



Parent-Therapist Partnership Survey: Parent Feedback and Psychometric Properties

Ashley N. Murphy¹ · Linzy M. Pinkerton¹ · Alexandra E. Morford¹ · Heather J. Risser¹

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Abstract

Parents of children with disabilities are an important part of their child’s special education team. However, parents often have limited involvement in school-based therapies that are provided as part of a child’s Individualized Education Program. The field lacks tools to assess the domain and extent of parent needs for optimal engagement in their child’s special education therapies. Study one assessed the Parent-Therapist Partnership Survey’s (PTPS) (formerly known as the Needs of Parents Questionnaire -School-Based Therapy Version) measure’s clarity, fit, and comprehensiveness. Study two assessed the factor structure and internal consistency. Two factors emerged – Need to Be an Informed, Engaged Member of Their Child’s Team, and Need for Support and Guidance. Internal consistency was 0.93 for the overall scale. The PTPS can serve as a powerful measure to better identify opportunities to engage parents in school therapeutic goals while improving parent-provider collaboration in school-based therapies.

Keywords Special Education · Individual Education Program (IEP) · Children with Disabilities: Parent Engagement · Family-Centered Care

Rehabilitative and habilitative therapies, such as speech-language therapy, social work services, and occupational therapy, can help children with disabilities develop adaptive strategies and increase daily functioning (Houtrow et al., 2019; Novak & Honan, 2019). Many children ages 3–21 receive therapies in their school as part of their school-based Individualized Education Program (IEP; a federally mandated special education service plan covered under the Individuals with Disabilities Education Act [IDEA] of 2004). School-based therapies delivered through special education

services are called “related services” (also referred to as “school-based therapies”). Outpatient and early intervention service delivery settings have largely shifted to family-centered care models that emphasize family involvement in therapy planning and implementation (Dempsey & Keen, 2008). However, little work has been done regarding how parents and families can be better engaged specifically in school-based therapies. Since special education services are publicly funded through IDEA (2004), special education related services are often the most equitable and accessible therapy service delivery system for many families – particularly those who do not have insurance or access to an array of local providers, as well as for those who face barriers (time, transportation, caps on the number of sessions covered by insurance) to accessing outpatient services.

Parent participation in special education services, including related services, is a central tenant of special education law (IDEA, 2004). Furthermore, parent participation in therapeutic services has been shown to have numerous positive outcomes, such as promoting skill maintenance and generalization, increasing parent-provider collaboration, improving health, behavioral and academic outcomes for children with disabilities, reducing parent stress, and increasing parent sense of efficacy (Dixon, 1996; Gunning et al., 2019;

✉ Ashley N. Murphy
Ashley.murphy@northwestern.edu

Linzy M. Pinkerton
Linzy.pinkerton@northwestern.edu

Alexandra E. Morford
Alexandra.morford@northwestern.edu

Heather J. Risser
Heather.risser@northwestern.edu

¹ Department of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, 710 N. Lake Shore Drive, Suite 1200, 312-503-0475, 60611 Chicago, IL, USA

Hand et al., 2012; Hudson et al., 2003; McIntyre, 2008; Newmann & Wehlage, 1995; Pears et al., 2015; Roberts et al., 2006; Sofronoff & Farbotko, 2002; Stuttard et al., 2014, 2016). Furthermore, involving parents in therapy services increases the amount of time children can practice therapeutic skills during the week – instead of only having a limited amount of time per week with a school clinician, children can continue practicing skills throughout their week during their daily routines, exponentially increasing the dosage of the intervention children receive and the amount of time they get to practice therapeutic skills in different settings. To effectively involve parents in therapeutic implementation and decision-making, providers must first better understand what parents need to engage with these therapies. Previous studies have shown that parents, in particular parents from ethnically and linguistically diverse backgrounds, often face barriers to fully participating in special education services (Blue-Banning et al., 2004; Harry, 2008; Jung, 2011). Given both the legal mandate and the clear benefit to parent participation in a child’s school-based therapies, it is critical that we understand how to engage parents in school-based therapies.

Numerous studies have assessed the needs of parents of children with disabilities. However, many of these studies do not use formal, empirically validated measures (Pickard & Ingersoll, 2015; Spann et al., 2003) or use measures that are outside the scope of therapeutic care in the school setting. For example, a commonly used measure is the Family Needs Survey (Bailey & Simeonsson, 1988), which covers needs related to information, support, community services, financial needs, and family functioning for parents of children receiving early intervention services. While this survey has been used to assess the needs of parents with older children in Sweden (Granlund & Roll-Pettersson, 2001), the items and domains covered are too broad to assess the specific needs parents have when interacting with school-based providers. Furthermore, the Family Needs Survey only assesses the importance of needs and not the degree to which needs are met, a crucial component of meeting the needs of parents of children with disabilities (Brown et al., 2012).

