American Journal on Intellectual and Developmental Disabilities

Examining the Relationship among Parental Stress, Knowledge, and Family Empowerment for Latinx Parents of Children with Intellectual and Developmental Disabilities

--Manuscript Draft--

Manuscript Number:	AJIDD-D-24-00103R2
Article Type:	Research Report
Keywords:	Latinx parents, children with IDD, Parental Stress, Special Education Knowledge, Family Empowerment
Corresponding Author:	Kristina Rios California State University Fresno Fresno, California UNITED STATES
First Author:	Kristina Rios
Order of Authors:	Kristina Rios
	Hyeri Hong, PhD
Manuscript Region of Origin:	UNITED STATES
Abstract:	Latinx parents of children with intellectual and developmental disabilities (IDD) face unique challenges, including heightened stress, limited access to resources, and systemic barriers. This study explores the relationships among parental stress, knowledge of special education, and family empowerment using structural equation modeling (SEM). Data were collected from 96 Latinx parents participating in a culturally responsive advocacy training program. Results revealed that greater knowledge was associated with increased empowerment but also heightened stress, reflecting the dual-edged nature of knowledge acquisition. Empowerment, however, mitigated stress related to dysfunctional parent-child interactions and difficult child. These findings underscore the need for culturally responsive interventions that balance knowledge building with stress management, promoting resilience and empowerment among Latinx families navigating the complexities of raising children with IDD.

Examining the Relationship among Parental Stress, Knowledge, and Family Empowerment for Latinx Parents of Children with Intellectual and Developmental Disabilities

Abstract

Latinx parents of children with intellectual and developmental disabilities (IDD) face unique challenges, including heightened stress, limited access to resources, and systemic barriers. This study explores the relationships among parental stress, knowledge of special education, and family empowerment using structural equation modeling (SEM). Data were collected from 96 Latinx parents participating in a culturally responsive advocacy training program. Results revealed that greater knowledge was associated with increased empowerment but also heightened stress, reflecting the dual-edged nature of knowledge acquisition. Empowerment, however, mitigated stress related to dysfunctional parent-child interactions and difficult child. These findings underscore the need for culturally responsive interventions that balance knowledge building with stress management, promoting resilience and empowerment among Latinx families navigating the complexities of raising children with IDD.

Examining the Relationship among Parental Stress, Knowledge, and Family Empowerment for Latinx Parents of Children with Intellectual and Developmental Disabilities

Parents of children with intellectual and developmental disabilities (IDD) experience significantly higher levels of stress than those with children without IDD (Patton et al., 2018). These disparities are even more pronounced within Latinx families. Compared to white parents of children with IDD, Latinx parents report experiencing greater stress (Magaña et al., 2015). Furthermore, Latinx parents encounter additional challenges, including limited access to knowledge about special education (Burke, Rios, Garcia, et al., 2020) and lower levels of empowerment (i.e., the ability to advocate for and effect positive change for their child with a disability, Burke, Rossetti, et al., 2021). These factors—stress, knowledge, and empowerment—are interconnected. For example, a qualitative study of 16 Latina mothers of children with autism revealed that a lack of special education knowledge contributed to heightened stress levels (Rios et al., 2020). The study also highlighted systemic barriers these mothers encountered in accessing special education resources, with language barriers representing a significant obstacle (Burke, Rossetti, et al., 2021).

Exploring stress, knowledge, and empowerment among Latinx families is essential. Latinx parents represent one of the fastest-growing minority populations in the United States (U.S. Census Bureau, 2020), yet they continue to face greater service disparities (Magaña et al., 2015). Identifying factors related to stress within this population is critical, as is understanding how stress, empowerment, and special education knowledge vary according to a child's specific disability. Parents of children with autism, for instance, experience significantly higher stress than parents of children with other types of IDD (Hayes & Watson, 2013). However, families of children with autism also tend to report feeling more empowered and knowledgeable about their

rights, as evidenced by the higher frequency of due process hearings in this group (Burke & Goldman, 2015). Understanding these differences can help in tailoring support for families of children with IDD across various cultural and disability contexts.

In addition, cultural factors further compound the challenges faced by Latinx families. Research suggests that cultural norms, such as *respecto* (respect for authority figures) and *familismo* (a strong emphasis on family unity), may discourage parents from questioning educators or advocating assertively for their children (Lopez et al., 2001). These cultural dynamics, while rooted in values that emphasize harmony and deference, can inadvertently contribute to lower levels of empowerment when parents feel unprepared or intimidated in school settings. This highlights the need for culturally responsive interventions that not only provide knowledge but also empower parents to navigate systemic inequities confidently.

More specifically, parental stress, family empowerment, and knowledge are critical constructs in understanding the experiences and outcomes of families with children who have disabilities. These constructs have long been studied to inform interventions and policies aimed at supporting families, yet their measurement remains a complex and evolving area of research (Hong & Rios, 2024). Accurate measurement models are essential to capture the nuanced dimensionality of these constructs, as well as to ensure their applicability across diverse populations and contexts.

