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## Father Involvement and Early Intervention: Effects of Empowerment and Father Role Identity

*The family-centered service delivery model used in early intervention is meant to empower families of children with disabilities. The present analysis examined the effects of empowerment and father identity on father involvement with children with disabilities. Father involvement was measured using three indices: attachment (i.e., feeling a strong connection to the child), engagement (i.e., participating in activities with the child), and responsibility (i.e., meeting the child's needs). Father empowerment and father identity, measured as salience, satisfaction, and reflected appraisals, consistently predicted higher levels of father involvement in hierarchical regression models. In addition, mediation analyses revealed that father identity partially mediated the relationship between empowerment and father involvement. These findings support the family-centered service delivery model and suggest that it may be able to improve the lives of children with disabilities by enhancing father role identity and subsequent fathering activities.*

Under Part C of The Individuals with Disabilities Education Improvement Act of 2004, states are required to provide services to children

under age three who are at risk for developmental disorders while also providing families with information about caring effectively for their child with special needs. The Tennessee Early Intervention System (TEIS) provides a bridge between families of children with special needs and the services available within the community through the provision of family-centered services (Tennessee Department of Education, 2013). Family-centered services encourage parents and professionals to work within the context of the family and the family's daily routines; among other results, parental empowerment is an expected outcome (Higgins, 2005; Wang et al., 2006). The present analysis focuses on fathers in the TEIS program whose children were previously diagnosed with developmental delays and identifiable disabilities, including, but not limited to, cerebral palsy, autism, spina bifida, Down syndrome, and speech and/or hearing disorders and who were participants in the TEIS service program. Finding evidence that links empowerment to more active involvement with children among fathers who are program participants could provide additional support for programmatic reliance on family-centered approaches. Exploration of that link shaped the research questions that guided this analysis.

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### FAMILY-CENTERED CARE, EMPOWERMENT, AND FATHER INVOLVEMENT

Interactions between families of young children with disabilities and service providers in statewide birth-to-3 programs that are enabling

and empowering have been associated with several beneficial family outcomes. For example, in a meta-analysis of 47 studies that included more than 11,000 participants, Dunst, Trivette, and Hamby (2007) found in the majority of studies that family-centered practices were strongly associated with a variety of positive parent, family, and child behavior outcomes. The concept that was examined more often than other family support concepts was family empowerment. *Empowerment* refers to an individual's ability to mobilize and apply strategies that lead to greater control over one's life by influencing their interpersonal and social environments (Dempsey & Dunst, 2004). In the field of early intervention, the concept of empowerment involves the restructuring of traditional relationships between parents and professionals from one that historically has been paternalistic, and sometimes demeaning, to one in which professionals collaborate with parents in the decision-making process, treat them as partners, and communicate with them in respectful and valued ways. In more recent meta-analytic studies, Dunst and his colleagues have presented further support for the broad, empowering effects of family-centered practices (Dunst & Trivette, 2009; Trivette, Dunst, & Hamby, 2010). These findings are based almost exclusively on samples of mothers or mixed samples that included too few fathers to conduct separate analyses. At present, we do not know whether the empowering effects of family-centered practices promote greater involvement with children in fathers who participate in birth-to-3 early intervention programs.

The conceptualization of father involvement (FI) has shifted over the past several decades from simplistic dichotomies of presence-absence, to consideration of the amount of time men spend with their children, to recognition of the multidimensional nature of men's relationships with their children. Two of our measures of FI build on the work of many scholars (Bruce & Fox, 1999; Hofferth, 2003; Lamb, Pleck, Charnov, & Levine, 1987; Pleck, 2007) and include father's interactive play with his child and caretaking of the child. A third measure was used to address the finding that many fathers may find it difficult to attach affectively to a young child with special needs, particularly when the child's disability is severe (Lamb & Billings, 1997). Our intent was to develop a deep, albeit rudimentary, measure of father

attachment, one that tapped a very strong, early bond with the child that was conceptually different from our other measures of FI. We wanted a measure that might capture strong feelings of disconnectedness, such as ambivalence, fear of meeting future challenges, and a profound sense of loss, which traditional measures do not generally tap, but we also wanted a measure that would allow for the expression of feelings that reflected positive connectedness to the child, such as relief, joy, confidence, commitment, and purpose.

Numerous theoretical models of FI have been proposed, emphasizing factors that are thought to be, or that have been found empirically to be, predictors of FI. These include sociodemographic characteristics of the father that serve largely to index different social contexts such as education, income, race, and ethnicity; relationship factors such as the quality of the father's relationship with the mother and father-child coresidence; characteristics of the child, such as temperament, age, and gender; and social psychological factors, such as the father's motivation to parent, his parenting beliefs, perception of parental competence by self and others, and father role identity (Hofferth, 2003; Maurer, Pleck, & Rane, 2001; Pasley, Petren, & Fish, 2014; Pleck, 2010, 2012). We now outline the theoretical model guiding this analysis.

