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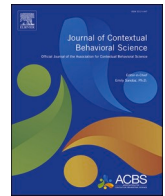
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# A psychometric evaluation of the parental acceptance and action questionnaire (PAAQ) in parents of children with and without disabilities

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## ABSTRACT

Parental psychological inflexibility, particularly characterized by experiential avoidance, represents a significant risk factor for chronic stress and psychological distress. The Parental Acceptance and Action Questionnaire (PAAQ) is a context-specific instrument for the measurement of parental psychological inflexibility. This study aimed to evaluate the psychometric properties of the original composite version of the 19-item PAAQ across the three distinct Swedish samples; a community sample ( $n = 1018$ ), a clinical sample of treatment-seeking parents of children with disabilities ( $n = 667$ ), and a test-retest sample ( $n = 337$ ). The Principal Axis Factoring of the PAAQ in the community sample yielded a 16-item, three-factor solution: 1) action-taking and flexibility in the parenting context, 2) experiential acceptance of internal experiences related to parenting, and 3) experiential acceptance of child's internal experiences. This factor model was supported by the confirmatory factor analysis in the test-retest sample. The associations observed with related constructs ( $r =$  between 0.49 and 0.61,  $p < 0.0001$ ) indicated good discriminant validity. The Receiver Operator Characteristic analysis demonstrated that the PAAQ can effectively classify between the clinical and community sample, achieving 79% sensitivity and 68% specificity. The showed good test-retest reliability ( $r = 0.82$ ). As anticipated, the parents in the clinical sample showed greater psychological inflexibility compared to parents in the community sample. To conclude, the 16-item Swedish version of the PAAQ demonstrates adequate to good psychometric qualities.

## 1. Introduction

The well-being of a parent influences a child's learning, health, and adjustment. The parent-child relationship is characterized by not only a unique bond but also by a bidirectionality: both a parent and a child influence one another (Leeming & Hayes, 2016). Parenting is seldom stress-free but according to extensive research, stress in families with a child with disability is both extreme and chronic (Barroso et al., 2018; Hayes & Watson, 2013; Singer et al., 2007; Theule et al., 2013). The unique joys and challenges of parenting a child with disability require flexibility, distinctive skills, and efficient coping strategies. However,

the external stressors (e.g., advocating for the child's needs, endless chores) and internal stressors (e.g., the emotional rollercoaster of mixed feelings and the negative self-talk) common to challenging parenting may make it more difficult to maintain a flexible array of parenting strategies, including warmth and safe boundaries (Burke & Moore, 2015; Lindo et al., 2016).

Recent studies suggest that parents in challenging parenting contexts often overuse *experiential avoidance* (EA) (Cheron et al., 2009; Emerson et al., 2019), and are more prone to psychological *inflexibility* in situations which would benefit from flexible parenting actions (Prevedini et al., 2020). EA is defined as an unwillingness to remain engaged in

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unpleasant private events (feelings, thoughts, and bodily sensations) and the experience of being “trapped” in repeated attempts to control (change, predict, avoid) the contexts in which these experiences may arise (Hayes, 2004). The EA behaviors are maintained by negative reinforcement, i.e., successful avoidance or escape provides a momentary relief, and motivates the increased use of the same or similar behaviors in the future (Cooper et al., 2007). Not seldom, the search for antecedents (inner or outer triggers) that signal possible dangers become a part of a rigid, rule-governed behavior repertoire (Törneke et al., 2008). According to Relational Frame Theory (RFT), EA is often triggered by words in the person’s internal self-talk which acquire the same stimulus functions as the “real things”. This process leads to attempts to control these behaviors as one controls the external environment (Villette et al., 2015). While EA does not always entail a problematic course of action, chronic and excessive EA contributes to increased rule-governed behavioral inflexibility (Hayes et al., 2006; Jones et al., 2015; Moyer et al., 2018; Shea & Coyne, 2011). EA/psychological inflexibility are associated with a wide-ranging number of psychological and behavioral difficulties (Ruiz, 2010). It has been suggested that EA has a mediating role in the development of conditions such as anxiety (Aschenbrand & Kendall, 2012), depression (Spinhoven et al., 2014), and chronic stress (Hayes et al., 2006; Moyer et al., 2018; Shea & Coyne, 2011).