The Family Needs Questionnaire was originally designed to assess the needs of parents with children with traumatic brain injury (Waaland et al., 1993) and was later adapted for children with developmental disabilities (Siklos & Kerns, 2006). This measure assesses the general needs faced by parents of children with developmental disabilities and the degree to which these needs are met. This measure has some items that relate specifically to interactions with therapy providers, such as “I need to be actively involved in my child’s treatments and therapies” and “I need to have information regarding [my] child’s therapeutic or educational progress.”

However, it also contains numerous items that are outside of the scope of needs related specifically to interactions with school-based clinicians, such as “I need to take week-long vacations by myself each year” (Siklos & Kerns, 2006, p. 925). Thus, the Family Needs Questionnaire is too broad to effectively assess what parents need to effectively engage in school-based therapeutic care.

The scale that most closely assesses the needs of parents when engaging with clinicians is the Needs of Parents Questionnaire (NPQ; Kristjánsdóttir, 1995). This measure assesses parent perceptions of the relative importance of 43 parent-focused needs, and extent to which each need is met, to engage in their child’s hospital-based care. The NPQ covers 6 domains - the need: (1) to be able to trust doctors and nurses, (2) for information, (3) related to other family members, (4) to feel that [parents] are trusted, (5) related to human and physical resources, and (6) for support and guidance (Kristjánsdóttir, 1995, p. 100). For each item, parents answer 3 questions: (1) “How important do you feel the following statements are for you in relation to your child’s hospitalization;” (2) “The need, concern, or service presented in the statements: how well and to what extent do you feel it is being met;” and (3) “Would you need help from the hospital to fulfill these particular needs?” The original measure demonstrated high internal consistency across the three parts of the instrument ($\alpha > 0.91$) and face validity was acceptable. No previous factor analyses were reported for the original measure.

Murphy & Risser (2022) adapted the items in the NPQ to create the (previously named) Needs of Parents Questionnaire – School-Based Therapy Version (NPQ-SBT) to assess the needs of parents specifically related to engaging in school-based therapies. They found that an average of 83% of needs were reported as important but an average of 51% of needs were unmet. Furthermore, disparities emerged regarding the needs reported as unmet between Parents of Color and White parents as well as between families with one child with a disability and two children with a disability. However, more research is needed to support these findings, as the sample sizes reported in Murphy & Risser’s (2022) paper are small ($n = 41$). Furthermore, to thoroughly investigate the needs that parents have in engaging with school-based services and to further explore the disparities reported by Murphy & Risser (2022), the psychometric properties of their adapted measure must first be determined. Since the questions of the original NPQ have been changed, and items have been both added and deleted, the content validity and the factor structure of the adapted measure must also be examined to accurately identify the constructs the adapted inventory measures. In addition, since the measure is now significantly different in purpose and content from the original NPQ, the authors have subsequently titled the measure

the Parent-Therapist Partnership Survey (PTPS), and it will be referred to as such throughout the current manuscript.

While item-level data will be useful in allowing clinicians to better support individual families, identifying the factors that emerge within the PTPS will allow providers to monitor groups of parent needs at more macroscopic levels (e.g., classroom level, grade level, school level, district level). Identifying findings for these higher levels requires creating composite categories of needs, as monitoring large numbers of parent needs at these higher levels will likely not be feasible for school personnel, given the demands on time and resources that the school setting presents. Thus, ensuring the PTPS has strong factors could support clinicians and schools in higher-level monitoring as well as developing higher-level interventions to support parent engagement more broadly.

This text describes two studies in the PTPS Development. In the first study, the authors adapted and sought parent feedback on the content of Murphy & Risser's (2022) adapted measure NPQ-SBT to enhance its content validity. After undertaking a comparison of the original NPQ and the NPQ-SBT to ensure no relevant questions were excluded by Murphy & Risser (2022), relevant items were added back into the measure and were adapted to relate to needs associated with school-based therapies. The updated measure was then sent to a group of parents of children with disabilities who reviewed items clarity and relevance. This feedback was used to further revise the measure. In the second study, the finalized measure was sent out to parents of children receiving special education related services. These responses were used to conduct an exploratory factor analysis to identify the factors that emerged to form the finalized PTPS. Internal consistency was calculated for each subscale as well as for the overall measure.

This project had three goals. First, this study engaged community stakeholders to ensure the PTPS instructions and item-wording was clear and provided a comprehensive inventory of parent needs. Second, after stakeholder feedback was incorporated, factor analyses identified the factor structure of the measure. Third, analyses assessed the internal consistency of the full PTPS and of each factor. Ultimately, the goal of this work was to create a tool to identify opportunities to improve parents engagement and parent-therapist partnerships in school-based therapies for children with disabilities.