### *Children with Delays and Disabilities*

The preponderance of research on FI is based on fathers of children without disabilities. Given the evidence that these fathers are increasingly taking on the role of coparent, a similar shift in role responsibilities might be expected in families of young children with disabilities. Unfortunately, this does not always appear to be the case (Flippen & Crais, 2011). Although the current philosophy of family-centered service delivery places greater emphasis on dual caregiver participation, mothers of children with special needs continue to be the primary caregivers, even when they share the breadwinning role with their spouses. Nonetheless, a growing number of studies are providing insight about fathers of children with special needs. In summarizing the state of research on fathers of children with special needs, Dollahite (2004) indicated that FI is little understood for several reasons, including the overriding focus on mothers in most research; the treatment of fathers as of secondary

importance by practitioners; and the emphasis among researchers on fathers' stress and coping rather than on evidence of men's personal growth, diversity in parenting style, and paternal creativity in responding to their child with special needs.

Representative of studies of stress and coping among fathers of children with special needs is the one conducted by Salovlita, Italinna, and Leinonen (2003), who found high levels of paternal stress among fathers. Differences between mothers and fathers of children with special needs in the expression of stress and coping are frequently cited (Hastings et al., 2005; Pelchat, Lefebvre, & Perreault, 2003), with mothers generally expressing higher levels of stress than fathers. Tehee, Honan, and Hevey (2009) concluded that high levels of maternal stress may be the result of serving dual roles of primary caretaker and full- or part-time breadwinner and suggested that increased FI could ease the overall workload for mothers and thereby reduce maternal stress. Although it is possible to overstate the burdens and ignore the benefits that children with special needs bring to parents (Dollahite, 2004), the bulk of evidence suggests that parents face many challenges unique to their children's conditions, and thus exploring factors that encourage men's positive involvement with their children with special needs is important (Fenning, Baker, Baker, & Crnic, 2014; Quinn, 1999).

#### *Empowerment and FI*

Empowerment is central to a family-centered philosophy and is presumed to be a direct outcome of programs that utilize a family-centered approach to service delivery (see Dempsey & Keen, 2008, for a more detailed review). Parenting self-efficacy (PSE)—the belief that one can control events that affect the development of one's child—has been shown repeatedly to be an outcome of enabling and empowering practices (Dunst & Trivette, 2009; Ingber & Most, 2012; Trivette et al., 2010). Although these analyses of the relationship between empowering family-centered practices and PSE are based largely on mother samples, they suggest that fathers who become empowered by their involvement with family-centered service providers may also develop greater confidence and competence in relating to their children with delays and disabilities. In the present study

we developed a measure of PSE based on this literature to serve as our empowerment variable.

Our focus on a sample of fathers who participated in a service program grounded in family-centered practices led us to hypothesize that empowerment (PSE) will be a critical variable in accounting for the level of involvement of fathers with their children with delays and disabilities. The relative scarcity of research studies that have included investigations of the links between empowerment and FI increases the potential value of the present investigation.

#### *Identity Theory and FI*

Identity theory, a subset of symbolic interaction theory, points to three social psychological factors that are important in the enactment of a social role such as the father role: (a) a high degree of *salience* of the role to a person's self-identity, (b) the perception that others in his social environment *appraise* him favorably in that role, and (c) a high level of *satisfaction* in the role (Stryker & Serpe, 1994). Research results for father role salience have been mixed, but the majority of studies indicate that men who place importance on their fathering role or view their father status as central to their identity are more actively involved with their children than men who place less importance on the role of the father (Pasley et al., 2014). Because circumstances or constraints in other areas of their lives, such as inflexible work schedules or nonresidence with the child, may prevent men from enacting their father role preferences, it can be misleading to rely solely on observational or time-based measures of father behaviors as indicators of the salience of the father role, and for this reason self-report measures of role salience are often used (Fox & Bruce, 2001; Roy, 2004). Several researchers have suggested that men's paternal identity is influenced by reflected appraisals; that is, by others' perceptions of his fathering abilities. Wives' opinions of their husbands' parenting abilities have been especially important in accounting for men's FI (Beitel & Parke, 1998; McBride & Rane, 1997; McBride et al., 2005). Role satisfaction is theoretically important to role enactment, and confirmation of this has been found in FI research (Fox & Bruce, 2001; Minton & Pasley, 1996). None of the studies cited included samples of fathers of children with delays and disabilities.

### *Income, Financial Strain, and Education and FI*

Sociodemographic variables have been investigated as predictors of men's role identity and the type of involvement men have with their children and families (Coley & Hernandez, 2006; Landale & Oropesa, 2001). Income is a frequent focus because of the importance traditionally attached to the breadwinner function as the most important role a man can play in his children's lives (Walker & McGraw, 2000). Men in lower income brackets have been found to compensate for their lack of monetary success or material provision by acting as teachers, playmates, and emotional supporters of their children (Summers, Boller, Schiffman, & Raikes, 2006). Financial well-being or strain may produce a more adequate picture of family economic stability than a simple measure of income. Men facing economic pressure have been found to be more abrasive and irritable and to act in more hostile and punitive ways toward their children (Elder, Conger, Foster, & Ardel, 1992; Gutman & Eccles, 1999); they also reflect higher levels of depression and demoralization, which interfere with their typical parenting behaviors and levels of involvement with their children (Conger et al., 1992).

Mixed results have been found regarding the importance of *paternal education*. Education can enhance a father's human capital, yielding greater economic stability and a greater sense of overall satisfaction (Ahmeduzzaman & Roopnarine, 1992). Landale and Oropesa (2001), however, found that education was not so salient a predictor of FI as the father's employment status. Among fathers of children with identifiable disabilities and developmental delays, Dyer, McBride, Milagros Santos, and Jeans (2009) noted that socioeconomic status was related to the level and trajectory of FI, depending on the timing of the child's diagnosis.