Much of the existing research on stress and empowerment among Latinx parents has focused narrowly on correlates without fully exploring the complex relationships among stress, knowledge, and empowerment (Rios & Burke, 2023). Understanding these interactions is critical for developing holistic approaches that address the root causes of stress and promote resilience. For instance, while increased knowledge about special education can empower parents, it may

also introduce new stressors as they navigate the system's complexities and advocate for their child's needs (Burke & Hodapp, 2014). Similarly, empowerment itself may act as both a buffer against stress and a mediator in the relationship between knowledge and stress. Examining these dynamics can provide deeper insights into how to support Latinx families effectively. To address these gaps, this study explores the relationships among knowledge, parental stress, and family empowerment for Latinx parents of children with IDD through structural equation modeling analyses. Guided by the following research questions, the study aims to advance understanding of these critical constructs within a culturally specific framework: (a) What is the effect of knowledge on family empowerment and parental stress? And, (b) What is the effect of family empowerment on parental stress?

Methods

Participants

This study included 96 Latinx parents of children with intellectual and developmental disabilities (IDD) in the United States. Inclusionary criteria required participants to be: Latino/a parents of children with IDD and registered for an advocacy training program. Participants were excluded if they did not identify as Latino/a and were not enrolled in the parent advocacy program. Here, the term Latinx describes individuals either born in or with family origins from Latin America (Comas-Diaz, 2001; Olivos et al., 2010). Although data were collected from various centers across the U.S. over five years, only 96 families participated due to two main recruitment challenges: the relatively low population of Latinx parents with children with IDD, and the demanding period in which families were invited to participate. This period can be especially taxing for parents, as involvement in research may add to their burdens. Nevertheless, to address the study's research questions and employ the complex statistical model shown in Figure 1, we conducted the power test using the semTools package in R (Jorgensen et al., 2022)

to support the challenges posed by a small sample size. The power analysis revealed that the 96 sample size produced a power of .995. It was adequate for the statistical analyses carried out in this study.

Data Collection Procedures

Institutional Review Board (IRB) approval was first obtained. Participants were selected through purposeful sampling (Patton, 2002) and recruited via local and statewide agencies, community organizations (e.g., parent support groups, Latinx serving churches), and social media like Facebook. The recruitment strategy embraced *personalismo*, a culturally responsive approach focused on building *confianza* (trust) between families and professionals (Magaña, 2000). A bilingual Latina researcher fostered connections with Latinx parents of children with IDD through volunteer work with Latinx organizations and community-based research. Eligible participants then completed a survey about the advocacy training program, which was available in both English and Spanish but was completed entirely in Spanish by all participants. The advocacy program, covered in previous research (Burke, Rios, et al., 2020; Burke, Rossetti, et al., 2021; Rios et al., 2021, 2024), provided 12 hours of training on special education policy, non-adversarial advocacy, and empowerment, and was delivered in Spanish by native Spanish-speaking Latina instructors. Each participant received a $20 stipend, and the first author entered survey data into SPSS (IBM Corp., 2013) for analysis.

Measures

Parenting Stress Index Scale-Short Form (PSI-SF, Abidin, 2012)

The Parenting Stress Index-Short Form (PSI-SF, Abidin, 2012) is a 36-item questionnaire using a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree), where higher scores indicate greater parental stress. It evaluates parenting stress in three main areas: The term,

Parental Distress (PD) refers to stress that is particularly connected to being a parent and feelings of overload; Parent–Child Dysfunctional Interaction (PCDI), which looks into stress brought on by the parent's feeling that their relationship with the child does not meet their expectations; and Difficult Child (DC), which measures stress associated with challenging child behaviors. The PSI-SF is available in Spanish (Solis & Abidin, 1991) and has shown high reliability when used with Latinx parents of children with IDD (e.g., Burke & Hodapp, 2014).

Family Empowerment Scale (FES, Koren et al., 1992)

The Family Empowerment Scale (FES) assesses empowerment across three areas: family, services, and community (Koren et al., 1992). The Family Subscale evaluates a parent's involvement in their child's life, while the Services Subscale focuses on the parent's sense of empowerment related to disability services for their child. The Community Subscale measures the parent's engagement in various community activities. For example, participants respond to items such as, "I feel that I have the right to approve all services my child receives." Responses are rated on a 5-point Likert scale, with higher scores reflecting greater empowerment. The FES has demonstrated strong reliability when used with Spanish-speaking parents of children with intellectual and developmental disabilities, with subscale alphas of 0.93, 0.89, and 0.85 (Canino et al., 2008).

Special Education Knowledge (Burke et al., 2016)

Comprised of 10 multiple choice items about special education knowledge, this scale has reliability with parents of children with IDD, including Spanish-speaking, Latinx families of children with IDD (e.g., using the dichotomous items [0 = incorrect, 1 = correct]).

Data Analysis

We conducted structural equation modeling analysis in the *lavaan* package (Rosseel, 2012) in R (R Core Team, 2024) and Mplus 8.10 (Muthén & Muthén, 1998-2017) using 96 Latinx parents of children with intellectual and developmental disabilities who responded to the Family Empowerment Scale, Parental Stress Index-Short Form (PSI-SF), and Knowledge scale. Goodness of fit was evaluated by using the comparative fit index (CFI), Tucker Lewis index (TLI), and root mean square error of approximation (RMSEA). Models are considered to be adequate fits if CFI and TLI are larger than or equal to 0.90 and RMSEA is smaller than 0.08 (Hu & Bentler, 1999). Notably, no data were missing.

