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Identifying the Central Aspects of Parental Stress in Latinx Parents of Children with Disabilities via Psychological Network Analysis

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Abstract

This study applies psychological network analysis to explore the structure and dynamics of parental stress, offering a novel perspective beyond traditional latent variable approaches. Rather than treating parental stress as a unidimensional construct, network analysis conceptualizes it as a system of interrelated emotional, behavioral, and contextual symptoms. Using cross-sectional data from Latinx parents of children with intellectual and developmental disabilities (IDD), we compared and identified key central and bridge stress symptoms of Latinx parents of children with autism versus other disabilities that hold influential positions within the stress network. These findings suggest that certain stressors may act as hubs, reinforcing other stress components and potentially serving as high-impact targets for intervention. Network analysis also highlights how symptom relationships vary by types of disabilities, offering insight into tailored support strategies. Overall, this approach provides a dynamic and clinically actionable framework for understanding parental stress, with implications for assessment, early intervention, and personalized mental health care for parents.

Keywords: Latinx parents; children with intellectual and developmental disabilities; psychological network analysis; parenting stress; the parenting stress index-short form

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1. Introduction

Caring for children with intellectual and developmental disabilities (IDD) places considerable psychological, emotional, and financial burdens on families, particularly Latinx parents who often face additional structural and cultural stressors. These stressors are often intensified by systemic inequities such as limited access to culturally and linguistically appropriate services, underrepresentation in research and clinical support, and disparities in healthcare and education [1]. For example, many Latinx families report difficulties obtaining accurate diagnoses and navigating service systems due to language barriers, lack of insurance, or unfamiliarity with disability-related resources [2]. These external pressures add to the already intense demands of caregiving, contributing to higher levels of chronic stress, anxiety, and depression among Latinx parents.

Previous research has consistently shown that Latinx families of children with disabilities face unique barriers in navigating special education and related services, including

language access, cultural mismatches, and limited availability of culturally responsive interventions. In a review of advocacy training programs for Latinx parents of children with disabilities, Rios and Burke (2021) [3] found that of the 12 unique interventions conducted in the U.S., only two were culturally responsive to the needs of Latinx parents. This striking gap highlights the urgent need for research that centers Latinx families' perspectives and experiences.

Furthermore, cultural expectations and family roles within Latinx communities may shape how parents experience and manage caregiving. Traditional values such as familismo (emphasis on family unity and loyalty) can lead parents to prioritize caregiving over their own well-being, sometimes resulting in social isolation or limited engagement with external support networks [4]. In addition, stigma around disability in some Latinx communities may prevent families from seeking outside help or disclosing their child's diagnosis, which further exacerbates stress and feelings of helplessness. These complex dynamics underscore the importance of understanding and addressing the unique challenges Latinx families face, not only to support parental well-being but also to enhance the developmental and educational outcomes of children with IDD.

Traditional factor analysis approaches to measuring parenting stress—such as total or subscale scores from standardized instruments—treat stress as a latent variable, assuming that all items reflect an underlying construct in a uniform way. However, parenting stress is a multifaceted and dynamic experience, often shaped by the interplay of emotional, cognitive, and contextual factors. These complex relationships may be obscured in traditional latent variable models.

Network analysis offers a novel, theory-flexible approach by conceptualizing parenting stress not as a single unobservable construct, but as a system of interacting symptoms or experiences. In this framework, each item (e.g., "feeling overwhelmed" or "feeling trapped by parenting responsibilities") is represented as a node, and the statistical associations between them as edges. This allows for the identification of central nodes (i.e., the most influential stress components), bridge symptoms, and potential targets for intervention.

Network models also capture unique partial correlations between symptoms while controlling for all others, providing insight into the direct pathways through which one aspect of stress may reinforce or buffer another. This level of granularity is especially important when studying diverse populations such as Latinx parents of children with IDD, where the structure of stress may differ due to cultural, socioeconomic, or caregiving contexts.

Analyzing parental stress symptoms from the perspective of network analysis in this study allows us to address the research gap by modeling parental stress specifically in Latinx parents of children with disabilities, thereby providing insight that can inform more culturally responsive and equitable interventions, go beyond the current mean level of stress, and understand which traits might be particularly central to the experience of Latinx parents' stress. Indeed, network approaches to parental stress can better prospectively identify whether parents of children with autism in a sample will develop different or additional stress than those of children with other disabilities.

1.1. Psychological Network Analysis

In psychological research, network analysis has gained significant attention [5,6]. Advances in network science have enabled researchers to represent complex psychological phenomena as systems composed of interrelated components. This approach highlights the value of analyzing how individual elements interact within a broader structure. In network models, nodes represent individual variables, while edges illustrate the connections between them. Positive associations are typically shown with green edges, and negative

associations with red edges. The thickness and color saturation of the edges indicate the strength of these relationships [7].

