0.04)
07. I know what to do when problems arise with my child.	0.51* (0.04)	0.44* (0.04)
09. I feel my family life is under control.	0.57* (0.04)	0.49* (0.05)
16. I am able to get information to help me better understand my child.	0.75* (0.03)	0.03 (0.05)
21. I believe I can solve problems with my child when they happen.	0.70* (0.03)	0.44* (0.04)
26. When I need help with problems in my family, I am able to ask for help from others.	0.68* (0.03)	0.17* (0.05)
27. I make efforts to learn new ways to help my child grow and develop.	0.38* (0.05)	0.17* (0.05)
29. When dealing with my child, I focus on the good things as well as the problems.	0.48* (0.04)	0.31* (0.05)
31. When faced with a problem involving my child, I decide what to do and then do it.	0.60* (0.03)	0.19* (0.05)
33. I have a good understanding of my child's disorders.	0.82* (0.02)	0.12* (0.04)
34. I feel I am a good parent.	0.77* (0.02)	0.36* (0.05)
Specific Factor 2 - Service System		
01. I feel that I have a right to approve all services my child receives.	0.72* (0.03)	0.37* (0.08)
05. I know the steps to take when I am concerned my child is receiving poor services.	0.58* (0.04)	-0.15* (0.05)
06. I make sure that professionals understand my opinions about what services my child needs.	0.58* (0.04)	0.31* (0.05)
11. I am able to make good decisions about what services my child needs.	0.75* (0.02)	-0.14* (0.05)
12. I am able to work with agencies and professionals to decide what services my child needs.	0.58* (0.04)	0.03 (0.05)
13. I make sure I stay in regular contact with professionals who are providing services to my child.	0.56* (0.04)	0.26* (0.05)
18. My opinion is just as important as professionals' opinions in deciding what services my child needs.	0.70* (0.03)	0.40* (0.05)
19. I tell professionals what I think about services being provided to my child.	0.46* (0.04)	0.40* (0.05)

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

23. I know what services my child needs.	0.64* (0.03)	-0.12* (0.05)
28. When necessary, I take the initiative in looking for services for my child and family.	0.52* (0.04)	0.01 (0.04)
30. I have a good understanding of the services system that my child is involved in.	0.83* (0.02)	-0.18* (0.05)
32. Professionals should ask me what services I want for my child.	0.62* (0.03)	0.40* (0.06)
Specific Factor 3 - Community/Political		
03. I feel I can have a part in improving services for children in my community.	0.64* (0.03)	0.35* (0.04)
08. I get in touch with my legislators when important bills or issues concerning children are pending.	0.67* (0.03)	0.65* (0.04)
10. I understand how the service system for children is organized.	0.74* (0.03)	0.43* (0.04)
14. I have ideas about the ideal service system for children.	0.78* (0.03)	0.48* (0.04)
15. I help other families get the services they need.	0.68* (0.03)	0.55* (0.04)
17. I believe that other parents and I can have an influence on services for children.	0.80* (0.02)	0.29* (0.04)
20. I tell people in agencies and government how services for children can be improved.	0.73* (0.03)	0.65* (0.04)
22. I know how to get agency administrators or legislators to listen to me.	0.47* (0.04)	0.66* (0.03)
24. I know what the rights of parent and children are under the special education laws.	0.73* (0.03)	0.41* (0.04)
25. I feel that my knowledge and experience as a parent can be used to improve services for children and families.	0.68* (0.03)	0.44* (0.04)

Note. $n = 354$. S.E. = standard error.

* $p < .01$

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Table 5

Omega and Omega Hierarchical Estimates for Competing Models

Model	Vincent (2023)		Huscroft-D'Angelo et al. (2018)		Lambert et al. (2020)	
	ω	ω_h	ω	ω_h	ω	ω_h
Three-Factor Bifactor						
General	.97	.89	.97	.76	.97	.84
Family	.94	.18	.94	.23	.94	.35
Service System	.93	.03	.93	.32	.96	.13
Community/Political	.92	.41	.93	.74	.91	.54
Three-Factor						
Family	.93	-	.94	-	.94	-
Service System	.92	-	.93	-	.96	-
Community/Political	.92	-	.93	-	.91	-
Four-Factor						
Systems Advocacy	.90	-	-	-	-	-
Knowledge	.93	-	-	-	-	-
Competence	.91	-	-	-	-	-
Self-Efficacy	.82	-	-	-	-	-

Note. Neither Huscroft-D'Angelo et al. (2018) nor Lambert et al. (2020) calculated omega for the four-factor model given its poor fit to their data.