Sample Characteristics

The demographics of the 96 parents are shown in Table 1. 97% (n = 93) of the individuals in the study were female, and their average age was 40.854 years (SD = 6.852). With an average age of 9.5625 (SD = 4.717), 58.33% (n = 56) of the children were 9 years of age or less, and the majority of the children were male (77.1%, n = 74). 43.8 percent (n = 42) of parents who self-reported their child's disability reported their child had autism. The majority of families (85%, n = 82) earned less than $49,000 per year. Of the parents, most claimed having some college education (22.9%, n = 22), graduating from high school (31%, n = 30), and having some high school education (28.1%, n = 27). Just 17.7% (n = 17) reported having a graduate or four-year degree.

Results

Descriptive Statistics

Table 2 presents the average scores and standard deviations of PSI, PD, PCDI, DC, family empowerment, and knowledge for all 96 Latinx parents at both the total and item levels. Pearson correlation matrices are displayed for the items by each dimension of PSI, FES, and

Knowledge in Table 3. The correlation between empowerment, knowledge, and parental stress ranges from - 0.016 to 0.451. While the items between PD, PCDI, and DC are highly correlated, items are weakly or moderately related between empowerment, knowledge, and parental stress. The assumption of normality was assessed using the Shapiro-Wilk test. Results indicated that the data were normally distributed ($W = 0.97$, $p = 0.06$).

Measurement Models

Parental Stress, Family Empowerment, and Knowledge

Measurement models of parental stress, family empowerment, and knowledge were assessed as follows: First, the conventional reliability estimates (alpha and omega) were assessed as shown in Table 2. Both Cronbach's alpha and omega (often McDonald's omega, 1999) are measures of internal consistency reliability, which assesses how well a set of items (like questions on a survey) measure the same underlying construct. Cronbach's alpha estimates reliability based on the average inter-item correlations (Cronbach, 1951). However, it is often inflated by a large number of items and can be misleading if item variances differ a lot. McDonald's Omega (McDonald, 1999) is considered a better estimate of the proportion of variance in total scores that is due to the general factor. Omega is more flexible and accurate when items differ in how well they reflect the latent trait and less sensitive to the number of items or their uniformity (Hayes & Coutts, 2021; McDonald, 1999; McNeish, 2018). With the exception of knowledge, which has alpha and omega reliability values of .639 and.650, respectively, all of the scales have high average alpha and omega coefficients, ranging from .850 to.961.

Next, based on prior theory (Hong & Rios, 2024) pertaining to parental stress, the dimensionality was evaluated with a bifactor confirmatory factor analysis model with weighted

least squares with mean and variance adjusted (WLSMV) estimation. The bifactor model consists of a general factor of total parental stress (PSI) and group factors of PD, PCDI, and DC (See Figure 1). Second, the dimensionality of family empowerment was assessed using both three-factor and bifactor confirmatory factor analysis model with WLSMV estimation, which was based on previous theory (Koren, Dechillo, & Friesen, 1992). The three-factor model comprises factors of family, service, and community while the bifactor model includes a general factor of overall family empowerment as well as group factors of family, service, and community (See Figures 2 and 3). Finally, a one-factor confirmatory factor analysis model with WLSMV, based on earlier theory (Dunst et al., 1988), was used to evaluate the dimensionality of knowledge (See Figure 4).

Model fit statistics reported in Table 4 includes the obtained model $\chi 2$, its degrees of freedom, CFI, or Comparative Fit Index, TLI, or Tucker Luis Index (in which values higher than .90 are desirable for adequate fit), and the RMSEA, or Root Mean Square Error of Approximation, (in which values lower than .08 are desirable for a good fit). Following the guidelines of acceptable model fit provided by Hu and Bentler (1999), each of the overall goodness-of-fit indices suggested that the bi-factor model fit of parental stress the data adequately: x^2 (558) = 895.78, RMSEA = 0.079, CFI = 0.918. However, the three-factor model fit of family empowerment was not good: x^2 (524) = 1155.373, RMSEA = 0.113, CFI = 0.863. Applying the bifactor model improved the model fit, as Table 4 indicated: x^2 (490) = 824.283, RMSEA = 0.084, CFI = 0.929. The one-factor model for the knowledge scale revealed that the model fit was excellent (See Table 4).

Structural Model

The structural model examined the relationships among the latent factors of empowerment (family, service, and community), parental stress (parental distress, parent-child dysfunctional interaction, and difficult child), and knowledge. Table 5 shows the results of structural equation modeling analyses. This bifactor model, as shown in Figure 1, achieved the adequate fit, $\chi 2(474) = 3510.539$, CFI = .918, TLI = .913, RMSEA = .042.

The Effect of Knowledge on Empowerment

Our findings indicated that knowledge is positively related to parents' empowerment. In other words, the more knowledge the parents possess, the more they feel empowered to possess a heightened sense of agency and control ($b = .900$, $p < .001$).

The Effects of Knowledge on Parental Stress

Knowledge is also positively associated with parental distress (PD), parental-child dysfunctional interaction (PCDI), and Difficult Child (DC). It is intriguing to note that parents with greater expertise exhibit higher levels of PD, PCDI, and DC.

The Effect of Empowerment on Parental Stress

Finally, empowerment is negatively related to parental-child dysfunctional interaction (PCDI) and perceptions of the child as a difficult child (DC). In other words, less empowered parents tend to have higher PCDI ($b = -1.980$, $p < .05$) and DC stress ($b = -1.093$, $p < .01$). A follow-up analysis was conducted to include the covariates of age, disability type, education level, and income but these covariates were found to be non-significant.