The opposite of EA is experiential acceptance, which refers to openness for inner experiences (including stress reactions such as fight or flight) without avoiding, belittling, or prolonging such experiences (Bond et al., 2011; Whittingham & Coyne, 2019). Experiential acceptance is a central part of psychological flexibility (PF), a psychological construct targeted in the Acceptance and Commitment Therapy (ACT) (Hayes et al., 2009). The PF is viewed as a skills repertoire characterized by mindful attention to the on-going context, observing and defusing self and commitment to values-directed action-taking in spite of barriers such as internal experiences (Bond et al., 2011; Kashdan & Rottenberg, 2010). Parental EA (PEA) and psychological inflexibility has been defined as an unwillingness to face the *child’s* internal experiences and a reluctance of taking needed parenting actions in the presence of such experiences (Brown et al., 2015; Cheron et al., 2009; Tiwari et al., 2008). It refers to the *skill* of flexibly approaching one’s, even negative, internal experiences while paying attention to the parent-child relationship and maintaining good parenting practices (Burke & Moore, 2015).

PEA operates both intrinsically as an escape from inner experiences and extrinsically through situation modification. The situation modification includes altering one’s own or a child’s behavior or circumstances where the avoidance-provoking experiences are expected to occur (Shea & Coyne, 2011). According to a recent systematic review, psychological inflexibility has been reported to play an important part in parents’ functioning as caregivers for a child with disability (Gur & Reich, 2023b). Interestingly, both excessively authoritative, and overly permissive parenting has been associated with PEA/psychological inflexibility (Burke & Moore, 2015; Shea & Coyne, 2011; Tiwari et al., 2008). These topographically different parenting styles serve the same functional behavioral class, i.e., PEA (Whittingham & Coyne, 2019). Parents with high PEA are prone to overreact or, on the contrary, are passive and fail to take appropriate parenting actions. They tend to miss the contextual cues in a situation (lacking sensitivity) which often leads to more problematic relations and a lack of compassion (Shea & Coyne, 2011; Whittingham & Coyne, 2019). Earlier studies have confirmed simultaneous high PEA/psychological inflexibility, distress, stress and a burden of care in parents of children with disabilities (Gur & Reich, 2023b; Shea & Coyne, 2011), and in parents of children with chronic conditions, such as diabetes (Sairanen et al., 2022). Furthermore, PEA has been linked to ineffective parenting practices (Brown et al., 2015; Coyne et al., 2011), to emotional and behavior problems in a child (Lessenberry & Rehfeldt, 2004; Sairanen et al., 2018), and to high child EA (Leeming & Hayes, 2016). On the other hand, increased skills in PF have been associated with psychological well-being, resilience, and

adaptive coping (Brown & Ryan, 2003; Byrne et al., 2021; Hayes et al., 2006).

There is a need to detect and treat PEA/psychological inflexibility in different parenting populations for the sake of well-being of families, and we need valid and reliable instruments for that purpose. At the same time, PEA/psychological inflexibility is a challenging construct to define and measure (Cherry et al., 2021; Ong et al., 2019; Rochefort et al., 2018). The most extensively used and validated instruments for the measurement of PF are the Acceptance and Action Questionnaire (AAQ-I) (Hayes et al., 2004), and its later version the (AAQ-II) (Bond et al., 2011). AAQ-I was described as a measure of EA, whereas the AAQ-II was described as a measure of psychological inflexibility (Bond et al., 2011). Both instruments have received some critique, AAQ-I for low internal consistency, and AAQ-II for lack of discriminant validity (Ong et al., 2019; Tyndall et al., 2019). Of the ACT intervention studies regarding parents of children with disabilities, the majority had used AAQ-II or a tool based on AAQ, as an outcome or process measure (Gur & Reich, 2023b). The context-specific variations of the original AAQ’s with domain-specific questions have been reported to have better incremental and discriminant validity and greater sensitivity regarding the domain of interest compared to general measures of PF. However, additional investigation is essential to validate the context-specific tools assessing PF in diverse settings and various research frameworks (Ong et al., 2019). The research done has been mainly conducted on community samples instead of clinical samples, and none, to our knowledge, have been validated in the context of parenting a child with *disability*. Of the existing parenting-specific instruments, the Parental Acceptance Questionnaire, 6-PAQ (Greene et al., 2015) measures six maladaptive processes included in the ACT-based model of psychological inflexibility, and the Parental Psychological Flexibility Questionnaire, PPFQ (Burke & Moore, 2015) measures defusion, acceptance and committed action.