### *Biological Ties, Child Density, Birth Order, Child Gender, Diagnosis Severity, and FI*

Researchers have examined the effect of biological links on the relationships men establish with children by comparing FI among biological fathers and stepfathers. Such research has produced varying results, but much of this literature suggests that biological fathers, especially coresident fathers of children without disabilities, are likely to be more intensely involved

over a range of measures of involvement and to have greater impact on their children than are coresident stepfathers without such a biological link to the child (Harris & Ryan, 2004; Kaplan, Lancaster, & Anderson, 1998; McBride et al., 2005). *Child density* refers to the child:parent ratio in a home or, more generally, to the number of children in a family. Underlying interest in this variable is the assumption that more children represent a greater demand for parenting than fewer children, all other things being equal; thus, FI is expected to be a positive function of numbers of children in the household. However, research that focuses specifically on the effect of family size on FI is sparse, and results are mixed. Bronte-Tinkew, Horowitz, and Carrano (2010) found that number of children had a net inverse association with father engagement in a sample of resident fathers of infants. McBride et al. (2005) found, in multivariate models with a representative sample of U.S. children, that paternal warmth and monitoring varied inversely with family size when children's ages were controlled, the reverse of what would be expected, and that family size was unrelated to father-child activities and to other measures of FI. Regarding the effects of birth order, some studies have shown that, among families of children without disabilities, fathers are more involved with first-borns than they are with later born children (Flouri & Buchanan, 2003). Although there is some evidence that fathers of first-born or only children with disabilities are less involved (Konstantareas & Homatides, 1992), this finding has not been well established in literature. Mixed results also have been found for child gender and FI. Dyer et al. (2009) found that at age 9 months, fathers of daughters without disabilities were less involved in caretaking than fathers of sons, but they did not find gender-of-child differences among fathers of children with developmental delays. Severity of the child's diagnosis generally has not been found in previous early intervention studies to substantially weaken the relationship between family-centered practices and empowerment outcomes (Dempsey & Keen, 2008). Lamb and Billings (1997) noted mixed results in research on the effect of the severity of a child's disability on FI.

### RESEARCH QUESTIONS AND HYPOTHESES

Three central questions motivated this analysis. First, in this sample of fathers of children with

delays and disabilities, are there links between FI and empowerment, on the one hand, and FI and father identity variables (father role salience, satisfaction, and reflected appraisals), on the other? Second, might father identity variables mediate the relationship between empowerment and FI? Third and finally, is the relationship between empowerment and FI, if one is found, moderated by financial strain or by the severity of the child's diagnosis? Although links among FI, empowerment, and measures of father identity have been examined in past research, the current body of literature provides little guidance as to the relationships among these sets of variables when examining a sample of fathers of children with delays and disabilities.

We posed five hypotheses to address our questions. In Hypothesis 1 we posited that, net of the effects of control variables (father's education, income, and financial strain; child's biological tie with the father; whether the child was an only child; whether the child was first- or later born; child's gender; and child's diagnosis severity), empowerment will be positively associated with FI. For Hypothesis 2 we used identity theory as a guide to posit that role salience, paternal satisfaction, and reflected appraisals will each correlate with FI net of controls.

We also predicted mediating and moderating hypotheses. Specifically, Hypothesis 3 suggested that the relationship between empowerment and FI will be mediated by the three identity theory variables. Hypothesis 4 predicted that financial strain will moderate the relationship between empowerment and FI, with empowerment showing special importance to fathers who are facing high levels of financial strain. Finally, in Hypothesis 5 we posited that diagnosis severity will dilute the relationship between empowerment and FI under conditions of high severity. We formulated this last hypothesis largely on conceptual rather than empirical grounds, although there is some evidence that fathers are more negatively affected than mothers at the time of the initial diagnosis, particularly if the child has a severe disability (Lamb & Billings, 1997).

## METHOD

### *Data Collection and Sample*

The data used in this study were taken from the Pathways Research Project in which outcomes of family-centered service coordination

provided by TEIS service coordinators to families of infants and toddlers with developmental delays and identifiable disabilities were evaluated. TEIS service coordinators were evaluated by families and shown to utilize highly effective family-centered practices (Nordquist, Higgins, Coulter, & Olsen, 2008). Families were eligible for participation in the project if they were actively involved in or had recently transitioned from TEIS, the parents were 18 years of age or older and spoke English fluently, and the child was not a ward of the state and placed in foster care.

We used a stratified, PPS (probability proportionate to size) random sampling method with replacement to identify potential participants. Family samples were drawn from individual TEIS projects located in nine geographic districts across the state. This selection method was used in an effort to obtain family samples from each of the nine districts that were in proportion to the number of total families served in the state. As a result, 406 fathers were invited to participate in the study, and 141 subsequently returned the questionnaire, yielding a total response rate of 34.7%. Subsequent comparisons of respondents and nonrespondents using data available from mothers showed no differences by age, residential location, income, education, or employment status. Nonrespondents were significantly more likely to have a child with a low-risk rather than high-risk diagnosis, suggesting that our sample may overrepresent fathers of children with more challenging conditions.