Study One: Questionnaire Refinement and Adaptation

Methods

Original NPQ-SBT

The NPQ-SBT (Murphy & Risser, 2022) is a 22-item measure adapted from the Needs of Parents Questionnaire (Kristjánssdóttir, 1995). The NPQ-SBT covered four of the six original NPQ sub scales: (1) Parents' need to feel that they are trusted (5 Items); (2) Parents' need for information (6 Items); (3) Parents' need for support and guidance (6 Items); and (4) Parents' need for their own human and physical resources (5 items). For each item, parents were asked to rate "How important is this need to you?" on a five-point Likert scale (0 = Does Not Concern Me, 1 = Not Important, 2 = Somewhat Important, 3 = Important, 4 = Very Important). For any item marked as some level of importance (Somewhat Important, Important, or Very Important), parents were asked to rate, "How well do you feel that the need is being met by your child's service providers" on a five-point Likert scale (1 = Not at All, 2 = Seldom, 3 = To some extent, 4 = Most often, 5 = Fully). The authors recommend that future administrations of this adapted measure always ask about the level of needs being met, as opposed to only asking after a respondent indicates some level of importance for an item, in order to provide more comprehensive data. The third portion of the original NPQ, which asked parents to identify if they would need help from providers to fulfill each need, was not included in the study.

In the NPQ-SBT scoring system, needs ratings are dichotomized into "Important" (needs endorsed as "Important" or "Very Important") or "Not Important" (needs endorsed as "Does Not Concern Me," "Not Important," or "Somewhat Important"). The proportions of needs deemed as important can be calculated for each sub scale and for the entire measure. Needs were dichotomized as unmet if they were endorsed as "Not at all," "Seldom," or "To Some Extent" met. Proportions of unmet needs are calculated for each sub scale and for the overall measures.

The initial reading level of the NPQ-SBT is at the 9th grade reading level, according to the Flesch-Kincaid Grade Level Test (Onwuegbuzie et al., 2013).

Procedure

After obtaining IRB approval, 11 parents of children with disabilities were asked to assess the clarity and relevance of the items in the NPQ-SBT and additional items added in from the original NPQ deemed relevant to parent engagement in school-based therapies. Responding parents were

asked to rate how easy each item was to understand using a three-point Likert scale (“This statement is not clear to me” [Unclear], “This statement is a little clear to me but could be more clear” [Somewhat Clear], or “This statement is very clear to me” [Clear]).

Parents were also asked to answer the question, “Do you feel like the statements above [in the NPQ-SBT] adequately cover the concerns and experiences parents navigating related services might have?” on a 3-point Likert scale (Not at All, Somewhat, Yes). Parents then explained why they chose their rating in an open-response question. Next, parents were asked two open-ended questions to identify areas missed in the survey. These questions were (1) “What other needs do you, or other parents you know, have when working with related service providers that we did not talk about in our survey?” and (2) “What other needs are important for you, or other parents you know, when working with related service providers that we did not talk about in our survey?” Finally, parents provided basic demographics about themselves and their child with a disability.

Following the collection of parents’ responses, items marked as “Unclear” or “Sort of Clear” by any of the participants were reviewed by the research team and clarified. The relevance feedback provided by the participating parents was used to re-evaluate the questions in the NPQ-SBT as well as to add additional questions pertaining to issues parents find important that were not covered in the survey.

Results

Participants

Thirty-nine parents were contacted, 18 (46%) parents accessed the online REDCap survey, and 11 (28%) parents provided feedback on the survey. In addition, 9 (23%) parents provided basic demographic information. The average age of these 9 parents was 44.0 ($SD=9.1$, range: 34–59). Their children with disabilities ranged in grade level, with three children in pre-kindergarten, one child in kindergarten, two children in middle school (grades 6–8), and three children in high school. Three parents reported having a bachelor’s degree as their highest level of education, and six reported having a master’s degree. The median number of related services each child received as part of their Individual Education Program was 4 ($M=3.4$, $SD=1.3$, Range: 1–5). Three children received physical therapy services, 8 children received occupational therapy, 7 received speech/language therapy, 7 received social work services, 3 received psychological services, and 3 received other related services not listed.

Parent Review

Thirty-eight items were presented to parents for review. Twenty-eight (74%) of these items had at least one rating of “Somewhat Clear” or “Unclear” and were thus reviewed by the research team for clarity. Parent readability ratings for each item in the NPQ-SBT, and additional items added in from the original NPQ, are provided in Table 1.