The instrument under psychometric evaluation in this study, the Parental Acceptance and Action Questionnaire (PAAQ) was modified from the AAQ-I, and psychometrically evaluated in a sample of parents of children with an anxiety disorder (Cheron et al., 2009). It was originally considered a two-factorial measure of PEA, but also been defined as a context-specific measure of parental psychological flexibility (Moyer & Sandoz, 2015; Ong et al., 2019) as it has an emphasis on contextual adaptability and behavioral effectiveness in parenting situations (Moyer & Sandoz, 2015). To our knowledge, in addition to the original study, the PAAQ has only been psychometrically evaluated in one Japanese study (Okajima & Okajima, 2023), and in an unpublished doctoral thesis (Ostrowski-Hilton, 2014). However, the PAAQ has been used as an outcome or process measure in several intervention studies, therefore indicating clinical utility (Emerson et al., 2019, 2021; Holmberg Bergman et al., 2022; Moyer & Sandoz, 2015; Twohig et al., 2010).

The aim of this study was to examine the psychometric properties of the 19-item composite version of the Swedish version of the PAAQ, i.e., the construct and discriminant validity of the questionnaire and its reliability in terms of internal consistency in two main samples of Swedish parents: a community sample and a treatment-seeking distressed parent sample (parenting child[ren] with various disabilities). Our hypothesis was that the parents in the clinical sample would report higher PEA/psychological inflexibility than the parents in the community sample. Furthermore, the construct validity (using confirmatory factor analysis) and the test-retest reliability was examined in a separate test-retest sample.

## 2. Method

### 2.1. Study design and setting

The community sample ( $n = 1018$ ), and the test-retest sample ( $n = 337$ ) were collected via a national web-survey during one fall (2018 and 2022) each, whereas the clinical distressed parent sample ( $n = 667$ ) was

recruited in the health-care region of greater [insert name of city] and fifteen other regions in Sweden during 2016–2020 as part of a larger project regarding ACT group intervention for distressed parents of children with disabilities.

Participants in the community sample took part via a web-survey after having expressed interest in participating in surveys. They were informed that the collected information would be used in research. The inclusion criteria were considered met if the participant was parenting a 3–17-year-old child. In the case of parents with more than one child with disabilities, the child characteristics in this sample were reported only for the oldest child. A survey company (PFM Research) stratified the sample to represent both mothers and fathers of children with heterogeneous demographics (e.g., age, urban vs rural living), after which an invitation e-mail was sent to potential participants. The survey was completed anonymously. This sample included 76 (7.5%) parents of child(ren) with a disability (mainly autism and ADHD) which is comparative to recent estimate of 10.1–11.3 % prevalence of moderate-to-severe disabilities in children aged 0–19 years world-wide (Olusanya et al., 2022).

The distressed parent sample consisted of baseline data of parents recruited during 2016–2020 to the on-going Navigator ACT (Holmberg Bergman et al., 2022), ACT-based group treatment with the Clinical Trials ID NCT03830476. The Navigator ACT aims to increase psychological flexibility in stressed and distressed parents of children with disability, for example autism and ADHD. The habilitation centers' (outpatient disability clinics) usual recruitment channels (brochures, course catalogues) were used in the recruitment process. A structured needs assessment (screening interview) was used to assess the eligibility. The inclusion criteria were met if a parent reported parenting stress and/or psychological distress (depression/anxiety) and had a child aged 0–17 years with a diagnosed disability or non-specific neurodevelopmental disorder for preschool children with severe developmental delay (315.9/F89). We used the pseudonymized baseline data.

The third sample ( $n = 337$ ) was collected through a campaign on a social media platform to examine the test-retest reliability of the PAAQ, and to conduct a confirmatory factor analysis. The inclusion was met if the parent had a child aged 3–17 years. The same participants filled out the PAAQ on two occasions over a period of approximately two weeks. The participant data was identifiable from time point 1 to time point 2 through control questions (e.g., name of the first school, favorite food).

The Regional Ethics Committee of [insert name of the city] (2016/526-21-1, 2016/526-31/1, 2020/012-30) approved the study. The work has been carried out according to the code of ethics in the Helsinki declaration regarding research involving human subjects (World Medical Association, 1964).

## 2.2. Measures

### 2.2.1. Background and demographic variables

For the community and test-retest samples, the questions regarding background information and demographics were included in the web-survey. The distressed parent sample completed a modified version of the “Current Life Situation Questionnaire” (Hirvikoski et al., 2009) as part of the baseline measurement.