Questionnaires were distributed to families by their personal TEIS service coordinators, who were instructed to answer parents' questions but not to help parents respond to the questionnaire. Parents were asked to complete the questionnaire on their own and not discuss items or responses with their spouses. After completing the questionnaire, the parent returned it by mail to the Pathways Research Project.

One hundred thirty-five fathers were included in this analysis. Six fathers were excluded because too many responses were missing on the outcome variable or other scale items. A comparison of deleted cases with the remaining cases showed no significant differences in education, income, or employment status; all four fathers for whom information was available were biological fathers of the focus child, and three of the four were currently married, suggesting that their deletion did not bias the

sample on indicators relevant to this analysis. The majority of the fathers in the remaining sample identified themselves as Caucasian (93%); a small number were African American (2%) or Asian (1%). The fathers were 37 years old, on average, just over 90% were currently married, and 87% of them were the biological fathers of the children with developmental delays or identifiable disabilities. Just over 13% of the fathers had a high school diploma or less, 42% had some college or technical training, and 45% had a bachelor's degree or more.

The children's ages at the time of data collection ranged from birth to age 4, with a mean age of 28.5 months. Thirty-five percent of the children were first-born; of these, the large majority (85%) were only children. The number of children in families ranged from one to four, and the average number of siblings was two. Fully 63% of the children were boys, as would be expected in a sample of children diagnosed with a developmental delay or disabling condition. Approximately 35% of the children had developmental delays, 28% of the children had speech and/or hearing delays, 10% were diagnosed with cerebral palsy, 6% were diagnosed with autism, 8% were diagnosed with Down syndrome, and 13% of the children had "other" forms of disabilities.

#### Missing Data

Analysis of missingness of data was conducted with SPSS (Version 21.0) Missing Values Analysis. Seven of the 58 items used to build measures in this analysis had values missing for more than 10% of fathers; these included income (13% missing), diagnosis severity (14% missing), and the five items that make up the weighted reflected appraisals scale (14%–19% missing). Data from mothers were substituted for missing father data on the child gender (9 cases), birth order (12 cases), biological child (9 cases), and diagnostic severity (14 cases) variables. This meant that no imputation was needed for the child gender, birth order, or biological child variables, and imputation of diagnosis severity was limited to five cases. For all other missing data, missing values were imputed with the Multiple Imputation routine in SPSS (Version 21), yielding five data sets with imputed values. The multiple-imputation algorithm injects randomness into the process of generating a value for cases with missing data and is considered superior to other imputation

schemes. Because of that randomness, the five imputations yield data that differ slightly. We report the pooled results—pooled across the five imputations—where available; otherwise, ranges of values are reported.

#### Measures

*Empowerment.* The Family Empowerment Scale (FES) was created by Koren, DeChillo, and Friesen (1992) and revised by Curtis and Singh (1996). It was developed and revised using samples of children with serious emotional and behavior problems, but it has been used in a number of studies in which parents of young, delayed, and diagnosed children completed the scale. However, it has never been factor analyzed using a population of birth-to-3 children with special needs. The FES comprises 34 items. Four dimensions of empowerment emerged from the factor analysis conducted by Curtis and Singh. A parallel exploratory factor analysis of the FES items for mothers and fathers in the Pathways data yielded a Systems Advocacy subscale and a PSE subscale (Nordquist et al., 2008). Our PSE subscale consisted of 13 items and was selected as a measure of empowerment in our analysis of FI. Examples of items included "I know the steps to take when I am concerned my child is receiving poor services," "I feel my family life is under control," "I am able to make good decisions about what services my child needs," "I feel I am a good parent," and "I am confident in my ability to help my child grow and develop." The coefficient alpha across all imputations was .91.

*Father Role Salience Scale.* Father role salience was measured by using the mean of an 18-item, 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*), modified from the Father Role Salience Scale (Fox & Bruce, 2001), with high scores indicating greater salience of the father role to a man's identity. Sample items include "I like being known as a father," "I would rather work overtime than watch my children for the evening" (reverse scored), and "The word 'father' completely captures who I am." The reliability of the scale for this sample as assessed by Cronbach's alpha was .89 for all imputations.

*Reflected Appraisals of Fathering.* This measure is the mean of the father's perceptions of other's assessments of his parenting. Fathers

were asked how each of five significant others "would judge your ability as a parent" on a 4-point scale (1 = *poor*, 4 = *excellent*). These significant others included their spouse/partner (presumed to be the mother of their child with special needs), their own mother, their relatives, their spouse/partner's mother, and their child's TEIS service coordinator. The alpha coefficients for the appraisal scale ranged from .74 to .77 across the five imputed data sets.

*Father Role Satisfaction Scale.* Satisfaction with being a father was measured as the mean of seven items rated on a 4-point scale with 5 = *high* and 1 = *low*, such that higher scores indicated greater satisfaction (Fox & Bruce, 2001). Sample items included "Being a parent has given me a lot of pleasure" and "I am very proud of being my child's parent." The coefficient alpha = .69 across all imputations for this sample.

*Income.* Income range was measured as an ordinal variable whereby 1 = *less than \$15,000* and 6 = *\$75,000 and above*.