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Table 6

Convergent Validity Bivariate Correlations

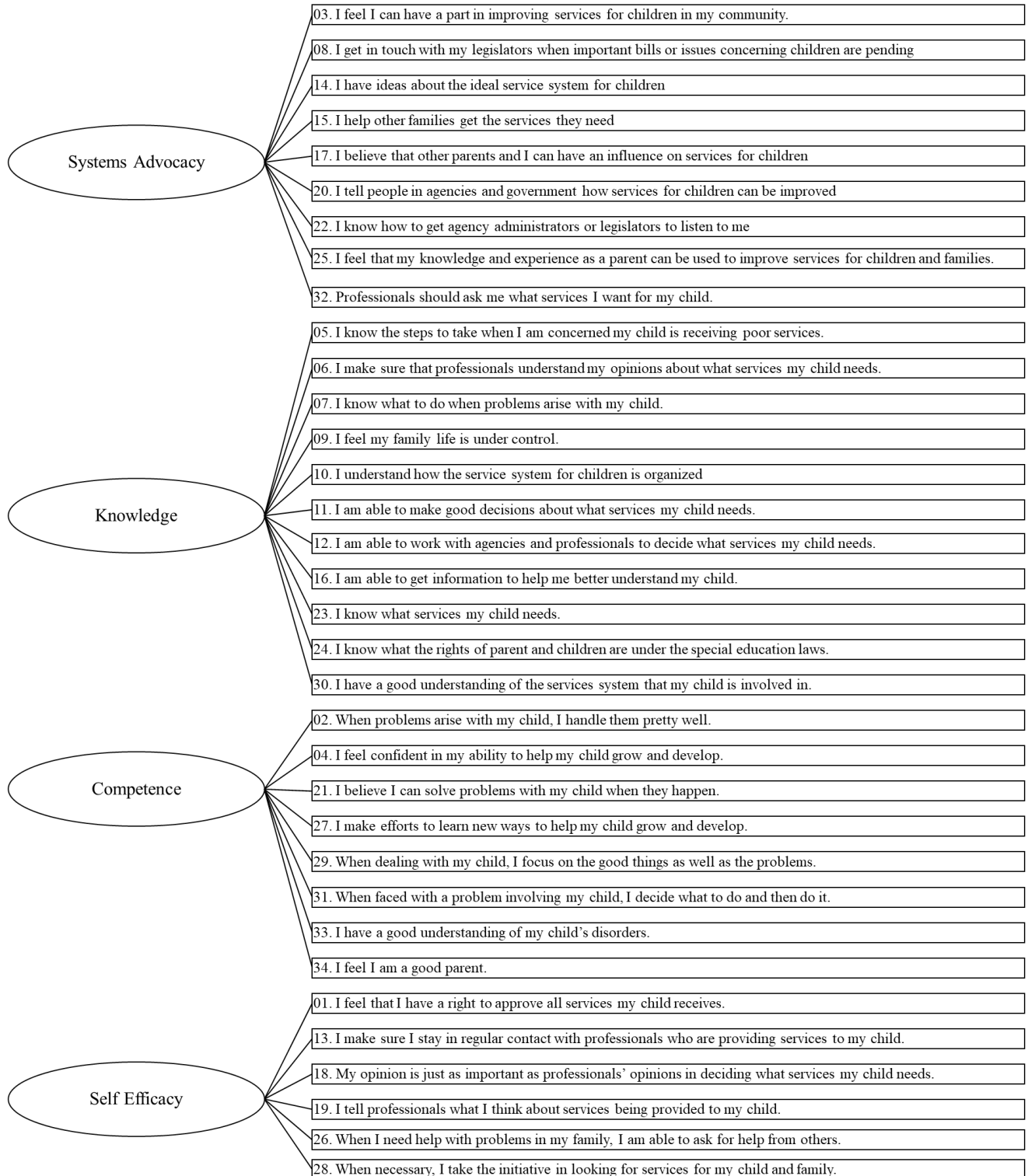
Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. FES Family	-											
2. FES Service System	.82**	-										
3. FES Community/Political	.55**	.67**	-									
4. FES General	.87**	.93**	.86**	-								
5. PATPSI Help-Seeking Intentions	.14*	.14*	.05	.10	-							
6. PATPSI Help-Seeking Attitudes	-.02	.03	.27**	.12*	.09	-						
7. PATPSI Stigmatization	.37**	.40**	.38**	.45**	.01	-.16**	-					
8. PEEBS Subjective Norms	.20**	.16**	.05	.14*	.44**	-.03	.15**	-				
9. PEEBS Perceived Treatment Barriers	.36**	.40**	.15**	.31**	.41**	.01	.15**	.49**	-			
10. PEEBS Knowledge	.43**	.43**	.27**	.42**	.21**	-.07	.25**	.36**	.37**	-		
11. PEEBS Evidence-Informed Action	.01	.03	-.21**	-.07	.01	-.47**	.08	.11*	.17**	.26**	-	
12. PEEBS Perceived Behavioral Control	-.14*	-.16**	.09	-.07	-.02	.41**	-.13*	-.07	-.21**	-.24**	-.69**	-