In network analysis, four primary centrality measures—betweenness, closeness, strength, and expected influence—are often used to determine which nodes (e.g., symptoms or variables) exert the most influence within the network. Betweenness centrality assesses how frequently a node lies on the shortest path between other nodes, reflecting its role as a bridge or connector [8]. Closeness centrality reflects how near a node is to all others in the network, based on the total distance of the shortest paths, indicating how efficiently it can interact with or influence the rest of the network. Strength centrality refers to the overall connectedness of a node, calculated by summing the absolute weights of all its connections. Expected influence (EI) is a centrality measure in network analysis that captures how connected and influential a node is, while also considering both positive and negative relationships. A higher EI value suggests a node has a greater potential to influence other nodes, either directly or indirectly through its connections [8,9]. Together, these indices help identify the most influential nodes—those likely to have the greatest impact on the structure and function of the entire network [10].

1.2. Purpose of the Study

To the best of our knowledge, no network analysis has examined whether and how the network of stress differs between Latinx parents of children with autism versus other disabilities, an investigation that might be especially important for Latinx parents to identify the central traits of parental stress for Latinx parents of children with disabilities. This study uses network analysis to achieve two objectives. First, this study aims to demonstrate the patterns and central traits of parents of children with autism versus other disabilities and compare similarities and differences in stress between two subgroups of parents in the United States. Second, this study intends to provide a more comprehensive and actionable understanding of parenting stress, ultimately informing the development of tailored, symptom-specific interventions and support systems.

Autism and other types of IDD such as Down syndrome and cerebral palsy differ greatly in terms of symptoms, care needs, and parental stressors. Stress symptoms may vary among different groups due to differences in parenting experiences and obstacles. It is critical to evaluate whether and how key aspects of parenting stress are different based on the type of children's disabilities and to identify whether intervention tailoring is needed for parent subgroups of children with different IDD.

This study was guided by the following research questions.

1. Which stress-related symptoms or experiences are most central in the parenting stress network and could serve as key intervention targets to reduce parenting stress for parents of children with autism?
2. Which stress-related symptoms or experiences are most central in the parenting stress network and could serve as key intervention targets to reduce parenting stress for parents of children with other disabilities?
3. What similarities and differences can be observed in the parenting stress network between parents of children with autism and those with other disabilities?

2. Method

2.1. Sample

Approval from the Institutional Review Board was obtained before the study began. Researchers employed a purposeful sampling method to recruit participants. The sample consisted of 96 Latinx parents of children with intellectual and developmental disabilities (IDD) from two states in the U.S. To qualify, participants needed to self-identify as Latinx—

defined as individuals born in or with ancestral origins in Latin America [11] and be enrolled in an advocacy training program. Individuals who did not meet these criteria were excluded. Additionally, the children of participating parents had to be between five and eighteen years old and live at home, ensuring the focus remained on parent–child dynamics relevant to the study's goals. Parents completed the PSI-SF prior to the start of a 4-week, 12 h advocacy program. All participants completed the demographic form in a written format.

2.2. Sample Characteristics

The group was predominantly female, with 97% (n = 93) identifying as women, and the average participant age was 40.85 years (SD = 6.85). Most of the children were male (77.1%, n = 74), and over half (58.33%, n = 56) were nine years old or younger, with an average age of 9.56 years (SD = 4.72). Parents reported on their children's disabilities, with 43.8% (n = 42) stating their child had autism. A large portion of families (85%, n = 82) reported an annual household income of less than $49,000. In terms of education, 28.1% (n = 27) had attended some high school, 31% (n = 30) had completed high school, and 22.9% (n = 22) had some college education. Only 17.7% (n = 17) had earned a bachelor's or graduate degree.

2.3. Measure: PSI-SF

The Parenting Stress Index-Short Form (PSI-SF) is a widely used 36-item instrument designed to measure the stress parents experience while raising children, including those with disabilities. It evaluates parenting-related stress across three main domains: Parental Distress (PD), which captures stress linked to the demands of parenting and feelings of being overwhelmed; Parent–Child Dysfunctional Interaction (PCDI), which reflects stress stemming from the perception that the parent–child relationship does not meet the parent's expectations; and Difficult Child (DC), which measures stress associated with managing challenging child behaviors [12].

2.4. Data Analysis

Analyses were conducted in R version 4.5.1 [13] using 'qgraph' [7] and 'bootnet' [8]. Separate analyses were conducted for parents of children with autism versus those with other disabilities. We report on the four major centrality indices of betweenness, closeness, strength, and expected influence to highlight which symptoms may be most influential in the stress network.

To assess the robustness of centrality metrics, we examined centrality stability using the correlation stability coefficient (CS-coefficient). This measure evaluates the extent to which the rank order of centrality indices (e.g., strength, closeness, betweenness, expected influence) remains consistent after repeatedly subsetting the sample [14]. The CS-coefficient represents the maximum proportion of cases that can be dropped while still retaining, with 95% probability, a correlation of at least 0.70 between the original centrality values and those derived from the subsets—a value indicating a very large effect [15]. Following the guidelines by Epskamp et al. (2018) [8], only centrality indices with a CS-coefficient above 0.25 were interpreted, with values above 0.50 considered preferable for strong reliability.