Nine parents responded to the question, “Do you feel like the statements above adequately cover the concerns and experiences parents navigating related services might have?” Three (33%) indicated “Somewhat” and six (67%) indicated “Yes.” Of the three parents who indicated “Somewhat,” one parent commented on the need for greater specificity regarding the survey items that addressed need for information (e.g., to how often, what type of feedback, detail of the feedback). In addition, another parent commented on the need to emphasize the survey items in the context of the general question being asked (e.g., “How important is this need to you?”), since the items on their own were confusing. The third parent commented on the need to discuss medication, but since most school providers do not prescribe medication, the research team felt this theme was outside the scope of this measure.

In response to the question, “What other needs do you, or other parents you know, have when working with related service providers that we did not address in our survey?” parents reported the following needs: (1) more information on how disabilities impact children in the classroom and the accommodations that can help them work around the challenges; (2) sibling assistance; (3) increased collaboration between service providers to improve the information and supports families receive; (4) support with helping the child understand, express their opinions about, and benefit from their related services; (5) help navigating the “big picture” of what services are available and why services are being received; and (6) communicating in a way parents understand.

In response to the question, “What other needs are important for you, or other parents you know, when working with related service providers that we did not talk about in our survey?” the following topics were suggested: (1) child-care during meetings where parent participation is required; (2) increased urgency when determining services; (3) less judgement from providers that parents are not “doing enough;” (4) respect for and acknowledgement of cultural differences; (5) taking the child into account when working with providers; and (6) information on the written goals service providers create for the child’s IEP.

After the NPQ-SBT was adapted based on parent feedback, the final measure had a 5.3 grade reading level as calculated by the Flesch-Kincaid Grade Level Test.

Table 1 Readability Scores by Initial NPQ Domains

	Not Clear	Could Be More Clear	Very Clear
Trust			
To feel I am trusted with helping with my child's services even at home.	42% (5)	17% (2)	42% (5)
To feel that I am not blamed for my child's needs.	8% (1)	25% (3)	67% (8)
That service providers contact and consult me about the services my child needs.	8% (1)	25% (3)	67% (8)
To feel that I am needed in my child's services.	17% (2)	42% (5)	42% (5)
To be able to trust that though I am not present, my child will get the best available services.	8% (1)	33% (4)	58% (7)
Information			
That I receive written information about my child's needs to be able to review later.	0%	30% (3)	70% (7)
That I receive written information about my child's services to be able to review later.	10% (1)	20% (2)	70% (7)
That I be informed about all services my child will receive.	0%	0%	100% (10)
To learn and be informed about how my child's needs and the services they get affect children's growth and development.	10% (1)	30% (3)	60% (6)
That I be prepared for when my child is too old for services.	0%	20% (2)	80% (8)
That I be told as soon as possible about results from tests done on my child by service providers.	0%	0%	100% (10)
That I get exact information about my child's diagnosis	0%	10% (1)	90% (9)
That I get exact information about my child's specific needs.	0%	10% (1)	90% (9)
To be told why services are being done for my child.	0%	20% (2)	80% (8)
That I am taught by service providers how to help with my child's needs.	0%	0%	100% (10)
To be told what services my child needs and what services the school will provide.	0%	10% (1)	90% (9)
Support			
To have a planned meeting with other parents to share and discuss the experience of my child receiving related services in special education.	10% (1)	20% (2)	80% (8)
That service providers encourage parents to ask questions and seek answers to them.	0%	20% (2)	80% (8)
To be able to talk to other parents who have children with needs like my child.	0%	0%	100% (10)
To be able to talk to service providers about how to explain my child's needs and services to my child.	0%	22% (2)	78% (7)
To have a person at the school especially assigned to care about and to respond to parent's needs.	0%	10% (1)	90% (9)
That I get advice about my child's service needs in preparation for when my child moves to a new grade or a new school.	0%	10% (1)	90% (9)
That I get advice about my child's service needs in preparation for when my child moves from early intervention to special education.	0%	10% (1)	90% (9)
To know I can contact service providers after my child is done with their services. For example, when my child moves schools or graduates.	0%	0%	100% (9)
That I get help to recognize my child's needs.	0%	40% (4)	60% (6)
To be able to talk to family and friends about my child's needs.	10% (1)	20% (2)	70% (7)
Human and Physical Resources			
That there is flexibility in the work service providers do based on my needs.	11% (1)	33% (3)	56% (5)
That I get the chance to speak with service providers alone about my own feelings/worries.	0%	0%	100% (9)
That I be allowed to make the final decision about the services my child will get, after service providers tell me about proposed services for my child.	0%	11% (1)	89% (8)
That service providers recognize and know the feelings of parents.	0%	11% (1)	89% (8)
To feel I am important in helping with my child's needs and services.	0%	0%	100% (9)
That I get support to recognize and understand my own needs. For example, when I am feeling anxious or tired.	0%	0%	100% (9)
That I feel less anxious.	0%	11% (1)	89% (8)