### 2.2.2. The PAAQ and self-rating scales that measure related constructs

Participants in both samples completed the following self-rating instruments: The PAAQ, Hospital Anxiety and Depression Scale (HADS-A, HADS-D) and Parental Stress Scale (PSS-18). The target of this study, the PAAQ, was adjusted from the AAQ-I to measure PEA. During the adjustment process the 19-item composite version of AAQ-I questionnaire was reduced into 15-items and divided into two-factors. The items 12, 15, 16 and 18 were excluded (Cheron et al., 2009). The two dimensions of PEA were *unwillingness* (to witness their child's negative emotional experiences) and *inaction* (a reluctance to “take action” in the presence of child's negative emotional experiences). The items in the

PAAQ are rated from 1 to 7 (1 = never true, 7 = always true), and the total scores can vary between 15 and 105. Higher scores indicate greater PEA/psychological inflexibility. The test-retest correlation for the 15-item PAAQ was moderate,  $r = 0.72$ , and the internal consistency questionable,  $\alpha = 0.65$  (Cheron et al., 2009). The 19-item version of the PAAQ was translated into Swedish by employing a translation and back-translation procedure.

PSS-18 is an 18-item measure of parenting stress in areas such as parenting satisfaction and stressors (Berry & Jones, 1995). The items are scored on a scale of 1–5. Eight items are reversed before they are summed to obtain a total score (range 18–90). Higher scores imply greater parental stress. The PSS-18 is reliable, both internally ( $\alpha = 0.83$ ) and over time with a stable test-retest reliability correlation of  $r = 0.81$  (Berry & Jones, 1995). Cronbach's alpha of the PSS-18 in this study was  $\alpha = 0.75$  in the community sample, and  $\alpha = 0.67$  in the distressed parent sample.

HADS (Zigmond & Snaith, 1983) is a 14-item rating scale scored from 0 to 3. The subscales of HADS-A (anxiety) and HADS-D (depression) allow a separate analysis of the both domains with scores of  $\geq 8$  and above indicating clinical anxiety or depression (Zigmond & Snaith, 1983). The HADS is a widely used assessment tool with good psychometric properties, also in the Swedish population (Lisspers et al., 1997). The internal consistency in this study was good for the HADS-A ( $\alpha = 0.85$ ) and HADS-D ( $\alpha = 0.82$ ) in the community sample, and HADS-A ( $\alpha = 0.78$ ) and HADS-D ( $\alpha = 0.77$ ) in the distressed parent sample.

### 2.3. Statistical analysis

Statistical analyses were performed with IBM SPSS Statistics version 28 and LISREL, version 12. The community sample and test-retest sample provided full data (none missing), while the distressed parent sample had some missing values (5.2%). If there was only one item missing, the missing value was replaced with the average of the respondent's observed items. The participants with  $\geq 2$  missing values were excluded from the sample. Outliers were generally few and not extreme on both item and scale level and were included in the analysis. The background and demographic characteristics were compared between the samples and analyzed with independent samples using *t*-test or chi-square. We evaluated each item in the PAAQ by calculating item variances, difficulties, validities, and corrected item-total correlations. Item difficulties were computed by dividing item means with the highest possible item score which in the case of PAAQ is seven (Furr, 2020). We used chi-square or *t*-test to assess the item-level differences between the samples. To analyze the factor structure, the Exploratory Factor Analysis (EFA) with Principal Axis Factoring (PAF) and Oblique rotation (Promax) was used. We also conducted a confirmatory analysis (CFA) in LISREL. The goodness of fit of the PAAQ was assessed through chi-square, the root means square error of approximation (RMSEA), the goodness of the fit index (GFI), and adjusted GFI.

Furthermore, we evaluated the discriminant validity between the PAAQ and self-rating scales that measure related constructs (PSS-18, HADS-A, HADS-D) through Pearson's correlation. The Bland-Altman index was performed to further examine the level of agreement between the PAAQ and related constructs. The reliability of the PAAQ was assessed by Cronbach's alpha and test-retest analysis (Pearson's correlation and *t*-test). Furthermore, the ability of the PAAQ to discriminate parents in the community sample from parents in the distressed parent sample was assessed with ROC-analysis. The parents of children with disabilities were excluded from the community sample for the purpose of the ROC-analysis (i.e., comparing the samples of parents with and without disabilities). In other analyses in this study, these parents were not excluded as parents of children with and without disabilities are taught to reflect a *true* community.