3. Results

3.1. Descriptive Statistics

Table 1 presents descriptive statistics for 42 parents of children with autism and 54 parents of children with other disabilities, along with traditional reliability estimates (Cronbach's alpha and omega; see Table 1). Parents of children with autism reported

notably higher average scores on the overall stress, Parental Distress (PD), Parent–Child Dysfunctional Interaction (PCDI), and Difficult Child (DC) subscales (M = 120.91 for PSI; M = 39.81 for PD; M = 41.95 for PCDI; M = 39.14 for DC) compared to parents of children with other disabilities (M = 112.87 for PSI; M = 35.11 for PD; M = 28.63 for PCDI; M = 39.13 for DC). Furthermore, item-level responses revealed that parents of children with autism experienced higher stress levels on average than their counterparts (e.g., 3.317 vs. 0.975 for PD; 3.496 vs. 1.073 for PCDI; 3.262 vs. 1.087 for DC).

Table 1. Descriptive statistics.

Sample	Scale	Mean: Scale (Item)	SD: Scale (Item)	Alpha	Omega
Autism	Overall Stress	120.905 (3.358)	19.699 (0.547)	0.907	0.914
	Parental Distress	39.810 (3.317)	9.163 (0.764)	0.882	0.888
	Parent–Child Dysfunctional Interaction	41.952 (3.496)	8.166 (0.680)	0.834	0.846
	Difficult Child	39.143 (3.262)	6.411 (0.534)	0.699	0.721
Other	Overall Stress	112.870 (3.135)	28.342 (0.787)	0.94	0.944
	Parental Distress	35.111 (0.975)	10.895 (0.303)	0.898	0.908
	Parent–Child Dysfunctional Interaction	38.630 (1.073)	11.131 (0.309)	0.869	0.875
	Difficult Child	39.130 (1.087)	11.201 (0.311)	0.895	0.9

Cronbach's alpha reliability estimates ranged from 0.699 to 0.907 for parents of children with autism, and from 0.869 to 0.940 for parents of children with other disabilities. Similarly, omega coefficients ranged between 0.856 and 0.934 for the total sample, between 0.721 and 0.914 for the autism group, and between 0.875 and 0.944 for the other disabilities group.

3.2. Parental Stress Network Estimation, Centrality Stability Tests, and Strength Comparison

3.2.1. Parents of Children with Autism

Network of Parental Stress. Figure 1 depicts the network of stress symptoms, while Figure 2 plots the centrality indices of the network, which include strength, betweenness, closeness, and expected influence, using standardized coefficients (Z-scores). The network in Figure 1 illustrates variable relationships between nodes and edges. Thicker denser lines indicate stronger relationships. Blue lines indicate positive associations, while red lines represent negative ones. Table 2 provides a description of the PSI-SF items.

In terms of strength, PSI 7 (Dissatisfaction with life) and PSI 13 (Child rarely performs pleasing tasks) were statistically stronger than the majority of the other stress traits. Additional items, including PSI 6, 10, 12, 14, 11, 17, 15, 24, and 26, also appeared to exhibit greater values than the majority of the symptoms within the network. Thus, these traits appeared to be particularly important and central for understanding stress symptom networks in this sample. In contrast, the least central items were PSIs 36 (Child's high demands), 18 (Child's slow learning), and 32 (Difficulty of getting a child to do or stop doing something).

PSI 7 (Dissatisfaction with life) and PSI 13 (Child rarely performs pleasing tasks) demonstrate high levels of betweenness, closeness, and expected influence, indicating their potential importance in connecting various components within the stress network. These items appear to be highly interconnected with other symptoms and may exert significant influence across the overall stress system among parents of children with autism. This pattern suggests that they function as bridge nodes between different stress domains and

may represent a central emotional stress point that impacts multiple aspects of the parenting stress experience.

Table 2. Descriptions of PSI-SF items.

PSI-SF	Items
1	A lack of proficiency in handling things
2	Sacrificing more of my life
3	Parental responsibilities trap
4	Inability to engage in diverse activities
5	Unable to engage in enjoyable activities
6	Unhappy with recent clothing purchase
7	Dissatisfaction with life
8	Negative impact of having a child on spouse relationships
9	Feeling alone and with no friends
10	Low party expectations
11	Lack of interest in people
12	A decrease in their enjoyment of certain activities
13	Child rarely performs pleasing tasks
14	Parent's efforts for child unappreciated
15	Child smiles less than expected
16	Feels like sometimes child does not like parent and does not want to be close
17	Child's emotional instability
18	Child's slow learning
19	Child does not smile enough like most children
20	Child's performance challenges (Lack of meeting expectations)
21	It takes a long time and is difficult for child to get used to new things
22	Overall feeling of parenting
23	Parent's concern over expected closer, warmer feelings for child
24	Child's mean behavior causes distress
25	Child's frequent crying or fussing
26	Child waking up feeling unhappy
27	Child is very moody and gets easily upset
28	Child has a great deal of difficulty in getting used to schedules or changes
29	Child's strong reaction to disliked events
30	Child does not giggle or laugh when playing
31	Child's sleeping or eating schedule was harder to establish than expected
32	Difficulty of getting child to do or stop doing something
33	Parental concerns over child's behavior
34	The child's actions that bother parents
35	Child's unexpected behavior issues
36	Child's high demands