Table 1 (continued)

	Not Clear	Could Be More Clear	Very Clear
To be able to observe my child’s sessions.	0%	11% (1)	89% (8)
Other Family Members			
To be able to participate in my child’s services.	0%	33% (3)	67% (6)
That I be able to explain things in connection with my child’s needs and services to my relatives, friends, and to my other child/children.	0%	33% (3)	67% (6)

Table 2 Parent and Child Demographic Factors. ^a notes that percentages do not add up to 100% since respondents could indicate multiple choices

Parent Respondent Demographics (n = 208)		Children Demographics (n = 243)	
Respondent Race/Ethnicity ^a		Race/Ethnicity ^a	
American Indian/Alaskan Native	4 (2%)	American Indian/Alaskan Native	5 (2%)
Asian	8 (4%)	Asian	18 (7%)
Black or African American	27 (13%)	Black or African American	41 (17%)
Hispanic or Latino	23 (11%)	Hispanic or Latino	31 (13%)
White	147 (71%)	White	180 (74%)
Other	7 (3%)	Other	11 (5%)
Prefer not to say	3 (1%)	Prefer Not to Say	3 (1%)
Marital Status		Disability Type ^a	
Single	35 (17%)	ADHD	90 (37%)
Living with a Partner	11 (5%)	ASD	107 (44%)
Married	144 (69%)	Cognitive/Intellectual Impairment	46 (19%)
Divorced/Separated	18 (9%)	Deafness	3 (1%)
Highest Household Education		Developmental Delay	97 (40%)
Some High School	3 (1%)	Emotional/Behavioral Disorder	43 (18%)
High School/GED	18 (9%)	Hearing Impairment	24 (10%)
Some College	17 (8%)	Motor/Physical Impairment	49 (20%)
Associate degree or Vocational Program	22 (11%)	Medical (Other Health) Impairment	48 (20%)
Bachelor’s Degree	62 (30%)	Specific Learning Disability	34 (14%)
Master’s Degree	67 (32%)	Speech/Language Impairment	106 (44%)
Advanced Degree	19 (9%)	Traumatic Brain Injury	11 (5%)
Average Parent Age, <i>M</i> (SD)	41.5 (7.0)	Visual Impairment	26 (11%)
	Range: 22–60	Other	33 (14%)
Income		Grade Level	
Below \$50,000	49 (24%)	Has not started school	2 (1%)
\$50,000 - \$99,999	60 (29%)	Pre-Kindergarten	25 (10%)
\$100,000 - \$149,999	35 (17%)	K-5	119 (49%)
\$150,000 and Above	42 (20%)	6th-8th Grade	44 (18%)
Prefer Not to Say	15 (7%)	High School	50 (21%)
Community Setting		Prefer Not to Say	3 (1%)
Rural	28 (13%)	School-Based Therapy	
Suburban	134 (64%)	Physical Therapy	70 (29%)
Urban	45 (22%)	Occupational Therapy	138 (57%)
Total Children in Household, <i>M</i> (SD)	2.2 (1.2)	Psychological Services	58 (24%)
	Range: 1–8	Speech/Language Therapy	186 (77%)
Total Children with a Disability		Social Work	88 (36%)
1	162 (78%)	Vision Services	5 (2%)
2	36 (17%)	Hearing Services	4 (2%)
3	5 (2%)	Nursing Services	2 (1%)
4 +	5 (2%)		

Readability scores at the 5th grade reading level are considered an appropriate reading level for measures for

adults (Calderón et al., 2006). As mentioned in the introduction, this newly adapted measure was renamed to the Parent-Therapist Partnership Survey (PTPS) due to the drastically different content and nature of this measure from the original NPQ.

Study Two: Assessing the Psychometric Properties and Factor Structure of the PTPS

Methods

Procedure

The revised PTPS was sent to parents of children receiving related services via the REDCap survey platform. Parents were recruited through Facebook groups for parents of children with disabilities, local community organizations, and Researchmatch.org. The PTPS took roughly 5 min to complete, but the entire survey took ~25 min, as it was part of a larger study.