### 3. Results

#### 3.1. Background and demographic variables

The main samples analyzed consisted of a community sample ( $n = 1018$ ), a distressed parent sample ( $n = 667$ ). See Fig. 1 Flowchart. The participating mothers and fathers were 19–68 years old ( $M = 40.7$  and  $M = 43.3$ , respectively). There was an equal distribution of men and women in the community sample. The distressed parent sample had significantly fewer fathers ( $n = 99$ , 14.8%,  $p < 0.001$ ) than mothers. There was also a significantly higher presence of parental neurodevelopmental disability, such as ADHD or autism, in the distressed parent sample (8.1% vs. 4.6%) than in the community sample. In addition, the distressed parent sample had a significantly higher proportion of university educated parents (70%) compared to the community sample (47.6%) and significantly more parents on a sick-leave or unemployed (23%) than the community sample (19%) (Table 1). In terms of child characteristics (Table 2), there were more boys ( $n = 444$ , 67%) in the distressed parent sample compared to the community sample ( $n = 521$ ; 51%). Furthermore, a third, the test-retest sample ( $n=337$ ) consisted of 325 mothers (96.4%), 10 fathers (3.0%) and one person with another gender identity. The parents in the test-retest

sample were in ages 25–58, parenting one to six children in ages 1–17 years ( $M = 8.9$ ,  $SD = 3.97$ ).

#### 3.2. Item characteristics of the 19-item PAAQ

Item variances ranged from 1.33 to 4.42 (community sample), and 1.60–4.10 (distressed sample). Item difficulties for both samples were in the range of 0.32–0.80. However, the parents in the distressed parent sample endorsed higher item difficulties on all but one item. Item 18 “When I evaluate something my child did negatively, I usually recognize that this is just a reaction, not an objective fact” was scored similarly in both samples (0.54 and 0.53). Item 18 was later removed; see factor analysis. Item 16 “If I promise to do something with my child, I’ll do it, even if I later don’t feel like it” received the lowest item difficulty score in both samples (0.32 and 0.33). Item 8 “I try hard to avoid having my child feel depressed or anxious” received a high item difficulty score in both samples (0.69 and 0.79). Corrected item total correlations were generally low (Table 3).