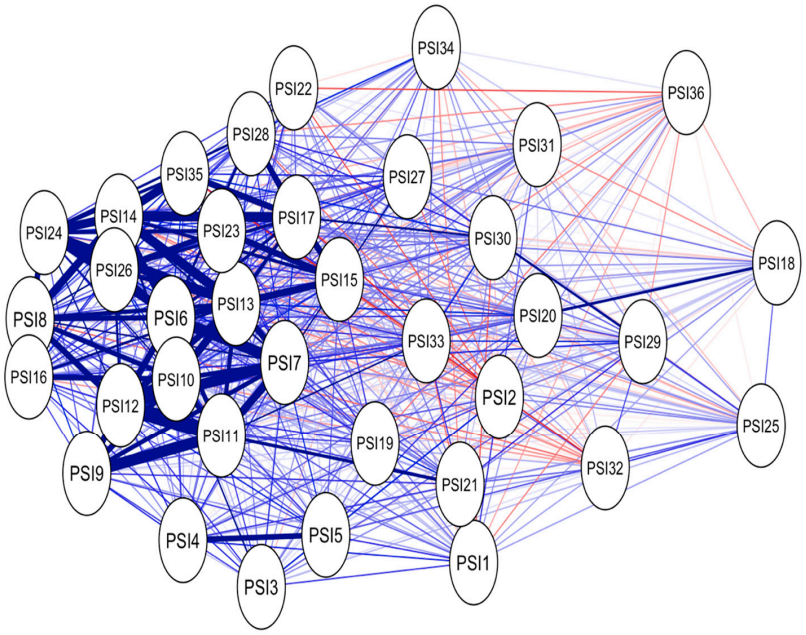

Figure 1. Estimated network model for parenting stress in the parents of children with autism.

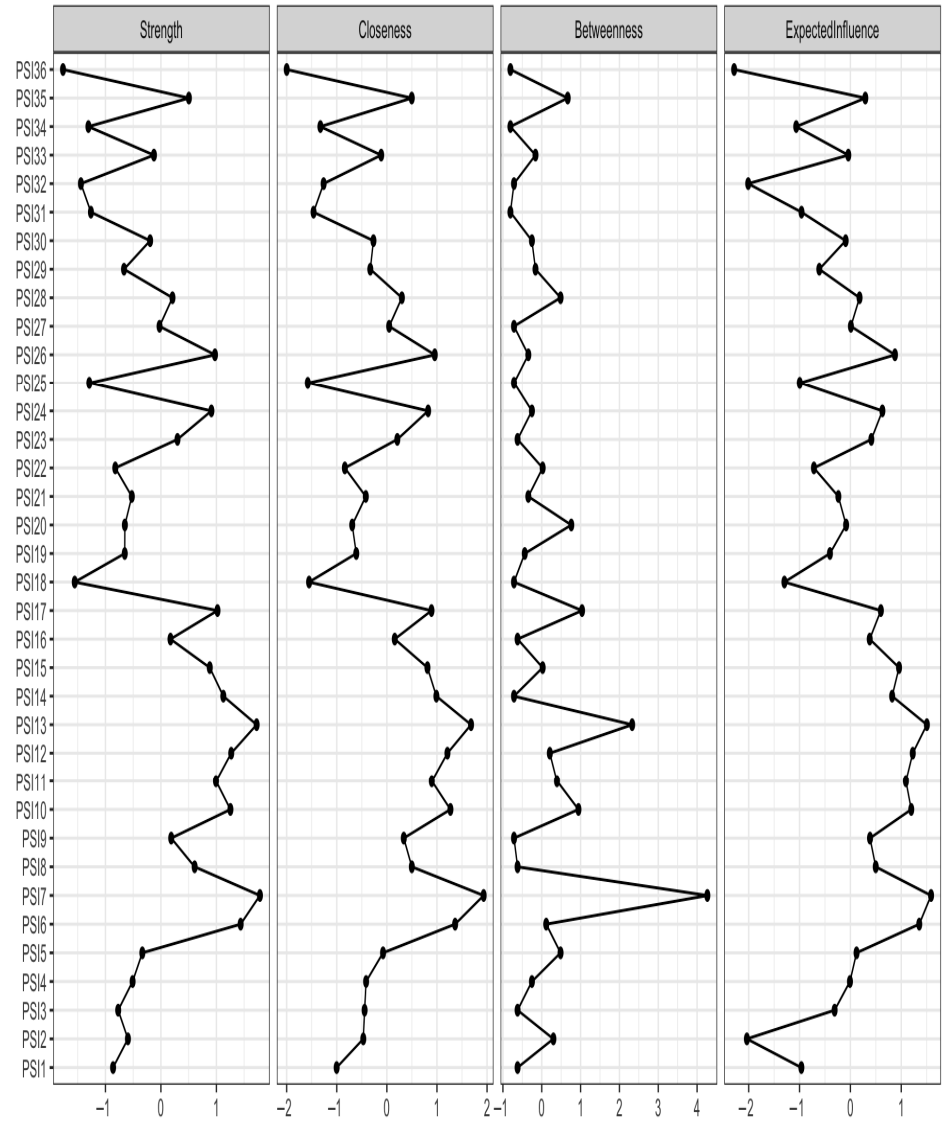

Figure 2. Centrality indices of parenting stress for parents of children with autism.