*Financial Strain Scale.* Financial strain was measured as the mean of eight items rated on a 5-point scale on which 0 = *not true* and 4 = *always true*. Sample items include "We have enough money to meet all our expenses each month" (reverse scored) and "It is hard to live on our present income," with higher scores reflecting greater financial strain (Fox & Chancey, 1998). The reliability of the eight-item scale ranged from .84 to .85 across all imputations, as assessed by Cronbach's alpha.

*Education.* Educational attainment was measured as completed level of education ranging from 0 = *did not complete high school* to 7 = *doctoral degree*.

*Biological Child.* Fathers were given choices among biological, adopted, step-, foster, grand-, other relative, and other to indicate their relationship to the child with special needs. Responses were recoded as 1 = *biological child* and 0 = *other*.

*Number of Children.* A count of the number of children in the household, ranging from 1 to 5 or more, was created from the household roster, which included a listing of up to five coresident children and their birthdates.

*Birth Order.* A dichotomous variable, for which 1 = *child with special needs is first-born* and 0 = *child with special needs is later born*, was created from the children's birth dates in the household roster.

*Child Gender.* Gender of the child was coded as 1 = *female* and 2 = *male*.

*Diagnostic Severity.* On the basis of parent responses, the severity of the child's diagnosis was coded as 0 = *low severity* and 1 = *high severity* independently by two senior members of the Pathways team. This was done by examining the assignment of responses to four categories of time that the parents spent caring for their child per week: 0%–25%, 25%–50%, 50%–75%, and 75%–100%. Diagnostic categories were considered *low severity* when assigned to the 0%-to-50% time frame; categories assigned to the 50%-to-100% time frame were considered *high severity*. Interrater agreement for both time frames was 100%. As noted earlier, mother responses were substituted in 14 cases in which the father omitted the diagnoses. In five cases information was missing for both mothers and fathers and thus was imputed.

*FI.* FI was assessed as attachment, engagement, and responsibility. *Attachment* is the mean of three items rated on a scale on which 1 = *strongly agree* and 5 = *strongly disagree*; items were coded such that high scores indicate greater emotional attachment to the child. Sample items included "Losing the chance to be a part of the life of my child would be the worst thing that could happen to me"; "When I first found out that my child had special needs, I was not sure that I wanted to be a father" (reverse scored); and "It is going to take me awhile before I truly feel like a parent to my child" (reverse scored). Our attachment items reflected much deeper levels of emotional connectedness to the child compared to most traditional signs of parental attachment (e.g., holding, comforting, and smiling). The Cronbach's alpha for the three-item attachment scale was .71 across all imputations. *Engagement* was a mean of four self-report items about the amount of time (0 = *rarely/never*, 3 = *daily/almost daily*) fathers spent on activities with their child with special needs; high scores indicated higher levels of engagement. Sample items included "I spend time one-on-one with my child" and "My

child and I play together.” The reliability of the four-item engagement scale ranged from .82 to .83 across all imputations, as assessed by Cronbach’s alpha. *Responsibility* was a mean of six self-report items about the amount of time (0 = rarely/never, 3 = daily/almost daily) fathers spent on instrumental activities with their children. Sample items included “I help my child prepare for bedtime” and “I attend my child’s therapy sessions.” The alpha coefficient for the six-item responsibility scale equaled .78 in all five imputations.

### Analysis Plan

A first step in the testing of all hypotheses was to establish the presence of gross relationships among analytic variables through an examination of a bivariate correlation matrix. We then used ordinary least squares regression models to test Hypotheses 1 and 2, that empowerment and the father identity variables, respectively, were related to FI net of the control variables. To examine the mediation hypothesis that empowerment is positively related to FI through its relationship with the identity theory variables, we first examined the correlation matrix to determine whether three of the conditions for mediation were met; that is, whether there was evidence of significant relationships between the predictor and outcomes, the predictor and potential mediator, and the mediator and outcome variables. Then we regressed each of the three measures of FI onto predictors in a series of stepwise regression models in which the father-centric sociodemographic control variables were entered first as a block followed by a block of five child-centric controls; these were followed by empowerment in a separate step and finally the identity theory variables as a block. Assuming the initial conditions for mediation were met, the mediation hypothesis would be supported if a diminution were evident in the strength of the relationship between empowerment and FI once the identity theory variables were entered into the model. A final set of analyses was planned to investigate conditions under which the empowerment → FI relationship might persist or change, as suggested by Hypotheses 4 and 5. Specifically, we examined whether financial strain or diagnosis severity moderated the relationship between empowerment and FI by adding interaction terms for each with empowerment into the regression models

as a final, fifth step. A significant interaction term would indicate that the empowerment → FI relationship differed under conditions of low and high financial strain or low and high diagnosis severity, thus allowing a more nuanced appreciation of the conditions under which the hypothesized relationship holds. Alternatively, the absence of significant interactions would signal the robustness of the basic relationship under the conditions tested.

### RESULTS

The bivariate relationships among the analytic variables, along with the means and ranges for each variable, are shown in Table 1. The bivariate results anticipated the regression models; specifically, father’s income and educational level, respectively, were unrelated to most of the child variables, empowerment, and FI measures but had positive relationships with the father identity variables. If these two variables play a part in the explanation of FI in this study, it likely comes through their correlation with the father identity variables. Financial strain, on the other hand, was positively, albeit marginally, related to the number of children in the household and showed robust negative relationships to empowerment, the father identity variables, and the three measures of FI.