Data Analysis

The importance items on the PTPS were assessed using an exploratory factor analysis (EFA) to identify relevant factors within the overall measure. Parents of children who reported receiving at least one related service as part of special education services as well as those with complete PTPS responses were included in the analyses. The research team chose to only assess the importance ratings, as the needs met-related items were designed to serve as a needs assessment to identify items to target for improved parent engagement. With this design, each factor measures the extent to which the importance of the need identified in the included items covary together such that if one of the needs is felt to be important, the others that make up the factors are also felt to be important. In addition, the research team determined future administrations of this measure would benefit from always asking about needs fulfillment (as opposed to only asking about needs fulfillment if the needs were indicated as at least somewhat important), for ease of administration and comprehensive data collection, but the team only collected partial needs responses due to the original recommendations of Murphy & Risser (2022). Thus, conducting a factor analysis of the incomplete needs data available would not provide accurate findings that could be beneficial for future administrations.

Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin Test were conducted to ensure that the data was suitable for an EFA. A scree plot of the eigenvalues of each item was run to identify the number of factors in the model. Principal axis

factoring using an obliminal rotation was used to conduct the EFA. Items with factor loadings below 0.35 were cut from each factor.

Once a final model had been developed via the EFA, Cronbach's Alpha was calculated to determine the internal consistency of the entire measure and of the subscales.

Results

Participants

In total, 655 parents opened the survey, 406 (62%) of parents consented to participate in the survey, and 258 (39%) of parents completed the survey. The research team eliminated any responses that indicated that the respondent did not have a child receiving related services as part of their IEP or that the respondent did not complete the PTPS. As a result, 208 (32%) of responses were utilized in the following analyses.

All respondents analyzed consented to participating in the study, and all respondents indicated being the legal parent or guardian of the child[ren] with disabilities about whom they were reporting. One hundred twenty-nine participants (62%) reported being the primary caregiver for their child[ren] with disabilities, 77 (37%) reported parenting equally with their partner, and 2 (1%) reported not being the primary caregiver. One hundred eighty-five participants (89%) identified as female. When asked about their work status prior to the start of the COVID-19 pandemic, 105 (50%) of respondents reported being employed full-time, 49 (24%) of respondents reported being employed part-time, and 54 (26%) of respondents reported being unemployed.

The participants had 269 children with disabilities total, and 243 children were receiving therapeutic services as part of their special education services. Children were on average 10 years old ($SD=4.6$). 88% of the children were their parent's biological child, 10% were adopted, and 2% were under the care of a guardian. One hundred eighty-four (76%) children attended a public neighborhood school, 14 (6%) attended a therapeutic day school, and 6 (2%) were over the age of 18 but still receiving special education services, as individuals with disabilities can receive services through their 21st year. The remainder of these children attended other school settings, such as Head Start programs or private schools.

Parents reported that children had an average of 3 disabilities ($SD=2$, range = 1–10), although one parent did not disclose their child's diagnosis. Children received an average of 2 therapies ($SD=1.1$, range = 1–6) in the school setting. 57% of children received outpatient services in addition to school services.

Table 3 Items cross-loading onto the third EFA factor

Item	1	2	3	Outcome
That I regularly receive written information about the therapies my child receives that I can review later.	0.345		0.560	Dropped
That I regularly receive written information about my child's needs that I can review later.	0.391		0.499	Added to Factor 2
That my child's opinion is taken into account when deciding what specific therapeutic interventions my child will receive.	0.355		-0.435	Added to Factor 2
That I am viewed as competent in helping with my child's therapies.			0.379	Dropped
That school-based clinicians coordinate their work with my child's outside healthcare providers.			-0.343	Dropped

Exploratory Factor Analysis

The results of the Bartlett's Test of Sphericity indicated that the matrix was significantly different from an identity matrix ($\chi^2(820) = 4088.58, p < 0.001$). Additionally, the Kaiser-Meyer-Olkin Test indicated that the overall MSA was equal to 0.9, and no item had an MSA value below 0.5, so no items needed to be removed before analyses. Scree plot analyses indicated a three-factor model was best suited for the data.

After running the EFA, items in the third factor did not form a theoretically sound construct. To account for this issue, and to support the construct validity of the model, items that cross-loaded on the second factor were added to this factor and the remaining items in the third factor were dropped. Table 3 outlines the outcomes of each item in the third factor. Also, the items "That I know what the next steps are when my child ages out of school-based therapies" and "That my child's school-based clinicians provide me with information on how my child's disabilities will impact them in the classroom" were dropped as they did not load sufficiently onto any factor. High scores on the remaining two factor indicate that needs of this "kind" are felt to be more important by parents and the items within each factor covary.

Together, these analyses yielded a 36-item measure with two factors: Need for Support and Guidance (17 items) and Need to be Informed, Engaged Members of the Child's Team (19 items). Table 4 provides the final items included in each factor. The mean value for b factor was calculated for each participant. The correlation between factor means was 0.69.