We subsequently investigated stability in the order of parental stress across the four centrality indices used in the analysis. All centrality indices reported low stability (i.e., CS-coefficient = 0.024 for expected influence; CS-coefficient = 0 for betweenness, closeness, and strength), not showing an acceptable level of stability, which is above 0.25. The ranking of the symptoms based on the four centrality indices should be interpreted with caution, as they lack robustness and reliability. This limitation may be attributed to the small sample size. We have addressed this constraint by acknowledging the preliminary nature of the study and highlighting the importance of future research that includes a larger, more representative sample for replication.

3.2.2. Parents of Children with Other Disabilities

Network of Parental Stress. Figure 3 illustrates the network of parental stress, highlighting the relationships between its individual features. Figure 4 displays the network's centrality indexes—strength, betweenness, and closeness—as well as the expected influence based on standardized coefficients. With respect to strength, PSI 14 (Parent's efforts for child unappreciated) and PSI 9 (Feeling alone and with no friends) demonstrated greater strength than most other stress-related traits, followed by PSIs 13, 8, 10, 33, 12, and 34, which also appeared to show statistically higher strength values compared to the majority of the stress traits in the network (see Figure 3). These findings suggest that these particular items play a key role in the stress network and may be especially central for understanding stress symptom networks in this sample. Conversely, the least crucial items were PSI 1 (A lack of proficiency in handling things), 2 (Sacrificing more of my life), and 3 (Parental responsibilities trap).

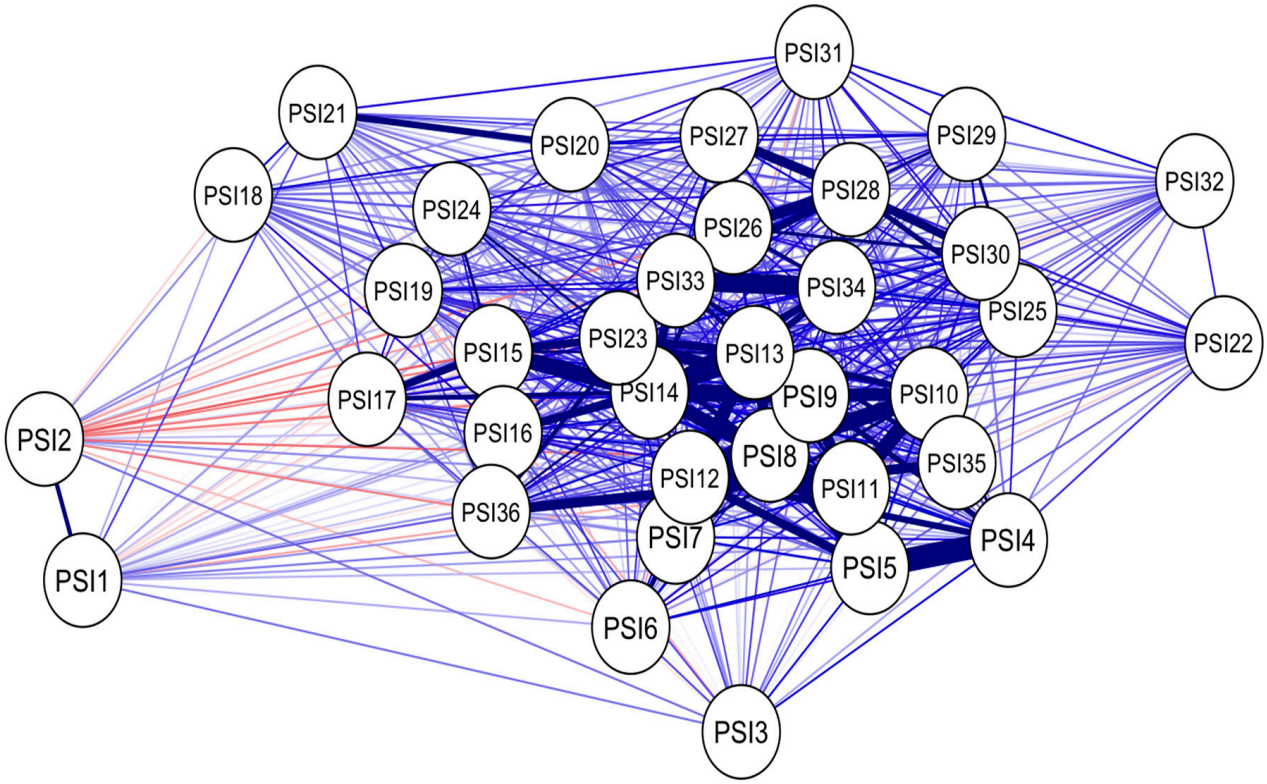

Figure 3. Estimated network model for parenting stress in the parents of children with other disabilities.