The negative correlation between father’s biological tie to the child and birth order results from the lower percentage (79%) of first-borns who were biological children than later borns (91%). Notable are the negative relationships between the biological child variable and father engagement and father responsibility, two of the outcome variables, results that beg more scrutiny in the regression models. The strong inverse relationship between number of children in the family and birth order resulted from the large majority of first-borns (85%) who were only children. The number of children also was inversely related to reflected appraisals, one of the father identity variables, and was marginally related to attachment. The results for birth order suggest that fathers of first-borns were marginally more satisfied in their father role and perceived higher ratings of their parenting than fathers of later born children. Child gender suggested that fathers of girls had higher incomes and education and found the father role more salient than fathers of boys. Severity of the child’s diagnosis was unrelated to any

Table 1. Contextual Control, Program, Identity Theory, and Father Involvement Variables: Bivariate Correlations and Descriptive Statistics (N = 135)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Income	—														
2. Education	.629**	—													
3. Financial strain	-.378**	-.165 <sup>†</sup>	—												
4. Biological child <sup>a</sup>	-.018	.080	.044	—											
5. Number of children	-.107	-.038	.161 <sup>†</sup>	.111	—										
6. Birth order <sup>b</sup>	.055	.056	-.059	-.171*	-.681**	—									
7. Child gender <sup>c</sup>	.163 <sup>†</sup>	.231**	.047	.150 <sup>†</sup>	-.022	.013	—								
8. Diagnosis severity <sup>d</sup>	-.016	-.032	-.019	.074	-.101	.053	-.127	—							
9. Empowerment	.020	-.134	-.367**	.033	-.070	.087	-.032	.048	—						
10. Role salience	.217*	.193*	-.292**	-.060	-.052	.128	.189*	-.039	.392**	—					
11. Role satisfaction	.366**	.234**	-.391**	-.007	-.077	.146 <sup>†</sup>	.122	-.163 <sup>†</sup>	.424**	.811**	—				
12. Reflected appraisals	.244**	.083	-.332**	-.063	-.189*	.224*	.050	-.081	.525**	.437**	.443**	—			
13. Attachment	.109	.024	-.318**	-.060	-.159 <sup>†</sup>	.073	-.016	-.037	.467**	.590**	.636**	.369**	—		
14. Engagement	.022	-.002	-.197*	-.179	-.152	.142	-.050	-.027	.442**	.442**	.281**	.419**	.419**	—	
15. Responsibility	.127	-.009	-.226**	-.195*	-.029	.131	-.045	-.035	.397**	.397**	.422**	.404**	.366**	.745**	—
M	3.64	3.29	1.63	0.87	2.05	0.35	1.63	0.52	4.18	4.08	4.20	3.24	4.48	2.42	1.92
Range	1-6	0-7	0-4	0-1	1-2	0-1	1-2	0-1	1-5	1-5	1-5	1-4	1-5	0-3	0-3

Note. Means and correlation coefficients are pooled across five imputations.

<sup>a</sup>0 = other, 1 = biological child; <sup>b</sup>0 = child with special needs is later born, 1 = child with special needs is first born; <sup>c</sup>1 = girl, 2 = boy;

<sup>d</sup>0 = low risk, 1 = high risk.

<sup>†</sup>*p* < .10; \**p* < .05; \*\**p* < .01, two-tailed.

of the other covariates and to empowerment, only marginally negatively related to one of the father identity indicators, and unrelated to any of the FI measures.

The results for empowerment anticipated two of the conditions for mediation; specifically, empowerment was significantly related to all three potential mediators and to all three FI outcome variables (confirmed in subsequent regression models, not shown). The three father identity variables—role salience, satisfaction, and reflected appraisals—were each related to the three FI measures, anticipating the third condition for mediation; that is, the proposed mediator variables were related to the outcome variables. The very high correlation between salience and satisfaction (*r* = .811) led to a decision to include only father role salience (along with reflected appraisals) in the regression models; however, we note that results similar to those reported here were obtained when satisfaction rather than salience was included in the regression models. Finally, we note that the three outcome measures were appropriately intercorrelated among themselves, as would be expected for variables that tap into different

but related aspects of a phenomenon, in this instance, FI.

Results from the regression models (not shown) constructed to test Hypothesis 1 that empowerment would predict FI net of the effects of control variables showed that empowerment was in fact a significant predictor of each of the FI measures, with coefficients significant at the *p* < .01 level or better. Similarly, the results of the regression analyses that provided a test of Hypothesis 2, that the father identity variables would be significant predictors of FI after taking the control variables into account, partially confirmed the hypothesis; specifically, the two father identity variables contributed significantly (*p* < .000) to the explained variance in each of the three FI outcome measures; furthermore, father role salience was significant in models of attachment and responsibility, and reflected appraisals was significant in the explanation of father engagement and responsibility.