* $p < .05$, ** $p < .01$

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Figure 1

Four-Factor Model



PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Figure 2

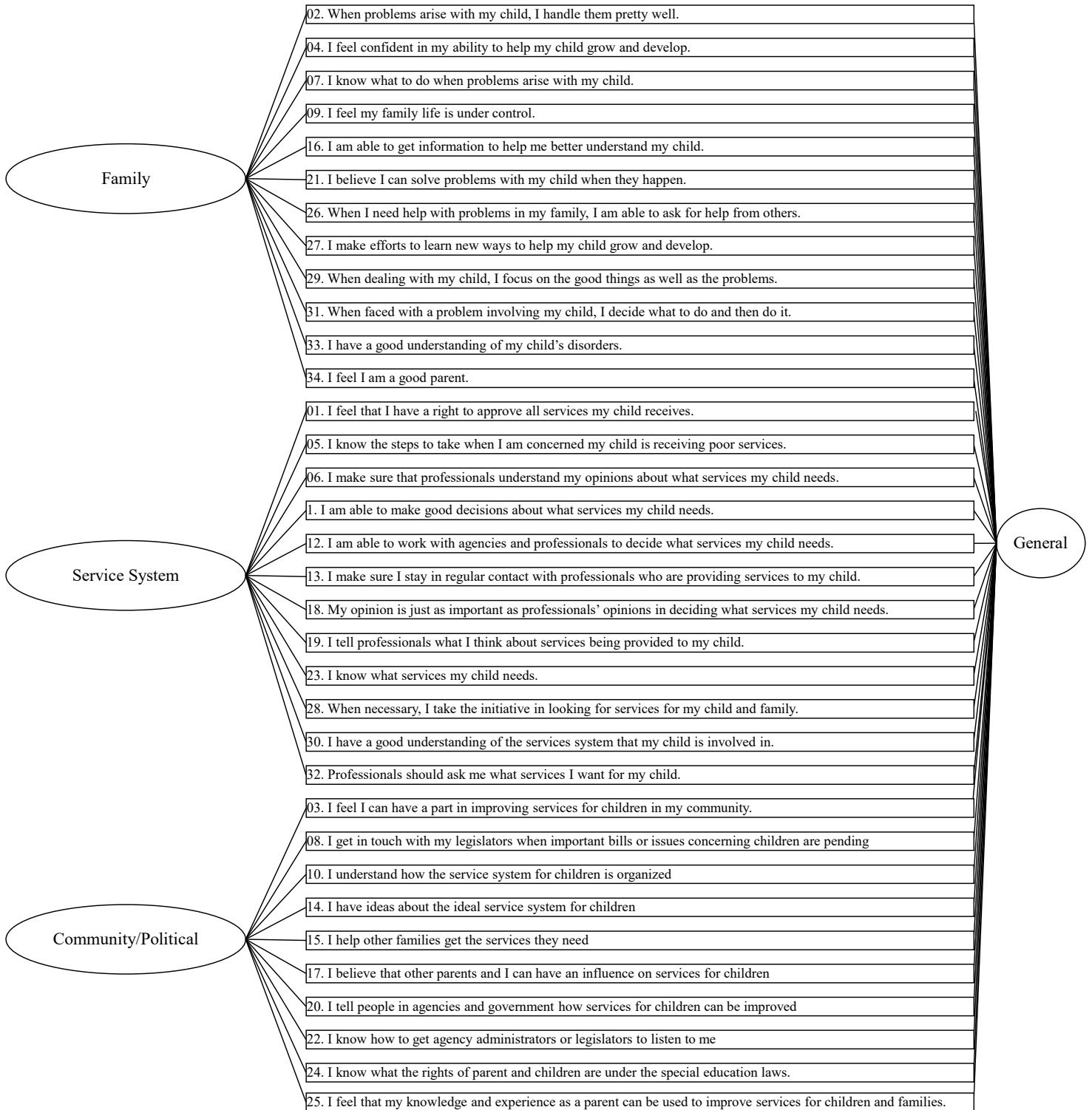
Three-Factor Model



PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Figure 3

Three-Factor Bifactor Model



PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Appendix A: Family Empowerment Scale

FES

Directions: Below are 34 statements that describe how a parent or caregiver of a child with emotional, behavioral and/or developmental challenges may feel about his or her situation. For each statement, please circle the response that best describes how the statement applies to you.

	Not True at all	Mostly not True	Somewhat True	Mostly True	Very True
1. I feel that I have a right to approve all services my child receives.	1	2	3	4	5
2. When problems arise with my child, I handle them pretty well.	1	2	3	4	5
3. I feel I can have a part in improving services for children in my community.	1	2	3	4	5
4. I feel confident in my ability to help my child grow and develop.	1	2	3	4	5
5. I know the steps to take when I am concerned my child is receiving poor services.	1	2	3	4	5
6. I make sure that professionals understand my opinions about what services my child needs.	1	2	3	4	5
7. I know what to do when problems arise with my child.	1	2	3	4	5
8. I get in touch with my legislators when important bills or issues concerning children are pending.	1	2	3	4	5
9. I feel my family life is under control.	1	2	3	4	5
10. I understand how the service system for children is organized.	1	2	3	4	5
11. I am able to make good decisions about what services my child needs.	1	2	3	4	5

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

12. I am able to work with agencies and professionals to decide what services my child needs.	1	2	3	4	5
13. I make sure I stay in regular contact with professionals who are providing services to my child.	1	2	3	4	5
14. I have ideas about the ideal service system for children.	1	2	3	4	5
15. I help other families get the services they need.	1	2	3	4	5
16. I am able to get information to help me better understand my child.	1	2	3	4	5