#### 3.3. Construct validity

The PAF with oblique (ProMax) rotation in the community sample

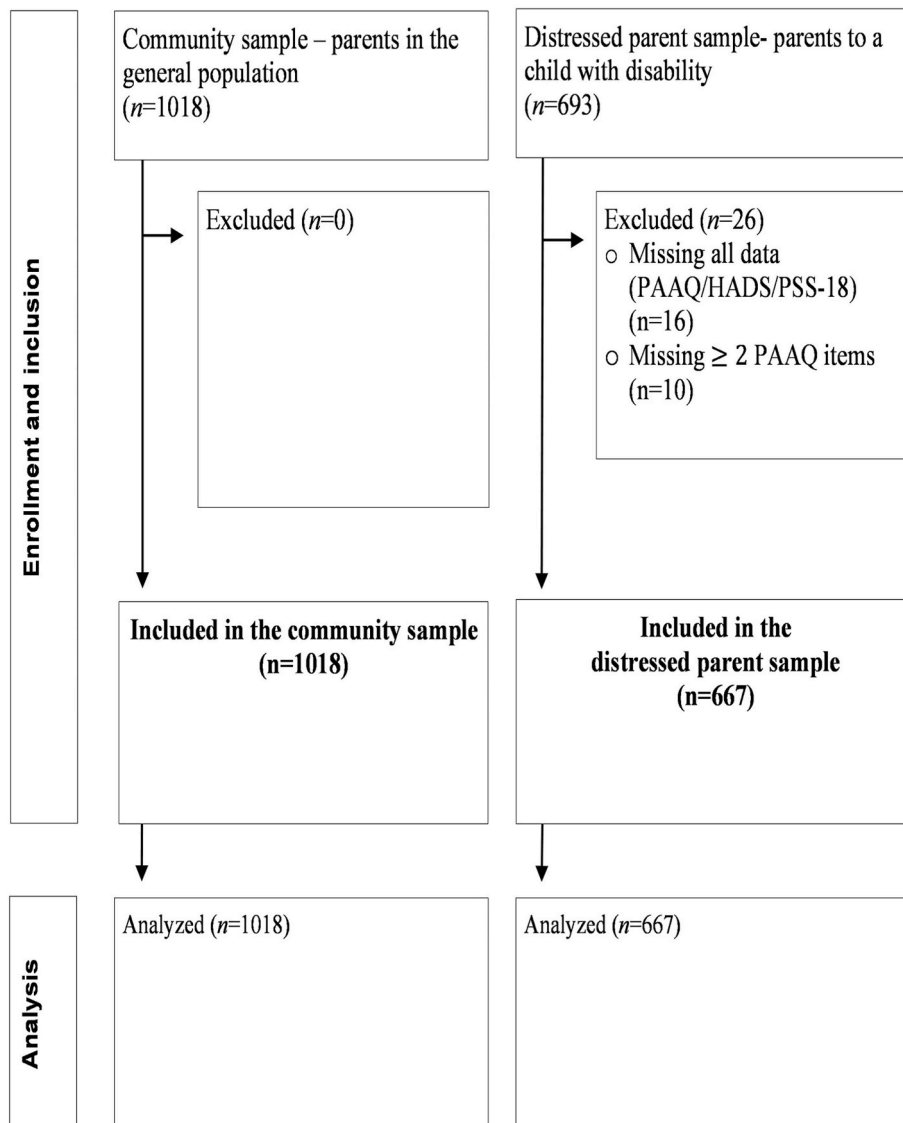


Fig. 1. Flow Chart of Participants in the two main samples (excluding the later corrected test-retest sample).

**Table 1**

Background, demographic and well-being related information of the participants divided into the community and distressed parent samples.

PARENT	Community parent sample (n = 1018) M (SD) min-max	Distressed parent sample (n = 667) M (SD) min-max	Test statistics
<b>Age</b>	40.7 (8.70) 19-63	43.4 (6.70) 23-68	t = 6.98 (1639.6, p < 0.001, d = 0.4
<b>HADS-anxiety</b>	7.08 (4.38) 0-21	12.33 (3.85) 1-21	t = 25.8 (1536.1), p < 0.001, d = 1.3
<b>HADS-depression</b>	4.84 (3.64) 0-20	8.77 (3.61) 0-19	t = 21.7 (1415.7), p < 0.001, d = 1.1
<b>PSS-18 parenting stress</b>	37.57 (10.61) 18-73	48.94 (9.68) 27-78	t = 22.64 (1499.7), p < 0.001, d = 1.1
	<b>Community parent sample, n=1018 n (%)</b>	<b>Distressed parent sample, n=667 n (%)</b>	<b>Test statistics</b>
<b>Gender</b>	554 (54.4) Female 464 (45.6) Male	568 (85.2) Female 99 (14.8) Male	$\chi^2 = 172.1, p < .001$ V = 0.32 n.s.
<b>Parent disability</b>	942 (92.5) No disability 76 (7.5) Disability	607 (91.0) No disability 60 (9.0) Disability	
<b>Parent NDD diagnoses</b>	971 (95.4) No NDD 47 (4.6) NDD	613 (91.9) No NDD 54 (8.1) NDD	$\chi^2 = 8.66, p < .05$ V = 0.72
<b>Highest education</b>	533 (52.4) High school or less 485 (47.6) University studies/exam	200 (30.0) High school or less* 466 (70.0) University studies/exam	$\chi^2 = 81.7, p < .001$ V = 0.22
<b>Occupational status</b>	825 (81.0) Employed 193 (19.0) Unemployed or sick-leave	514 (77.1) Employed 153 (22.9) Unemployed or sick-leave	$\chi^2 = 3.91, p < .05$ V = 0.05

Note: NDD=Neurodevelopmental Disorder; PSS=Parental Stress Scale, HADS=Hospital Anxiety and Depression Scale, \*missing n = 1.

**Table 2**

Demographic information of the oldest child/a child with disability divided into the community and distressed parent samples.

CHILD	Community parent sample (n = 1018) M (SD) min-max	Distressed parent sample (n = 667) M (SD) min-max	Test statistics
<b>Age</b>	10.6 (4.54) 3-17	10.0 (4.05) 1-19	t = 2.54 (1517.2, p < 0.05, d = 0.1
	<b>n (%)</b>	<b>n (%)</b>	<b>Test statistics</b>
<b>Sex/gender</b>	521 (51.2) Boy 496 (48.7) Girl 1 (0.1) Other gender	444 (67.0) Boy 215 (32.4) Girl 4 (0.6) Other*	$\chi^2 = 46.1, p < .001, V = 0.16$
<b>Diagnosed disability</b>	931 (91.5) No disability 87 (8.5) Disability	667 (100) Disability	$\chi^2 = 1363.1, p < .001, V = 0.90$
<b>NDD diagnoses</b>	946 (92.9) No NDD 72 (7.1) NDD	613 (91.9) No NDD 54 (8.1) NDD	$\chi^2 = 1201.9, p < .001, V = 0.85$

Note: NDD= Neurodevelopmental Disorder (here: ADHD, Autism Spectrum Disorder, Intellectual Disability). \* = missing 4.

extracted a three-factor structure: action-taking and flexibility in the parenting context (factor one, F1), acceptance of parenting-related internal experiences (factor two, F2), and acceptance of child's negative

**Table 3**

The PAAQ item-means, -variances and difficulties, and corrected item-total correlations.