Discussion

This study produced three main findings. First, knowledge was positively related to parents' empowerment. Empowerment, in this context, reflects parents' confidence in making decisions and advocating for their children effectively. This aligns with prior research indicating

that knowledge can serve as a critical component of empowerment by enhancing parents' self-efficacy and reducing feelings of helplessness (Koren et al., 1992). Furthermore, knowledge equips parents with the tools to navigate systems such as special education and healthcare, fostering a sense of agency and control over their child's outcomes (Dempsey & Dunst, 2004).

Second, knowledge was positively associated with all three subscales of parental stress. This may seem counterintuitive; however, it reflects findings from earlier studies suggesting that increased awareness can initially heighten stress levels, as parents become more cognizant of the challenges their child may face (Hassall et al., 2005). This highlights the dual-edged nature of knowledge—it empowers parents but can also burden them with greater emotional and practical responsibilities. Notably, some research suggests that gaining knowledge about special education and child-related challenges can initially lead to heightened stress among parents. This phenomenon occurs because increased awareness often brings greater recognition of the difficulties and systemic barriers that need to be addressed. For example, Hassall, Rose, and McDonald (2005) found that parental cognitions, particularly those related to a child's needs and the required level of support, were positively correlated with stress levels. Similarly, Green (2007) noted that as parents become more informed about their child's condition and the special education process, they often experience an initial spike in stress due to the realization of the complexity of advocating for their child.

Lastly, empowerment is negatively related to parental-child dysfunctional interaction (PCDI) and perceptions of the child as difficult (DC). Less empowered parents have higher stress, which means that intervention can help empower parents. This supports the theory that empowered parents are better equipped to manage their child's behavior and engage in positive interactions. Empowerment can mitigate feelings of frustration and help parents reframe their

child's challenges more constructively (Zimmerman, 1995). Consequently, this finding underscores the critical role of empowerment as a protective factor against dysfunctional parent-child dynamics.

Limitations

Several limitations were found during the study's execution, which could have an impact on how the findings are interpreted. Frist, even if the power analysis indicated that the sample size of 96 achieved the power of 0.995, it is not advisable to make general statistical inferences from this study due to its tiny sample size. Despite being a critical choice in SEM, there is little consensus in the literature over what an appropriate sample size is. Although there is evidence that basic SEM models could be usefully tested with relatively small sample sizes (Hoyle, 1999; Hoyle & Kenny, 1999; Marsh & Hau, 1999), the minimum sample size normally required to perform SEM is believed to be between 100 and 150 (Anderson & Gerbing, 1988; Ding, Velicer, & Harlow, 1995; Tinsley & Tinsley, 1987). Second, since data are collected at one point in time, we can observe the relationships between variables, which cannot establish cause and effect. Future research must further address temporal dynamics and developmental trajectories, as the cross-sectional character of the study precludes the inference of causal links between variables. Third, the normal caregiving responsibilities that women do, especially in Latinx households with children with IDD, are probably the reason why women are overrepresented in our sample. Women's care may be considered advantageous as, as mothers, they may be the ones who are most familiar with their children's IDD needs. However, the stress levels of these parents might be misrepresented by gender-specific sampling. Therefore, care should be taken while interpreting the results. It could be necessary for future research to devise a plan for aggressively enlisting male subjects. Finally, the PSI-SF, FES, and Knowledge scales were self-reported by Latinx parents. Participants may answer in a way they think looks good or is socially acceptable,

rather than being fully honest. The reliance on self-reporting introduces potential biases such as social desirability, recall inaccuracies, and subjective interpretation, which may affect the reliability and validity of the findings. Recognizing these restrictions is critical for contextualizing our findings and guiding future research.

Implications for Research

The results of this study provide various implications for future studies. First, the highly reliability estimates for the majority of scales support their continued use in research and practice, while the lower reliability of the knowledge scale suggests the need for refinement to enhance its internal consistency. Future research should explore potential cultural or contextual factors that may influence these scales' psychometric properties, particularly for knowledge. Additionally, the descriptive statistics highlight the importance of capturing both total and item-level scores to fully understand their implications. Thus, if replicated, future research should be conducted with a larger sample size to ensure that these findings are consistent across other groups of participants.

In addition, the findings on measurement models suggest opportunities for advancing theory and practice in understanding the constructs of parental stress, empowerment, and knowledge. While the bifactor model of parental stress demonstrated adequate fit, highlighting the multifaceted nature of stress, the initial three-factor model of family empowerment did not fit well, prompting the use of a bifactor model to improve its utility. These results suggest that future research studies should utilize more nuanced modeling approaches that may better capture the complexities of empowerment. For knowledge, the excellent model fit reinforces its theoretical grounding but also points to the need for research investigating its role across diverse cultural groups to generalize the findings. Researchers should further test these models in

broader populations and explore the interplay among these constructs to refine intervention strategies.

Implications for Practice

The study's findings emphasize the importance of developing and implementing culturally responsive practices to support Latinx parents of children with IDD. The strong association between knowledge and empowerment highlights the need for targeted educational interventions that provide parents with information and resources tailored to their cultural and linguistic needs. Practitioners should prioritize workshops, informational sessions, and accessible materials that address the unique challenges faced by these families. However, given the positive relationship between knowledge and stress, practitioners must also ensure that knowledge-building efforts coupled with emotional support and stress management resources help parents navigate the complexities of caregiving with confidence and resilience.