We used stepwise regression analyses to test the mediation hypotheses for attachment, engagement, and responsibility, respectively. When empowerment was introduced into the model of father attachment, the amount of

explained variance jumped significantly, indicating that empowerment is a strong predictor of attachment. With the entry of role salience and weighted reflected appraisals as a block in the fourth step, the size of the beta coefficient for empowerment was reduced by 38%, from .501 to .281. The disappearance of or reduction in the relationship between the predictor and outcome in the presence of the mediator is the fourth condition for mediation, and the results in this step suggest that the identity theory variables partially mediate the relationship between empowerment and attachment, confirmed by the Sobel test ( $t = 3.895, p < .0001$ ). Role salience—the importance a man attaches to the role of father—in particular appeared to be the significant element in accounting for men's emotional attachment to their child with special needs. The range across the five imputations of the standardized beta weights, which allow comparisons among variables, showed that coefficients for salience were more than twice as large as those for empowerment. The results also indicated that, after taking the other variables into account, attachment was an inverse function of the number of children in the family ( $b = -0.15, p < .05$ ). Finally, the full model provided a good fit to the data and accounted for approximately 45%–47% of the variance in fathers' emotional attachment to their child with special needs.

Noticeable in the first step of the model for father engagement, a measure of the frequency of activities with the child, was the significant negative effect ( $p < .05$ ) of financial strain on engagement, which disappeared once empowerment was entered into the model. A significant negative coefficient ( $p < .05$ ) was also notable for biological child, an effect that persisted throughout the model. Empowerment was a strong positive predictor of engagement ( $p < .001$ ), an effect not fully mediated by the father identity variables, as confirmed by the Sobel test ( $t = 2.645, p < .01$ ). Indeed, although reflected appraisals was a significant predictor of engagement, the change in  $R^2$  indicated that the father identity variables as a set contributed only modestly to the explanation of father engagement. Results for the full model showed that the biological child variable and empowerment were the important predictors in the explanation of engagement, net of the effects of the other variables. Altogether, the model accounted

for approximately 30%–33% of the variance in engagement.

Responsibility was the third measure of FI. Results for financial strain ( $p < .05$ ) and the biological child ( $p < .10$ ) variables mirrored those for engagement. Empowerment showed a strong positive relationship to responsibility in Step 3 ( $p < .001$ ) and was partially mediated by role salience in Step 4, as confirmed by the Sobel test ( $t = 2.861, p < .01$ ). The standardized beta weights indicated that among the three significant predictors in the final models of each of the five imputed data sets, the coefficients for salience were the largest (ranging from .243 to .257), those for empowerment were next (ranging from .175 to .216), and those for biological child were the smallest (ranging from  $-.147$  to  $-.161$ ). The model as a whole was a good fit to the data and accounted for 30%–32% of the variance in responsibility.

To look for conditional effects of financial strain and the degree of severity of the child's diagnosis on the empowerment → FI relationship, we entered two centered interaction terms—one composed of centered forms of empowerment and financial strain and the other composed of centered forms of empowerment and diagnosis severity—into the hierarchical models as a fifth step. Across the three models, only one term was significant: There was a marginally significant positive interaction between empowerment and financial strain in the model for father engagement ( $b = 0.194, p = .06$ ). This suggests that empowerment had a greater effect on men's engagement activities with children under conditions of high financial strain than under less stressful economic circumstances. No conditional effects were found for either of the other two involvement outcomes.

## DISCUSSION

Hypothesis 1 proposed a link between empowerment and FI. Empowerment was found to predict each of the three measures of FI, an effect only slightly diluted by control variables or by other predictors. Why is this important? It indicates that empowerment, itself an intentional outcome of the family-centered service model (Dempsey & Dunst, 2004; Dempsey & Keen, 2008; Nordquist et al., 2008), may enhance the lives of children with special needs by shaping

the nature and increasing the level of involvement of fathers over and above what it might be without such family-centered services. This is a critical finding and underlines the wisdom of providing services that foster family functioning.

Hypothesis 2 focused attention on the link between three measures of father role identity (salience, satisfaction, and reflected appraisals) and FI outcomes, and here again the results confirmed that father identity variables were predictive of FI, net of the control variables. This is important both theoretically and practically. Finding that fathering behaviors can be predicted from fathers' interpretations of their roles, as measured through role salience and satisfaction, and their responsiveness to the expectations of others, as assessed through the reflected appraisals measure, conforms to the predictions of symbolic interaction theory, which state that, in general, people construct both meaning and planful action in light of their social situations. In a practical sense, these findings provide clues to theoretically grounded strategies that can affect fathering, such as enhancing a man's sense of importance in the father role, the provision of positive responses to evidence of engaged fathering, and the normalization of expectations for FI in a range of activities with children.

The confirmation of Hypotheses 1 and 2 permitted examination of Hypothesis 3, which asked whether the father identity variables might mediate the effect of empowerment on FI. The finding that empowerment is partially mediated by the social psychological measures is important because it sheds light on how a family-centered service model may affect adults: specifically, the indirect emphasis of such programs on the importance of an adult's family roles may encourage men to see more clearly their value as fathers and thereby increase a sense of connectedness to and enhanced instrumental involvement with their child with special needs. Early intervention professionals should keep this in mind and take steps to inform fathers about the important—and, in many respects, unique—role that they can play in promoting optimal development in their children with disabilities.

Hypotheses 4 and 5 focused on conditional effects, asking whether financial strain or severity of the child's diagnosis might alter the relationship between empowerment and FI. The importance of financial strain could be seen

in the bivariate models: It had strong negative relationships with empowerment and the FI measures. However, the main regression model results showed that financial strain had no independent effect on FI, once its negative relationship with empowerment was taken into account. Moreover, the mediation models were generally robust to conditions of financial stress. We interpret these findings in light of research on the deleterious impacts of financial stress for family behaviors (Conger et al., 1992; Fox & Chancey, 1998; Gutman & Eccles, 1999; Roy, 2004). Here we found that empowerment and strong father role salience can mitigate the negative effects of financial stress on FI, in this instance, with children who have special needs.