Internal Consistency. Internal consistency was calculated for the entire scale and the two factors using Cronbach's Alpha. Full scale internal consistency with 36 items was adequate, $\alpha = 0.93$. Internal consistency for Need to Be

Informed, Engaged Members of the Child's Team, and Need for Support were also adequate, 0.89 and 0.90, respectively.

Measure Availability. The revised PTPS is freely available at <https://sites.northwestern.edu/familycareparentinglab/ptps/> or through contacting the corresponding author. It is also freely available online as a REDcap survey that will score responses and provide a list of needs indicated as both important and unmet for parents and providers, also available through the previously mentioned link.

Discussion

This study assessed the psychometric properties and factor structure of the PTPS. After completing an iterative revision process, the final version of the PTPS consists of 36 items that fall into two factors – Need to be Informed, Engaged Members of the Child's Team, and Need for Support and Guidance. The internal consistency for both the entire measure and the two factors was adequate, suggesting that the measures and factors both represent sound constructs. In fact, the internal consistency of the overall measure was stronger than the original NPQ ($\alpha = 0.93$ vs. $\alpha = 0.91$ in Kristjánsdóttir, 1995). Furthermore, the PTPS appears to have good content validity, as parents who participated in the readability study indicated that the items represented their experiences navigating school-based therapies. Thus, this study suggests the PTPS has sound psychometric properties, supporting the use of the PTPS by school-based providers to better understand parent needs and opportunities to improve parent engagement with their child's providers and services.

The need for support and guidance has frequently been mentioned in the literature as a commonly reported need for parents of children with disabilities (Bailey & Simeonsson, 1988; Ellis et al., 2002; Kreutzer et al., 1994; Provenzi et al., 2021). However, these needs appear to be infrequently met (Ellis et al., 2002; Galpin et al., 2018; Garshelis & McConnell, 1993; Kreutzer et al., 1994; Murphy & Risser, 2022; Srinivasan et al., 2021; Resch et al., 2010; Whiting, 2014). Adequate support for both parents' own needs, as well as the needs of their child, is an important element in parenting children with disabilities, as addressing parents' own needs is critical for optimizing family functioning and parent-child interactions (Silkos & Kerns, 2006). Despite this, providers, and parents themselves, tend to focus on the needs of the child, often at the expense of meeting parent needs (Garshelis & McConnell, 1993; Waaland et al., 1993). To ensure optimal therapeutic efficacy and improve outcomes, Albanese et al., (1996) state that professionals must begin with assessing the "needs and wishes of the family" (p. 100) to provide appropriate social supports. The PTPS allows

Table 4 Exploratory Factor Analysis. Note: h^2 refers to the communality for each item

Construct	Item	1	2	h^2	
Parents' Needs for Support and Guidance	That I get support to recognize and understand my own needs. For example, when I am feeling anxious or tired.	0.843		0.594	
	To get advice from school-based clinicians about how to get support from family and friends regarding my child's needs.	0.753		0.662	
	That I do not feel judgement from school-based clinicians that I am not doing enough to help my child.	0.648		0.349	
	That I feel less anxious about the needs my child has.	0.640		0.349	
	To feel I am important in helping with my child's needs and services.	0.619		0.429	
	That I get the chance to speak with school-based clinicians alone about my own feelings/worries.	0.581		0.502	
	That there is flexibility in the interventions that school-based clinicians provide based on my family's needs.	0.536		0.397	
	That I get information on how to handle my child's behavior.	0.534		0.322	
	To have a planned meeting with other parents to discuss the experience of our children receiving school-based therapies.	0.498		0.446	
	To have a person at the school especially assigned to respond to parents' needs.	0.497		0.360	
	To know I can contact school-based clinicians after my child is done with their services. For example, when my child moves schools or graduates.	0.495		0.411	
	To feel that I am needed in helping with my child's therapies.	0.487		0.433	
	To be able to talk to other parents who have children with needs like my child.	0.456		0.332	
	That school-based clinicians recognize the feelings of parents.	0.423		0.367	
	To talk to school-based clinicians about how to explain my child's needs and therapies to my child.	0.402		0.380	
	To feel I am not blamed for the special needs my child has.	0.376		0.146	
	That school-based clinicians acknowledge and respect cultural differences.	0.350		0.171	
	Parents' Needs to Be Informed, Empowered Members of their Child's Team	To be told why each therapeutic intervention is being used with my child.		0.773	0.551
		That I get specific information about my child's unique needs.		0.648	0.470
That I get specific information about my child's diagnosis.			0.630	0.387	
That I be informed about all therapeutic interventions my child will receive.			0.629	0.390	
That I be told as soon as possible about results from tests done on my child by school-based clinicians.			0.627	0.436	
To be told what therapies my child needs and what therapies the school can actually provide.			0.551	0.386	
That I get advice about the services my child will need in preparation for when my child moves to a new grade or a new school.			0.538	0.336	
That school-based clinicians encourage parents to ask questions.			0.500	0.428	
To learn about how my child's needs and therapies affect their growth and development.			0.499	0.457	
That I learn how to recognize my child's therapeutic needs.			0.458	0.383	
That school-based clinicians help me understand my child's special education rights.			0.455	0.386	
To be able to implement therapeutic strategies at home.			0.443	0.292	
To be able to come to the school to observe my child's therapy sessions.			0.428	0.374	
That clinicians consult me about the school-based therapies my child needs.			0.417	0.256	
That I be allowed to make the final decision about the therapeutic interventions my child will get, after school-based clinicians tell me about what interventions they are proposing for my child.			0.394	0.304	
That I regularly receive written information about my child's needs that I can review later.			0.391	0.591	
That I am taught by school-based clinicians how to help with my child's needs and therapies.			0.383	0.451	
That I can explain my child's needs and services to friends, family, and other children.		0.350	0.345		
That my child's opinion is taken into account when deciding what specific therapeutic interventions my child will receive.		0.355	0.258		