17. I believe that other parents and I can have an influence on services for children.	1	2	3	4	5
18. My opinion is just as important as professionals' opinions in deciding what services my child needs.	1	2	3	4	5
19. I tell professionals what I think about services being provided to my child.	1	2	3	4	5
20. I tell people in agencies and government how services for children can be improved.	1	2	3	4	5
21. I believe I can solve problems with my child when they happen.	1	2	3	4	5
22. I know how to get agency administrators or legislators to listen to me.	1	2	3	4	5
23. I know what services my child needs.	1	2	3	4	5
24. I know what the rights of parent and children are under the special education laws.	1	2	3	4	5
25. I feel that my knowledge and experience as a parent	1	2	3	4	5

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

can be used to improve services for children and families.					
26. When I need help with problems in my family, I am able to ask for help from others.	1	2	3	4	5
27. I make efforts to learn new ways to help my child grow and develop.	1	2	3	4	5
28. When necessary, I take the initiative in looking for services for my child and family.	1	2	3	4	5
29. When dealing with my child, I focus on the good things as well as the problems.	1	2	3	4	5
30. I have a good understanding of the services system that my child is involved in.	1	2	3	4	5
31. When faced with a problem involving my child, I decide what to do and then do it.	1	2	3	4	5
32. Professionals should ask me what services I want for my child.	1	2	3	4	5
33. I have a good understanding of my child's disorders.	1	2	3	4	5
34. I feel I am a good parent.	1	2	3	4	5

Appendix B: Parent Attitudes Toward Psychological Services Inventory

PATPSI

Directions: For each item, indicate whether you *strongly disagree (0)*, *disagree (1)*, *somewhat disagree (2)*, *somewhat agree (3)*, *agree (4)* or *strongly agree (5)*. The term “*psychological problems*” refer to reasons one might visit a professional. Similar terms include: mental health concerns, emotional problems, mental troubles, and personal difficulties. The term “*professional*” refers to individuals who have been trained to deal with mental health problems (e.g., psychologist, psychiatrist, social workers, and physicians).