Equally important was finding that diagnosis severity did not affect the overall model. As noted earlier, although results are mixed, some researchers have found that fathers experience greater levels of stress when their child's condition is more severe (e.g., Goodman & Glenwick, 2012). We anticipated more severe diagnoses to be related to lower levels of FI, but we failed to find support for this hypothesis. Indeed, the lack of effect of diagnosis severity in both the bivariate and multivariate results is positive information about fathers' responses to a severely affected child. In other analyses with this data set, diagnosis severity was associated strongly with parental concerns about their child's future, but it is notable that none of the main variables examined here varied with the severity of the child's condition. Fenning et al. (2014) recently noted that during the early childhood years, some fathers of children with disabilities may become as involved in child care and stimulating activities as fathers of typically developing children (see also Dyer et al., 2009). Moreover, other evidence indicates that fathers of children with disabilities may be as deeply connected and emotionally available, sensitive, and predictable during interactions with their children as mothers (de Falco, Venuti, Esposito, & Bornstein, 2009). Our findings for diagnosis severity and the FI outcomes tend to support this latter body of research.

Beyond the hypothesized relationships, we note that the socioeconomic indicators—education and income—were not directly related either to empowerment or to any of the measures of FI in this sample, but they were significantly related to the three father identity measures. What might such a pattern indicate? We proffer

the suggestion that the father identity variables help us understand how socioeconomic factors play a role in FI; that is, they translate income and education into social psychological processes, such as role salience, satisfaction, and reflected appraisals.

The strong negative effect of the biological child variable on engagement and responsibility demands comment. An investigation of a possible interaction with child's gender determined that there was none: whether boy or girl, the effect of a biological tie remained in two of the multivariate models. If the biological child measure indexed a marital relationship (although this is not necessarily the case), then it might best be seen as a model misspecification and not a true effect of paternity per se.

Upon reflection, the most likely key to this puzzle appears to lie in the nature of the three different dependent variables. It is notable that there were no significant relationships between the biological child variable and the attachment measure of FI. However, unlike the measures of engagement and responsibility, the attachment measure was an emotion-based one, not a behavioral one. It may be easier for fathers to endorse deeply held feelings of connection with the biological child than to actually interact with her or him. Does this suggest merely that talk is cheap; that is, that emotion-oriented items are "easier" items for fathers to endorse and therefore less valid and reliable measures of men's involvement with children? We think not and would argue, as have others, for the need to be cognizant of the many sources of constraint on men's actions, such that men cannot always align their behavior with their values about parental involvement. Furthermore, each of the indicators of FI was measured by a limited number of items and thus necessarily lacked the range and depth that might be captured by broader measures of the three constructs.

Reliance on cross-sectional data means that, although the tested models fit the data, other models of the effects among empowerment, father identity, and FI are also plausible. On the basis of this study, we cannot assert that empowerment leads to FI; the reverse could be true, or a third variable might account for change in both. Studies with experimental or longitudinal designs are better suited for establishing directional effects and should be pursued. In addition, richer measures of FI are needed in future studies; specifically, fathers' self-reports should

be supplemented with independent observations. Future research should also include analyses of FI from the perspective of the fathers' spouses, looking for similarities and differences between fathers and mothers as well as determining how these differences relate to child outcome variables. We did not examine child outcomes in the present study or look for differential effects of mother and FI on child outcomes, and we recommend that future research move in these directions.

There are further limitations to this study. The response rate from fathers was surprisingly low (33%), especially considering the in-home connection established by the service coordinators. This speaks to the broader issue of the difficulty of recruiting fathers who will participate in programs for and studies of families of children with special needs. The sample in this study was somewhat small and not representative of the population of interest, which hampered our ability to generalize our findings beyond the constraints of our sample. It is important to note that ours was the largest sample of which we are aware that involves fathers whose children with disabilities received services from a birth-to-3 state early intervention program. The present study is therefore unique in this respect and important despite the small size of the father sample.

Although the family-centered service delivery model theoretically includes fathers in the service delivery process, the extent to which fathers experience this inclusion in practice is unclear. Therefore, studies that evaluate the extent of fathers' participation in family-centered services versus other service delivery models would be especially valuable. Some considerations for these evaluations might include assessing how variations in day (i.e., weekends vs. weekdays) and time (evening vs. daytime) of the service delivery affect father participation rates and outcomes. These studies could work toward establishing a mode of service delivery that enhances family functioning and makes an effort to explicitly include fathers. Finally, we suggest that an examination be done of the distribution of and differential access to early intervention programs with family-centered service delivery models: Are there identifiable, underserved populations of children and fathers who could profit from such programs?

## NOTE

The measures used in this study, and full tables of results, are available on request from the third author (rbillen@utk.edu). We express our deep appreciation to the participating families and for the support of the Tennessee Department of Education who provided funds to the second author to support the "Pathways to Empowerment Project." The Pathways Project was approved by institutional review boards at eight universities and one hospital that were the location sites of the nine Tennessee Early Intervention System district offices.

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