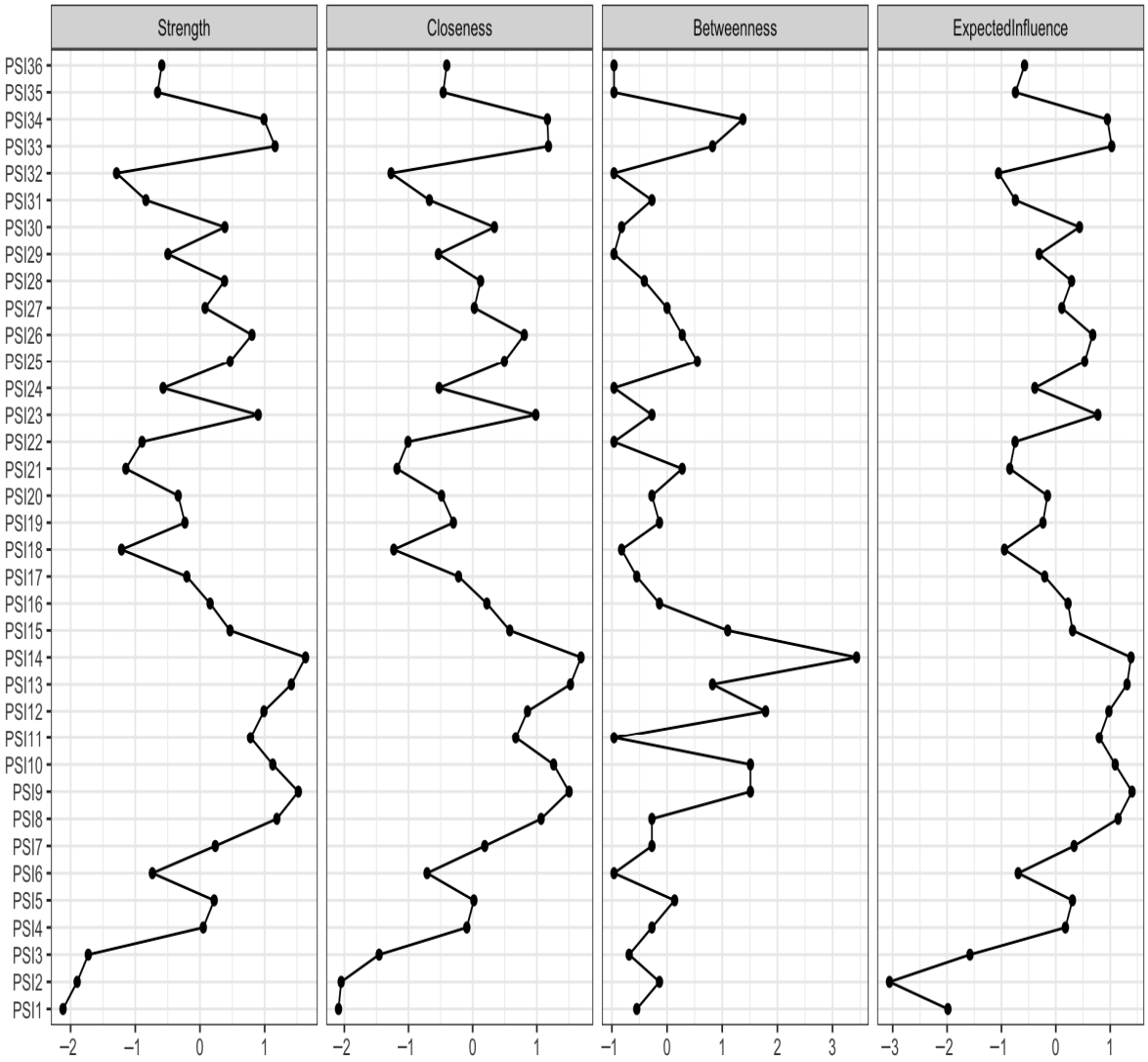

Figure 4. Centrality indices of parenting stress for parents of children with other disabilities.

With respect to betweenness, PSI 14 (Parent's efforts for child unappreciated) exhibited the highest value, indicating its potential role as a key connector within the network. This suggests it may serve as a bridge between different stress-related domains. In terms of closeness, PSI items 14, 13, 9, 10, 8, 33, 34, and 12 showed high levels, implying they are closely linked to many other nodes in the network. These items may represent central emotional stressors that influence multiple areas of the parenting stress experience. PSIs 9, 14, 13, 8, 10, and 12 demonstrated higher levels of EI and are most impactful on the overall system.

We then assessed the ordering of stress symptoms across the four centrality indices. However, all centrality metrics demonstrated low stability, with CS-coefficients of 0.019 for betweenness and 0.037 for closeness, strength, and expected influence—well below the recommended threshold of 0.25. As such, the ranking of nodes based on these centrality measures is not considered reliable. Interpretations of node importance should therefore be approached with caution. We acknowledged this as a limitation of our study, noting that it is exploratory in nature and based on a small sample size, with the potential for future replication using a larger and more robust sample.

4. Discussion

This study utilized network analysis to explore the structure, interconnections, and central traits of parenting stress among Latinx parents of children with autism in comparison to those with other disabilities. The findings offer a more granular understanding of how specific stress-related experiences relate to one another, going beyond traditional total score or factor analysis approaches. The use of network analysis allowed for the identification of highly central symptoms within the stress network, which may serve as impactful targets for intervention.

The following sections will describe the key aspects of parenting stress, the benefits of using network analysis on our sample, and implications for this study.