	0	1	2	3	4	5
	strongly disagree			strongly agree		
1. I would not want others (friends, family, teachers, etc.) to know if my child had a psychological or behavior problem.	0	1	2	3	4	5
2. To avoid thinking about my child’s problems, doing other activities is a good solution.	0	1	2	3	4	5
3. Having been mentally ill carries with it feelings of shame.	0	1	2	3	4	5
4. If my child were experiencing a serious psychological or behavior problem at this point in my life, I would be confident that I could find relief in professional help.	0	1	2	3	4	5
5. If my child were to experience a psychological or behavior problem, I could get professional help if I wanted to.	0	1	2	3	4	5
6. Important people in my life would think less of my child if they were to find out that he/she had a psychological or behavior problem.	0	1	2	3	4	5
7. Psychological problems tend to work out by themselves.	0	1	2	3	4	5
8. It would be relatively easy for me to find the time to take my child to see a professional for help.	0	1	2	3	4	5
9. I would want to get professional help if my child were worried or upset for a long period of time.	0	1	2	3	4	5

CONTINUE →

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

	0	1	2	3	4	5					
	strongly disagree					strongly agree					
10.	I would be uncomfortable seeking professional help for my child because people (friends, family, coworkers, etc.) might find out about it.					0	1	2	3	4	5
11.	I would not want to take my child to a professional because of what people might think.					0	1	2	3	4	5
12.	There is something admirable in the attitude of people who are willing to cope with their conflicts and fears without seeking professional help.					0	1	2	3	4	5
13.	If I believed my child were having a mental breakdown, my first decision would be to get professional help.					0	1	2	3	4	5
14.	I would feel uneasy going to a professional because of what some people would think.					0	1	2	3	4	5
15.	Strong willed individuals can handle emotional or behavior problems without needing professional help.					0	1	2	3	4	5
16.	Had my child received treatment for a psychological or behavior problem, I would feel that it should be "kept secret".					0	1	2	3	4	5
17.	I would be embarrassed if my neighbor saw me going into the office of a professional who deals with mental health concerns.					0	1	2	3	4	5
18.	People should work out their own problems instead of getting professional help.					0	1	2	3	4	5
19.	There are things that happen in my family I would not discuss with anyone.					0	1	2	3	4	5
20.	Seeking professional help is a sign of weakness.					0	1	2	3	4	5
21.	Strong willed parents can handle problems without professional help.					0	1	2	3	4	5

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Appendix C: Parent Engagement in Evidence-Based Services (PEEBS) Questionnaire

PEEBS

These questions are about children’s mental health treatments. Please respond based on how much you agree with each sentence. If your child is not currently receiving treatment services, please respond as if they were.

Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	
1. I would prefer that the treatment my child’s therapist uses is based on research.	1	2	3	4	5
2. My child’s school should only provide treatments supported by research.	1	2	3	4	5
3. Stigma about treatments makes me less likely to seek services.	1	2	3	4	5
4. Treatments based on research cost more than other treatments.	1	2	3	4	5
5. I would feel comfortable asking my child’s therapist to use treatments based on research.	1	2	3	4	5
6. My family should actively learn about treatments.	1	2	3	4	5
7. Regardless of what the research says, I know what works best for my child.	1	2	3	4	5
8. Treatments endorsed by a psychologist are important to me.	1	2	3	4	5
9. Research demonstrates whether treatments have long lasting effects.	1	2	3	4	5
10. I intend to seek out researched treatments for my child’s problems.	1	2	3	4	5
11. Treatments endorsed by a parent advocate are important to me.	1	2	3	4	5
12. My child’s therapist should help me decide the most effective treatments to use.	1	2	3	4	5