providers to assess parent needs and identify opportunities to improve parent engagement, which could have significant benefits for child outcomes.

The need to be an informed member of a child's team is also a common theme in the literature that also aligns with the goals of special education, as outlined by IDEA (2004). Parents frequently report needs for information, particularly about obtaining and engaging in services, in order to best support their children with disabilities (Bailey &

Simeonsson, 1988; Brown et al., 2012; Garshelis & McConnell, 1993; Granlund & Roll-Pettersson, 2001; Ellis et al., 2002; Kreutzer et al., 1994; McLennan et al., 2008; Pickard & Ingersoll, 2016; Resch et al., 2010; Waaland et al., 1993). Parents also report having limited involvement and input in the development, implementation, and evaluation of IEP-related goals and services (Spann et al., 2003), despite equal parent participation being a core tenant of special education law (IDEA, 2004). Additionally, parents have expressed

a desire to learn and implement interventions themselves, particularly following the increased parent involvement that resulted from the COVID-19 pandemic (Pickard & Ingersoll, 2016; Murphy et al., 2021). The involvement of parents in interventions for specific needs has shown to both directly target core deficits in children with specific disabilities (e.g., ASD) while also reducing parental stress (Ingersoll & Wainer, 2013; Tonge et al., 2006). Thus, addressing parents needs can promote parents' active participation as part of the IEP team, supporting efforts to optimize child outcomes.

As shown by this study, the PTPS provides an easy-to-use, parent-validated tool for school personnel, researchers, and policymakers to identify parents needs and to optimize parent engagement. The PTPS allows clinicians to identify individual areas that could be used to promote engagement with specific families. In addition, the newly created factor structure allows clinicians, schools, and researchers to monitor overarching factors for macro-level tracking and intervention. This level of analysis could support schools in identifying disparities in engagement across different categories of families and students, as well as support researchers in identifying disparities throughout different regions across the country. Finally, understanding such patterns can help to inform policy. Thus, the PTPS could be a useful tool for multiple levels of tracking, monitoring, and intervention.

Limitations

There are several limitations to these findings. First, while internal consistency was adequate, it is unknown whether this measure would be sensitive to detect changes resulting from efforts to improve parent engagement. Test-retest reliability could provide further information about the stability of the constructs and response to interventions. Second, convergent and discriminant validity in comparison to other needs assessments is recommended. Third, the sample that participated in the readability analysis was recruited from a prior study with the NPQ-SBT. Thus, it is possible that the clarity and comprehensiveness of the PTPS would not be viewed in the same manner by parents in the general population that are completely new to the measure. More work is needed to ensure that the measure adequately covers and describes the needs of parents of children with disabilities in the general population.

Conclusion

This study provides support for the Parent-Therapist Partnership Survey (PTPS) to fill a gap in the field. The PTPS has adequate internal consistency and validity as a measure

of parent needs in the context of their children's school-based therapy services. Exploratory factor analyses reveal a two-factor structure - (1) the Need to be Informed, Engaged Members of the Child's Team, and the Need for Support and Guidance. The PTPS provides a useful resource for parents, service providers, and policy makers to optimize parent-provider collaboration in school-based therapies. Given that parent involvement in rehabilitative and habilitative therapies for children with disabilities has shown to have great benefits and that parent participation is a key component of special education practices, this measure could be a useful tool in measuring the needs parents have to optimally engage with school-based providers.

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