In addition, the negative relationship between empowerment and stress, such as parent-child dysfunctional interactions and perceptions of the child as difficult, emphasizes the critical role of empowerment-focused interventions. Professionals working with Latinx families should consider strategies that foster parental agency and self-efficacy, such as strengths-based coaching, family-centered planning, and opportunities for parents to advocate within their communities. By helping parents feel more in control and capable, these approaches can reduce stress and promote healthier family dynamics. Notably, the findings support the utility of comprehensive assessment tools to identify specific areas of stress and empowerment, guiding practitioners in creating individualized, culturally competent intervention programs.

References

Abidin R. R. (2012). *Parenting Stress Index–Fourth Edition (PSI-4).* Lutz, FL: Psychological Assessment Resources.

Anderson, J. and Gerbing, D. (1988) Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, *103*, 411-423. http://dx.doi.org/10.1037/0033-2909.103.3.411

Burke, M. M., & Goldman, S. E. (2015). Identifying the associated factors of mediation and due process in families of students with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *45*, 1345-1353. https://doi.org/10.1007/s10803-014-2294-4

Burke, M. M., & Hodapp, R. M. (2014). Relating stress of mothers of children with developmental disabilities to family–school partnerships. *Mental Retardation*, *52*(1), 13-23. https://doi.org/10.1352/1934-9556-52.1.13

Burke, M. M., Rios, K., Garcia, M., & Magaña, S. (2020). Examining differences in empowerment, special education knowledge, and family–school partnerships among Latino and White families of children with autism spectrum disorder. *International Journal of Developmental Disabilities*, *66*(1), 75-81. https://doi.org/10.1080/20473869.2018.1487502

Burke, M. M., Rossetti, Z., Aleman-Tovar, J., Rios, K., Lee, J., Schraml-Block, K., & Rivera, J. (2021). Comparing special education experiences among Spanish-and English-speaking parents of children with disabilities. *Journal of Developmental and Physical Disabilities*, *33*, 117-135. https://doi.org/10.1007/s10882-020-09736-y

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297–334. doi:10.1007/ BF02310555

Dempsey, I., & Dunst, C. J. (2004). Help giving styles and parent empowerment in families with a young child with a disability. *Journal of Intellectual & Developmental Disability, 29*(1), 40–51. https://doi.org/10.1080/13668250410001662874

Ding, L., Velicer, W. F., & Harlow, L. L. (1995). Effects of Estimation Methods, Number of Indicators per Factor, and Improper Solutions on Structural Equation Modeling Fit Indices. *Structural Equation Modeling: A Multidisciplinary Journal, 2*, 119-143. https://doi.org/10.1080/10705519509540000

Dunst, C. J., Trivette, C. M., & Deal, A. G. (1988). *Enabling and empowering families: Principles and guidelines for practice.* Cambridge, MA: Brookline Books.

Gonzalez, L. M., Hernández-Saca, D. I., & Artiles, A. J. (2020). Exploring the emotional and psychological dimensions of parent-school relations: Latinx parents' experiences navigating special education. *Exceptional Children, 87*(1), 27-44. https://doi.org/10.1177/0014402920927387

Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research, 49*(6), 405–418. https://doi.org/10.1111/j.1365-2788.2005.00673.x

Hayes, A. F., & Coutts, J. J. (2020). Use Omega Rather than Cronbach's Alpha for Estimating Reliability. But. *Communication Methods and Measures, 14*(1), 1–24. https://doi.org/10.1080/19312458.2020.1718629

Hong, H., & Rios, K. (2024). Assessing the Parenting Stress Index-Short Form (PSI-SF) for Latinx Parents of Children with Intellectual and Developmental Disabilities Within Exploratory Structural Equation Modeling and Structural Equation Modeling-Based Generalizability Theory Frameworks. *Psychiatry International*, *5*(4), 842-866. https://doi.org/10.3390/psychiatryint5040058

Hoyle, R. H. (1999). *Statistical Strategies for Small Sample Research*. New York, NY: Sage.

Hoyle, R. H., & Kenny, D. A. (1999). Statistical Power and Tests of Mediation. In R. H. Hoyle (ed.), Statistical Strategies for Small Sample Research (pp. 195-222). New York, NY: SAGE Publications.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55. https://doi.org/10.1080/10705519909540118

IBM Corp. (2013). IBM SPSS Statistics for Windows [Computer software]. IBM Corp.

Jorgensen, T. D., Pornprasertmanit, S., Schoemann, A. M., & Rosseel, Y. (2022). semTools: Useful tools for structural equation modeling. R package version 0.5-6. Retrieved from https://CRAN.R-project.org/package=semTools

Koren, P. E., DeChillo, N., & Friesen, B. J. (1992). Measuring empowerment in families whose children have emotional disorders: A brief questionnaire. *Rehabilitation Psychology, 37*(4), 305–321.

McDonald, R. P. (1999). *Test theory: A unified treatment.* Mahwah, NJ: Lawrence Erlbaum

McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods, 23*(3), 412–433. https://doi.org/10.1037/met0000144

Magaña, S. M. (2000). Puerto Rican Families Caring for an Adult with Mental Retardation: the role of familism. *American Journal On Mental Retardation, 104*, 466-482.

https://doi.org/10.1352/0895-8017(1999)104<0466:prfcfa>2.0.co;2

Magaña, S., Li, H., Miranda, E., & Paradiso de Sayu, R. (2015). Improving health behaviours of Latina mothers of youths and adults with intellectual and developmental disabilities. *Journal of Intellectual Disability Research, 59*(5), 397-410. https://doi.org/10.1111/jir.12139

Marsh, H. W., & Hau, K. T. (1999). Confirmatory Factor Analysis: Strategies for Small Sample Sizes. *Statistical Strategies for Small Sample Research, 1,* 251-284.