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

13. Treatments suggested online are important to me.	1	2	3	4	5
14. Treatments with low levels of support may still be effective for my child.	1	2	3	4	5
15. I am not able to access treatments supported by research for my child.	1	2	3	4	5
16. The type of treatment my child's therapist uses does not matter.	1	2	3	4	5
17. The most important part of treatment is the bond between my child's therapist and our family.	1	2	3	4	5
18. I am sure of my ability to understand the research on child mental health treatments.	1	2	3	4	5
19. I would pay for researched treatments even if they were not covered by my insurance.	1	2	3	4	5
20. Treatments endorsed by my child's pediatrician are important to me.	1	2	3	4	5
21. I am willing to try any type of treatment for my child.	1	2	3	4	5
22. My child's therapist should make sure I understand the type of treatment she provides.	1	2	3	4	5
23. I am less concerned with the type of treatments being provided when they are free.	1	2	3	4	5
24. Treatments suggested by school staff are important to me.	1	2	3	4	5
25. My child's therapist should tell me if the treatment techniques she is using are based on research.	1	2	3	4	5
26. It is necessary that I participate in my child's treatment.	1	2	3	4	5
27. Treatments supported by research have a history of working well.	1	2	3	4	5
28. It takes a lot of effort to receive treatments based on research.	1	2	3	4	5

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

29. A good therapist will use treatments that have been supported by evidence.	1	2	3	4	5
30. I would feel fine challenging the treatment decisions of my child's therapist.	1	2	3	4	5
31. I would consider researched treatment if I knew they were covered by my insurance.	1	2	3	4	5
32. I will utilize whatever treatment services are offered to me.	1	2	3	4	5
33. I want to use treatments based on research for my child's problems.	1	2	3	4	5
34. Treatments suggested by a therapist are important to me.	1	2	3	4	5
35. It is my duty to learn about effective treatments for my child's problems.	1	2	3	4	5
36. I need help to choose treatments based on research for my child.	1	2	3	4	5
37. Treatments supported by research do not fit my culture.	1	2	3	4	5
38. I am overwhelmed by treatment options.	1	2	3	4	5
39. My child's school should provide me with information about treatments based on research.	1	2	3	4	5
40. I know what happens in my child's treatment sessions.	1	2	3	4	5
41. During treatment, my child's therapist should show me data that my child is improving.	1	2	3	4	5
42. I know if treatments are supported by research.	1	2	3	4	5
43. Children who participated in treatment research studies are not like my child.	1	2	3	4	5
44. My child's therapist should always use researched treatments before trying other options.	1	2	3	4	5

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

45. Treatments suggested by my family are important to me.	1	2	3	4	5
46. Mental health problems should only be treated by therapists who use researched treatments.	1	2	3	4	5
47. My child's therapist should be responsible for bad outcomes when she does not choose researched treatments.	1	2	3	4	5
48. I would find out if my child's therapist uses researched treatments before starting services.	1	2	3	4	5
49. My child's school should be required to help me access researched treatments.	1	2	3	4	5
50. My family background affects how well researched treatments work.	1	2	3	4	5
51. Treatments supported by research can be modified for my child.	1	2	3	4	5
52. Research based treatments can feel impersonal.	1	2	3	4	5
53. Mental health treatments can work for my child.	1	2	3	4	5
54. I do not know where to find therapists who use treatments based on research.	1	2	3	4	5
55. Treatments endorsed by other families with the same problems are important to me.	1	2	3	4	5
56. A therapist does not need to follow the research to be effective.	1	2	3	4	5
57. I know how to access treatments for my child.	1	2	3	4	5
58. I do not know enough about researched treatments to form an opinion about them.	1	2	3	4	5
59. The location of services is the most important part of treatment.	1	2	3	4	5

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

60. I feel comfortable making treatment decisions for my child.	1	2	3	4	5
61. I expect to obtain treatments supported by research for my child's problems.	1	2	3	4	5
62. Treatments endorsed by a psychiatrist are important to me.	1	2	3	4	5
63. If a treatment is working for my child, following the research is not necessary.	1	2	3	4	5
64. Mental health treatments work quickly.	1	2	3	4	5
65. I do not know what type of treatments therapists are using.	1	2	3	4	5
66. I have the right to decide whether researched treatments are used in my child's sessions.	1	2	3	4	5

Appendix D: Participant Background Information Form

Parent Background Information

1. Age: _____

2. Sex: **Male** **Female**

3. Marital Status:

- Single, never married
- Married or domestic partnership
- Separated
- Divorced
- Widowed

4. Highest level of education completed:

- Less than High School
- High School/GED
- Vocational/technical
- Some College
- Bachelor's degree
- Master's degree
- Doctoral degree
- Professional degree (MD, JD, etc.)