Items	Community parent sample (n = 1018)				Distressed parent sample (n = 667)			
	M	S <sup>2</sup>	DIFF	r <sub>it</sub>	M	S <sup>2</sup>	DIFF	r <sub>it</sub>
1 r	2.47	1.33	0.35	0.44	3.04	1.9	0.43	0.37
2	2.87	2.64	0.41	0.46	4.08	2.7	0.58	0.33
3	2.79	3.03	0.40	0.46	3.81	3.6	0.54	0.20
4 r	2.81	3.03	0.40	0.33	3.10	4.1	0.44	0.33
5 r	3.61	3.25	0.52	0.35	4.99	3.3	0.71	0.36
6	3.42	2.74	0.49	0.35	4.40	3.1	0.62	0.24
7 r <sup>a</sup>	2.32	2.67	0.33	0.48	3.66	3.8	0.52	0.38
8	4.84	3.02	0.69	0.16	3.54	2.2	0.79	0.19
9	3.84	3.52	0.55	0.39	4.64	3.6	0.66	0.42
10 r	3.15	2.71	0.45	0.13	3.11	2.4	0.44	0.24
11	3.87	4.42	0.55	0.32	5.60	3.2	0.80	0.21
12 r	3.25	1.73	0.46	0.22	4.17	2.3	0.60	0.20
13 r	2.51	1.72	0.36	0.41	3.45	2.4	0.49	0.29
14	3.86	2.59	0.55	0.36	4.93	2.7	0.70	0.30
15 r <sup>a</sup>	3.71	1.74	0.53	0.06	3.78	2.1	0.54	-0.09
16 r	2.24	1.49	0.32	0.30	2.33	1.6	0.33	0.05
17	3.79	2.84	0.54	0.33	4.60	3.0	0.66	0.22
18 r <sup>a</sup>	3.78	1.70	0.54	0.59	3.69	2.1	0.53	0.03
19	3.09	3.18	0.44	0.42	4.47	3.3	0.71	0.35

Note. Reverse-scored items are denoted with an r. M = mean; S<sup>2</sup> = item variance; DIFF = item difficulty, r<sub>it</sub> = corrected item-total correlation. The item 16 "received the lowest mean score, item variances and item difficulty score in both samples.

<sup>a</sup> = Item removed after the factor analysis.

internal experiences (factor three, F3). The KMO value was 0.83, indicating very good factorability of the PAAQ items, i.e., KMO>0.8 (Tabachnick et al., 2013). The factor loadings were reasonable strong or strong for all three factors 0.41-0.68 (F1), 0.45-0.64 (F2), and 0.37-0.69 (F3). Items were removed if an item had a factor loading below 0.35. The removed items were numbers 7, 15 and 18 (Table 4). Items 15 and 18 were removed because of low factor loadings, while item 7 double-loaded on two factors. A parallel analysis was conducted on the distressed parent sample and yielded the same three-factor structure with similar factor loadings, 0.52-0.70 (F1), 0.53-0.69 (F2), and 0.51-0.74 for (F3). The process resulted in a 16-item PAAQ of which five items loaded for F1, six items for F2 and five items for F3. Based on the results of the PAF, a three-factor model of the structure of the PAAQ was tested in a CFA on the test-retest sample (n = 337). The goodness of fit was tested by using several fit indices. The chi square test was significant,  $\chi^2=282.8, p < 0.001$  (n = 337). The RMSEA was 0.073, with the 90% CI ranging from 0.06 to 0.08, GFI = 0.9, and Adjusted GFI = 0.87, altogether indicating an acceptable fit. See Fig. 2.

The PAAQ showed good discriminant validity. The 16-item PAAQ correlated in the expected direction (positively) but in moderation with the PSS-18 (parental stress), HADS-A (anxiety) and HADS-D (depression) with correlation coefficients ranging from 0.56 to 0.64 (p < 0.001) in the community sample. The correlation analysis was repeated in the distressed parent sample and showed lower but likewise significant positive correlations ranging from 0.49 to 0.61 (p < 0.001). Comparable results were obtained for both groups for the separate factors (Table 6). The Bland-Altman test showed that the average difference between the PAAQ and parental stress (PSS-18) was M = 14.8 (range 95% CI = -5.04-34.6)). See Fig. 3.