Mendez, L. I., & Vega, D. (2020). Latinx families and special education: Addressing systemic barriers to family engagement. *Intervention in School and Clinic, 55*(5), 290-297. https://doi.org/10.1177/1053451219885938

Moreno, G., & Lopez, E. (2018). Parent-school relationships: Exploring Latino parents' perceptions of exclusion and their efforts to advocate for their children with disabilities. *Multiple Voices for Ethnically Diverse Exceptional Learners, 18*(1), 38-55.

Muthén, L.K. and Muthén, B.O. (1998-2017). Mplus User's Guide. Eighth Edition. Los Angeles, CA: Muthén & Muthén

Olivos, E. M., Gallagher, R. J., & Aguilar, J. (2010). Fostering collaboration with culturally and linguistically diverse families of children with moderate to severe disabilities. *Journal of Educational and Psychological Consultation*,20(1), 28-40. https://doi.org/10.1080/10474410903535372

Patton, K. A., Ware, R., McPherson, L., Emerson, E., & Lennox, N. (2018). Parent-related stress of male and female careers of adolescents with intellectual disabilities and careers of children within the general population: A cross-sectional comparison. *Journal of Applied*

Research in Intellectual Disabilities, *31*(1), 51-61. https://doi.org/10.1177/1362361321998560

Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling and more. Version 0.5–12 (BETA). *Journal of statistical software*, *48*(2), 1-36.

Solis, M. L., & Abidin, R. R. (1991). The Spanish version parenting stress index: A psychometric study. *Journal of Clinical Child and Adolescent Psychology*, *20*(4), 372-378. https://doi.org/10.1207/s15374424jccp2004_5

R Core Team (2024). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. https://www.R-project.org/.

Rodriguez, B. J., Blatz, E. T., & Elbaum, B. (2019). Strategies to improve parent-school relationships in special education. *Teaching Exceptional Children*, *52*(1), 47-57. https://doi.org/10.1177/0040059919862395

Salas, L. M., Secord, S. M., & Wilkinson, M. E. (2021). Supporting Latinx families of children with disabilities: Best practices for increasing knowledge and advocacy. *Journal of Multicultural Counseling and Development, 49*(3), 180-194. https://doi.org/10.1002/jmcd.12208

Tinsley, H. E., & Tinsley, D. J. (1987). Uses of Factor Analysis in Counseling Psychology Research. *Journal of Counseling Psychology*, *34*, 414-424. https://doi.org/10.1037/0022-0167.34.4.414

Trivette, C. M., Dunst, C. J., & Hamby, D. W. (2010). Influences of family-systems intervention practices on parent-child interactions and child development. *Topics in early childhood special education*, *30*(1), 3-19. https://doi.org/10.1177/0271121410364250

U.S. Census Bureau. (2020). *2020 U.S. Population more Racially and Ethnically*

Diverse than Measured in 2010. https://www.census.gov/library/stories/2021/08/2020-united-states-population-more-racially-ethnically-diverse-than-2010.html

Zarate, M. E., Aguilar, E., & Valenzuela, A. (2021). Barriers to access: How Latino parents navigate special education systems. *Remedial and Special Education, 42*(3), 165-176. https://doi.org/10.1177/0741932520923017

Zimmerman, M. A. (1995). Psychological empowerment: Issues and illustrations. *American Journal of Community Psychology, 23*(5), 581–599.

Table 1

Sample Characteristics (N = 96)

Characteristics		Percent (Frequency) or Mean (SD)
Gender: Female		96.9% (93)
Education background	Some high school	28.1% (27)
	High School Degree	31.3% (30)
	Some college	22.9% (22)
	4 year degree	8.3% (8)
	Graduate/Professional Degree	9.4% (9)
Annual household income	Less than $15,000	30.2% (29)
	Between $15 and 29,000	32.3% (31)
	Between $30 and $49,000	22.9% (22)
	Between $50 and $69,000	7.3% (7)
	Between $70 and $99,000	6.3% (6)
	Over $100,000	1% (1)
Ethnicity	Mexican	85.4% (82)
	Puerto Rican	4.2% (4)
	Central American	4.2% (4)
	South American	5.2% (5)
	Other-mixed	1% (1)
Child disability	Autism	43.8% (42)
	Other	56.2% (54)
Child gender	Male	77.1% (74)
	Child age	9.56 (4.72)

Table 2

Descriptive Statistics

Scale	Mean: Scale (Item)	SD: Scale (Item)	Alpha	Omega	Range
PSI	116.385 (3.233)	25.133 (.698)	0.931	0.934	1-5
PD	37.167 (3.097)	10.390 (.866)	0.897	0.904	1-5
PCDI	40.083 (3.34)	10.032 (.836)	0.857	0.866	1-5
DC	39.135 (3.261)	9.367 (.781)	0.85	0.856	1-5
Empowerment	114.74 (3.375)	25.516 (.750)	0.949	0.961	1-5
Knowledge	2.375 (.238)	2.079 (.208)	0.639	0.65	0 or 1

Note. PSI: Parenting Stress Index; PD: Parental Distress; PCDI: parent–child dysfunctional interaction; DC: difficult child.