5. Which of these categories best describes your total combined family income for the past 12 months?

- Less than \$5,000
- \$5,000 to \$11,999
- \$12,000 to \$15,999
- \$16,000 to \$24,999
- \$25,000 to \$34,999
- \$35,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 and greater
- Don't know
- Prefer not to respond

6. Ethnicity (please check all that apply):

- Asian
- Native Hawaiian or Other Pacific Islander
- Black or African American
- Hispanic or Latino
- White

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

Other (Please specify: _____)

7. Have you ever heard of the term “Evidence-Based Services?” Y / N

8. How many children do you have? _____

9. How many total people live in your household?

10. Have you ever received mental health services?

Yes _____ years No Prefer not to respond

If yes, were they evidence-based services?

Yes No Don’t know

11. Please respond to the following for each of your children currently between the ages of 5-18.

	Example	Child 1	Child 2	Child 3
Sex (M, F, other)	M			
Current age	14			
Mental health services ever received (check all that apply)				
School-based	✓			
In-home	✓			
Out of Home (e.g., hospital)				
In all, across all services, how long have they received mental health services (years)?	8 years			
Have they ever received “evidence-based services?” (yes, no, don’t know)	Yes			
If yes, specify name	Multisystemic Therapy			

Appendix E: Participant Consent Form

University of Hawaii

Consent to Participate in Research Project

Parent Engagement in Evidence-Based Services Questionnaire with Parent Samples

My name is Brad Nakamura, Ph.D. I am an Associate Professor in the Department of Psychology at the University of Hawaii (UH) at Manoa. As part of my larger program of research on improving the quality of mental health services for youth and families, I am conducting a research project. The purpose of my project is to learn more about consumer engagement in evidence-based services. I am asking you to participate in this project because you are at least 18 years old and have one or more children between the ages of 5 and 18.

Activities and Time Commitment: If you decide to take part in this project, you will be asked to fill out questionnaires regarding parent perceptions of youth mental health treatments. There are 121 total items across three surveys asking how much you agree with each statement (e.g., “Treatments supported by research have a history of working well”) and you will also be asked to provide parent background information (e.g., age, sex, marital status, etc.) prior to completing the surveys. The survey will be provided to you and completing it will take approximately 30 minutes. I expect around 330 parents will take part in this project.

Benefits and Risks: There will be no direct benefit to you for taking part in this project. The findings from this project may help improve mental health services provided to children. There is little risk to you in participating in this project.

Confidentiality and Privacy: All research records will be stored in a locked file in a locked research laboratory at the University of Hawaii at Manoa for the duration of the research project. The University of Hawaii Human Studies Program has the right to review research records for this study. When I report the results of my research project, I will not use your name. I will not use any other personal identifying information that can identify you. I will report my findings in a way that protects your privacy and confidentiality to the extent allowed by law.

Voluntary Participation: Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you. As this study is not connected with any health or educational service program, your choice to participate or not participate will not affect your rights to any type of services you or your child may currently be receiving. Further, the study is in no way evaluating the organization (e.g., school or community organization) through which you were contacted. You will receive two composition tablets and one colored pencil set for your time and effort in participating in this research project.

Questions: If you have any questions concerning your participation, please contact the researcher, Brad Nakamura, Ph.D., at bradn@hawaii.edu. You may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu. to discuss problems, concerns and

PSYCHOMETRICS OF THE FAMILY EMPOWERMENT SCALE

questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit <https://www.hawaii.edu/researchcompliance/information-research-participants> for more information on your rights as a research participant.

Participant: I have read and understand the above information, and agree to participate in this research project.

Name (Print): _____

Signature: _____ Date: _____