4.1. Central Aspects of Parental Stress Among Latinx Parents with Children with Autism Versus Other Disabilities

Table 3 presents the items that exhibit high levels of strength, betweenness, closeness, and expected influence for both parent subgroups. Parents of children with autism reported elevated stress levels, particularly in PSI items 7, 13, 6, 10, 12, and 14, whereas parents of children with other disabilities experienced higher stress in PSI items 14, 9, 13, 8, 10, 33, and 12. Notably, both groups shared common stressors, especially in PSI 13 (Child rarely performs pleasing tasks), PSI 10 (Low party expectations), PSI 12 (Reduced enjoyment in certain activities), and PSI 14 (Parent's efforts for child unappreciated).

The fact that both groups reported high stress on PSI items 13, 10, 12, and 14 suggests that these may represent universal stress points for parents of children with disabilities. Interventions designed to address daily frustrations, reduced social expectations, and loss of personal enjoyment could be beneficial across diagnostic categories [16,17].

While some stressors are shared, parents of children with autism reported elevated stress in additional areas (e.g., PSI 7: Dissatisfaction with life; PSI 6: Unhappy with recent clothing purchase), highlighting the need for autism-specific parental supports, such as mental health services, respite care, and skill-building programs focused on parental efficacy and emotional well-being [1,18].

Higher levels of stress in PSI 8 (Negative impact of having a child on spouse relationships) and PSI 9 (Feeling alone and no friends) reported by parents of children with other disabilities highlights the need for programs that support family and social dynamics and community connection and peer support, not just parent–child interactions [19,20]. Couple-based counseling or family system interventions may be valuable in helping families navigate the emotional toll of caregiving. Parental concern over the child's behavior (PSI 33) suggests these parents may benefit from accessible, evidence-based behavioral support services. Training in positive behavior support strategies, especially tailored to parents from diverse backgrounds, could reduce stress and improve confidence [21,22]. These stressors reflect that parenting stress extends beyond the child—it affects marital relationships, mental health, and social life. Support systems must therefore take a whole-family approach, recognizing how disability impacts the caregiver's ecosystem.

Given that the focus is on Latinx families, and many face barriers related to language, income, and system navigation, culturally grounded support programs or parent mentorship programs could provide opportunities to share experiences, reduce isolation, and promote emotional well-being and should address accessibility, language inclusion, and community trust [1,23]. These supports should also consider the emotional burden of caregiving that may not always be captured in general parenting programs. Support groups that are culturally responsive may offer more meaningful and relevant assistance.

Table 3. Comparison in parenting stress between parents of children with autism and parents of children with other disabilities.

	Parents of Children with Autism	**Parents of Children with Other Disabilities**
High Strength	PSI 7 (Dissatisfaction with life)	PSI 14 (Parent's efforts for child unappreciated)
	PSI 13 (Child rarely performs pleasing tasks)	PSI 9 (Feeling alone and with no friends)
	PSI 6 (Unhappy with recent clothing purchase)	PSI 13 (Child rarely performs pleasing tasks)
	PSI 10 (Low party expectations)	PSI 8 (Negative impact of having a child on spouse relationships)
	PSI 12 (A decrease in their enjoyment of certain activities)	PSI 10 (Low party expectations)
	PSI 14 (Parent's efforts for child unappreciated)	PSI 33 (Parental concerns over child's behavior)
	PSI 11 (Lack of interest in people)	PSI 12 (A decrease in their enjoyment of certain activities)
	PSI 17 (Child's emotional instability)	PSI 34 (The child's actions that bother parents)
	PSI 15 (Child smiles less than expected)	
	PSI 24 (Child's mean behavior causes distress)	
	PSI 26 (Child waking up feeling unhappy)	
Low Strength	PSI 36 (Child's high demands)	PSI 1 (A lack of proficiency in handling things)
	PSI 18 (Child's slow learning)	PSI2 (Sacrificing more of my life)
	PSI 32 (Difficulty of getting child to do or stop doing something)	PSI3 (Parental responsibilities trap)
High Betweenness	PSI 7 (Dissatisfaction with life) and	PSI 14 (Parent's efforts for child unappreciated)
	PSI 13 (Child rarely performs pleasing tasks)	
High Closeness	PSI 7 (Dissatisfaction with life) and	PSI 14 (Parent's efforts for child unappreciated)
	PSI 13 (Child rarely performs pleasing tasks)	PSI 13 (Child rarely performs pleasing tasks)
		PSI 9 (Feeling alone and with no friends)
		PSI 10 (Low party expectations)
		PSI 8 (Negative impact of having a child on spouse relationships)
		PSI 33 (Parental concerns over child's behavior)
		PSI 34 (The child's actions that bother parents)
		PSI 12 (A decrease in their enjoyment of certain activities)
High Expected Influence	PSI 7 (Dissatisfaction with life) and	PSI 9 (Feeling alone and with no friends)
	PSI 13 (Child rarely performs pleasing tasks)	PSI 14 (Parent's efforts for child unappreciated)
		PSI 13 (Child rarely performs pleasing tasks)
		PSI 8 (Negative impact of having a child on spouse relationships)
		PSI 10 (Low party expectations)
		PSI 12 (A decrease in their enjoyment of certain activities)

4.2. Evaluating the Use of Network Modeling with the PSI-SF: Advantages and Precautions

One key advantage of this approach was its ability to reveal direct relationships among specific stress indicators, offering insight into how one stressor may activate or reinforce another. This method is especially useful in diverse caregiving populations, such as Latinx families, where sociocultural and systemic stressors interact in complex ways. Although the sample size was relatively small, the inclusion of this underrepresented group is a strength, as it brings attention to the unique challenges faced by Latinx parents in special education contexts. This study contributes to the growing literature that emphasizes the importance of culturally responsive research in family and disability studies.