Table 3

Correlation Matrix

	Empowerment	PD	PCDI	DC	Knowledge
Empowerment	1	0.196	0.211	0.057	0.451
PD	-	1	0.873	0.676	0.310
PCDI	-	-	1	0.802	0.265
DC	-	-	-	1	-0.016
Knowledge	-	-	-	-	1

Note. PSI: Parenting Stress Index; PD: Parental Distress; PCDI: parent–child dysfunctional interaction; DC: difficult child.

Table 4

Model Fit Statistics of Parental Stress, Family Empowerment, and Knowledge

	Number of items	Number of parameters	Scaled Chi-Square	DF	CFI	TLI	RMSEA
PSI : Bifactor	36	218	895.783	558	0.918	0.907	0.079
FES: Three factor	34	186	1166.373	524	0.863	0.854	0.113
FES: Bifactor	34	220	824.283	490	0.929	0.919	0.084
Knowledge: One factor	10	35	32.439	35	1	1	0

Note. PSI: Parenting Stress Index; FES: Family Empowerment Scale; Knowledge: Special Education Knowledge.

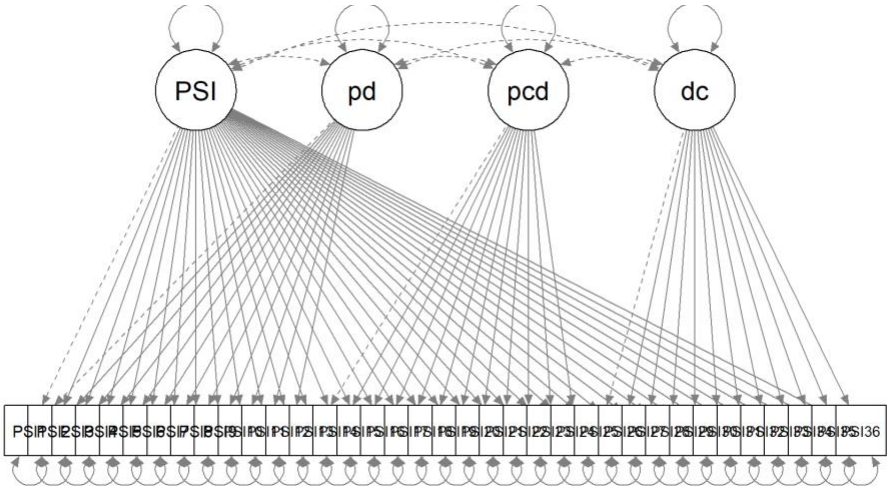
Table 5

Structural Models of the Effects of Knowledge on Family Empowerment and Parental Stress and the Effects of Family Empowerment on Parental Stress

Predictor (Independent Variable)	Outcome (Dependent Variable)	Main Effect
Knowledge	Total Empowerment	.900***
	PD	1.126**
	PCDI	2.275**
	DC	.841*
Total Empowerment	PD	-.900
	PCDI	-1.980*
	DC	-1.093**

Figure 1

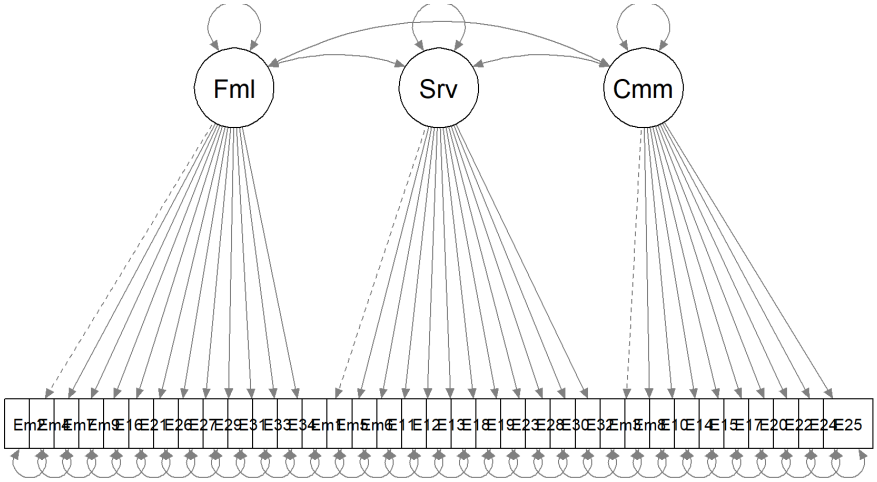
Bifactor Model of Parenting Stress Index



Note. PSI: Parenting Stress Index; PD: Parental Distress; PCDI: parent–child dysfunctional interaction; DC: difficult child.