However, the results should be interpreted cautiously due to low centrality stability, as indicated by a centrality stability coefficient below the recommended threshold. All the centrality metrics, particularly expected influence or strength, demonstrated limited robustness, as indicated by a CS-coefficient below the recommended threshold of 0.25. This implies that the influence of individual nodes (stress indicators) may not be reliable across different subsamples, limiting our ability to draw strong conclusions about which symptoms are most central. Future studies with larger and more diverse samples are necessary to improve the robustness of these findings and validate the network structure.

While the sample size in this study was modest, it represents an important and often underrepresented population: Latinx parents of children with intellectual and developmental disabilities (IDD). Despite its size, this sample offers rich, culturally grounded insights into the lived experiences of Latinx caregivers navigating special education systems. Including this group contributes to equity in research representation, helps identify population-specific stressors, and provides a foundation for more inclusive, targeted interventions in future studies with larger cohorts.

5. Limitation

One major limitation of this study is the relatively small sample size, which restricts the generalizability of the results and should be considered when interpreting the findings. Acknowledging this limitation is important for understanding the scope of the results and guiding future research directions. While there is no universal agreement on the ideal sample size for network analysis—and determining sample adequacy is more complex than conducting a standard power analysis—sample size remains a key factor [24]. Research suggests that networks are estimated more reliably with increasing samples [8]. In this study, sample sizes of 42 and 54 participants are below that threshold, increasing the risk of Type II errors, where genuine effects may go undetected. The small sample size may also explain the instability observed in the bootstrap estimates. While small samples (fewer than 100) can still yield useful insights into underrepresented populations, such findings must be interpreted with caution. Given the exploratory nature of this research, the limited sample size should be recognized as a significant constraint, and future studies should aim to replicate these findings with larger, more diverse samples.

Second, the predominance of women in our sample likely reflects the caregiving roles traditionally assumed by women, especially within Latinx families raising children with IDD. As mothers, women may be more closely involved in their children's daily care and more knowledgeable about their specific needs, which can be viewed as a valuable perspective. However, this gender imbalance may also lead to a skewed representation of parental stress. Therefore, caution is warranted when interpreting these results. Future research should consider implementing targeted strategies to engage and recruit more male participants.

Notwithstanding this drawback, the findings highlight the potential of network analysis to uncover meaningful stress patterns and dynamic relationships in parenting stress. By identifying central stressors and the structure of interactions between them, this method may inform the design of targeted interventions that focus on the most influential aspects of the stress experience. Moreover, the inclusion of a Latinx caregiver sample highlights the need for ongoing attention to equity in psychological and educational research, particularly for families navigating systems of care for children with IDD.

Implications for Research and Practice

The findings from this study highlight critical stress dimensions that differ between Latinx parents of children with autism and those of children with other disabilities. These differences underscore the need for targeted, culturally responsive interventions that address both shared and diagnosis-specific stressors.

For future research, larger and more diverse samples are essential to improve the stability and generalizability of network findings. Longitudinal studies could further explore how central stress traits evolve over time and how they respond to specific support services. Incorporating mixed-methods approaches would also allow researchers to capture both the statistical structure and lived experiences of Latinx caregivers. Given the low centrality stability, future investigations may benefit from incorporating cross-validation or Bayesian network models to enhance the robustness of centrality estimates. Future analyses may explore alternative parameter configurations or estimation methods to identify a more interpretable and well-fitting network structure.

For practice, service providers should consider integrating culturally tailored mental health support, behavior management training, and community-based peer support into family services. Central stress indicators—such as social isolation, feeling unappreciated, or concern over child behavior—can be used to guide screening, case management, and intervention planning. Educators, clinicians, and policymakers should prioritize accessible services for low-income and underrepresented families navigating complex care systems. Moreover, caution should be exercised when using network results to inform clinical decision-making until more stable, replicable findings are available across diverse Latinx subpopulations.

6. Conclusions

By employing network analysis techniques, this study offers fresh perspectives on the important aspects of parenting stress and crucial insights on the paucity of research in this field. This study marks an important advancement in exploring the structure and key dimensions of parenting stress that reflect both shared and unique experiences among Latinx parents raising children with autism, compared to those parenting children with other disabilities.

Identifying the central traits of parental stress in Latinx parents of children with IDD intends to suggest the appropriate support systems need to be provided to advocate for and empower these Latinx parents, mostly low-income and undereducated, who may have limited access to the systems. These findings can guide the development of culturally informed interventions, assessment tools, and policies that more accurately reflect and address stress within Latinx families. Future research should seek to replicate these results with larger and more diverse samples, include more male caregivers, and examine the long-term effects of specific stress traits on family dynamics and child development. This study addresses a critical gap in the literature by amplifying the experiences of Latinx caregivers, laying the groundwork for more equitable practices within special education and disability support services. Ultimately, the insights gained here can help shape future

research and targeted interventions aimed at improving the assessment and support of parenting stress in this underserved population.

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