Figure 2

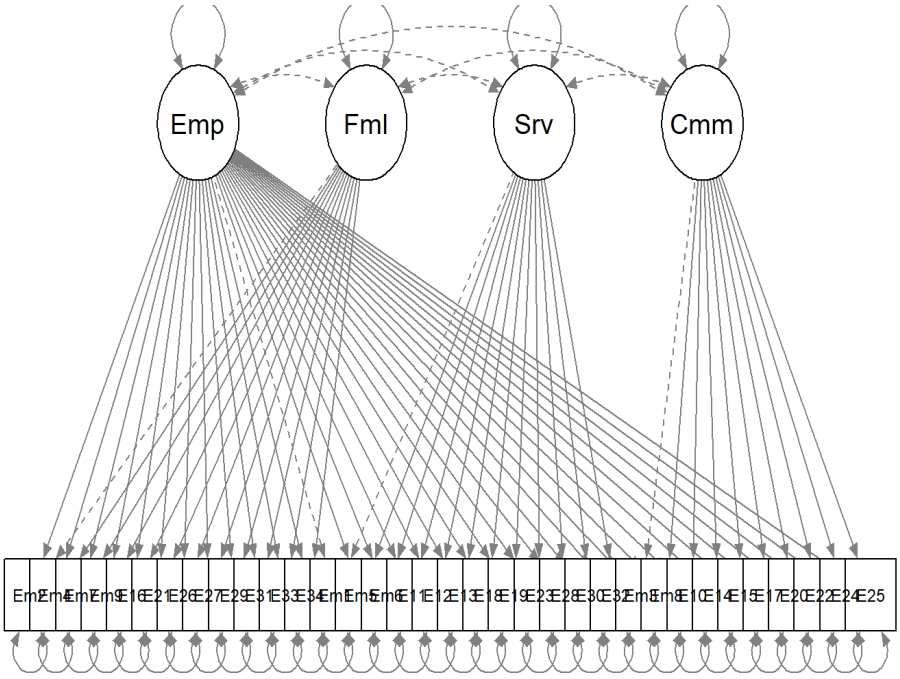
Three Factor Model of Family Empowerment Scale



Note. Fml: Family; Srv: Service; Cmm: Community

Figure 3

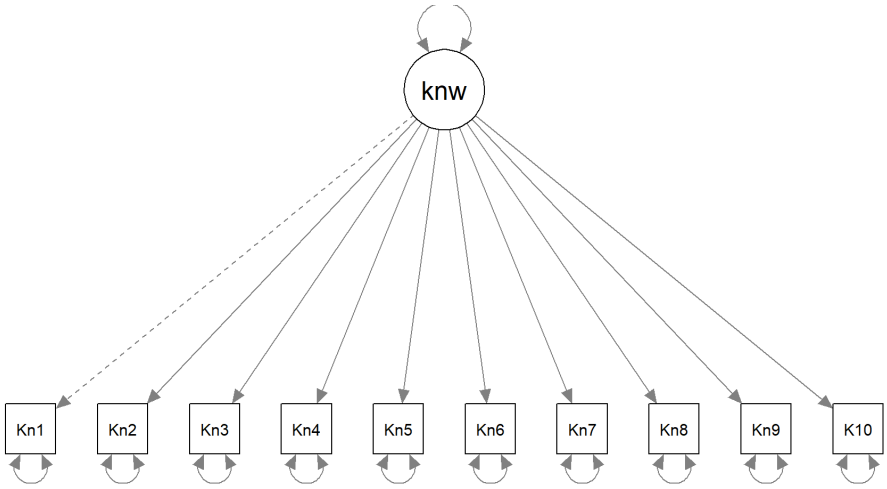
Bifactor Model of Family Empowerment Scale



Note. Emp: Empowerment; Fml: Family; Srv: Service; Cmm: Community

Figure 4

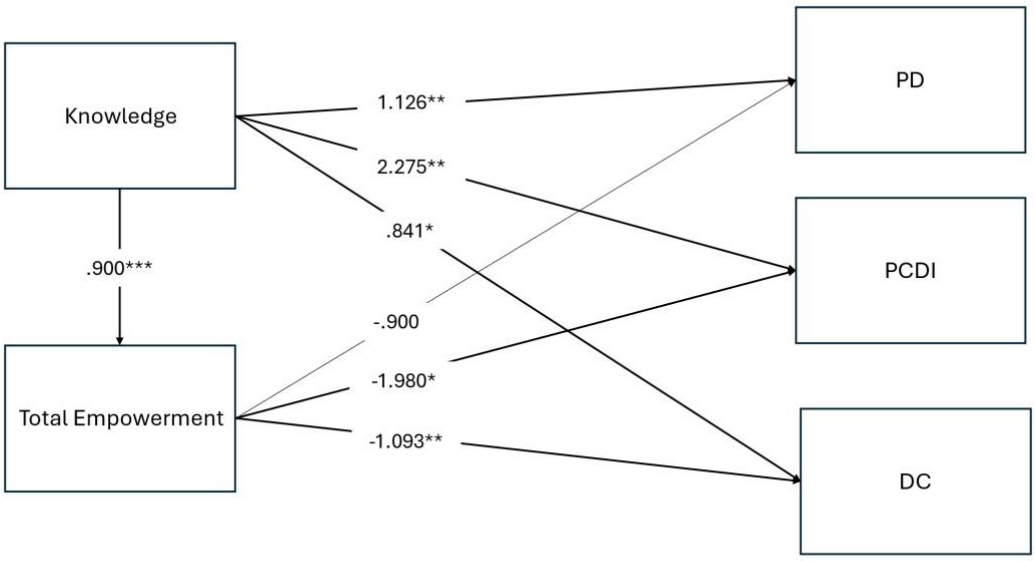
One Factor Model of Special Education Knowledge



Note. knw: Special Education Knowledge

Figure 5

Structural Model Depicting the Significant Relationships among Knowledge, Family Empowerment, and Parental Stress



Note. PD: Parental Distress; PCDI: parent–child dysfunctional interaction; DC: difficult child. *p < 0.05. **p < 0.01, ***p < 0.001.