The ROC-curve revealed that the 16-item PAAQ had a good classification accuracy with predictive value of AUC = 0.83 (95 % CI = 80-0.85, p < 0.001). In other words, the PAAQ could correctly discriminate the community sample from the clinical, distressed parent sample. The Gini coefficient of 0.64 pointed 58.5 as cut-off score with 79 % sensitivity and 68% specificity. An alternative cut-off would be 57.5 with the sensitivity of 81% and the specificity of 65 %. See Fig. 4.

**Table 4**

Factor loadings, communalities, and Cronbach's alpha for the three factors of the PAAQ identified in an exploratory factor analysis in the *community sample* (n = 1018).

Parental Acceptance and Action Questionnaire	F1	F2	F3	h <sup>2</sup>
<b>F1: ACTION TAKING AND FLEXIBILITY IN THE PARENTING CONTEXT</b>				
01 I am able to take action about my child's fears, worries, and feelings even if I am uncertain what is the right thing to do. (r)	<b>0.616</b>	0.272	0.207	0.42
10 Despite my doubts, I feel as though I can set a plan for managing my child's feelings. (r)	<b>0.414</b>	-0.023	-0.014	0.18
12 I am able to control things that happen in my child's life. (r)	<b>0.546</b>	0.059	-0.019	0.30
13 If I get frustrated with my child, then I can still help him or her. (r)	<b>0.679</b>	0.320	0.069	0.50
16 If I promise to do something with my child, I'll do it, even if I later don't feel like it. (r)	<b>0.559</b>	0.170	0.053	0.32
<b>F2: ACCEPTANCE OF OWN PARENTING RELATED INNER EXPERIENCES</b>				
02 When I feel depressed or anxious, I am unable to help my child manage their fears, worries, or feelings.	0.301	<b>0.638</b>	0.076	0.45
03 I try to suppress thoughts and feelings about my child that I don't like by just not thinking about them.	0.196	<b>0.620</b>	0.280	0.39
06 In order for my child to do something important, I have to have all my doubts about it worked out.	-0.014	<b>0.500</b>	0.345	0.29
14 Worries can get in the way of my child's success.	0.047	<b>0.451</b>	0.312	0.23
17 I often catch myself daydreaming about things I've done with my child and what I would do differently next time.	-0.017	<b>0.568</b>	0.254	0.34
19 When I compare myself to other parents, it seems that most of them are handling their lives better than I do.	0.269	<b>0.619</b>	0.145	0.42
<b>F3: ACCEPTANCE OF CHILD'S NEGATIVE INNER EXPERIENCES</b>				
04 It's OK for my child to feel depressed or anxious. (r)	0.230	0.075	<b>0.542</b>	0.37
05 I rarely worry about getting my child's anxieties, worries, and feelings under control. (r)	0.272	0.161	<b>0.374</b>	0.20
08 I try hard to avoid having my child feel depressed or anxious.	-0.297	0.243	<b>0.458</b>	0.33
09 It is bad if my child feels anxious.	-0.081	0.353	<b>0.689</b>	0.50
11 If I could magically remove all the painful experiences my child has had in his or her life, I would do so.	-0.107	0.398	<b>0.506</b>	0.33
<b>Cronbach's alpha (α) Total scale 0.74</b>	<b>0.69</b>	<b>0.74</b>	<b>0.62</b>	

Note. Reverse-scored items are denoted with an (r). Coefficients ≥0.45 are printed in bold text. PAAQ= Parental Acceptance and Action Questionnaire. F1 = PAAQ Factor 1, F2 PAAQ factor 2, F3=PAAQ factor 3, h<sup>2</sup> = communalities.

**3.4. Reliability**

The internal consistency was adequate (α = 0.79) for the total scale when measured in the test-retest sample = 337. The corresponding figures for the separate factors one to three were relatively low α = 0.62, α = 0.66 and α = 0.65 (Table 5). The internal consistency in the community sample (n = 1018) was α = 0.74 for the whole questionnaire and α = 0.69 (F1), α = 0.74 (F2) and α = 0.62 (F3) for each factor. The test-retest analysis (n = 337) of the PAAQ showed good reliability over time (r = 0.82. p < 001), with a mean value of 51.21 (SD = 12.5) at test, and 50.56 (SD = 12.1) at retest.

**3.5. Clinical utility**

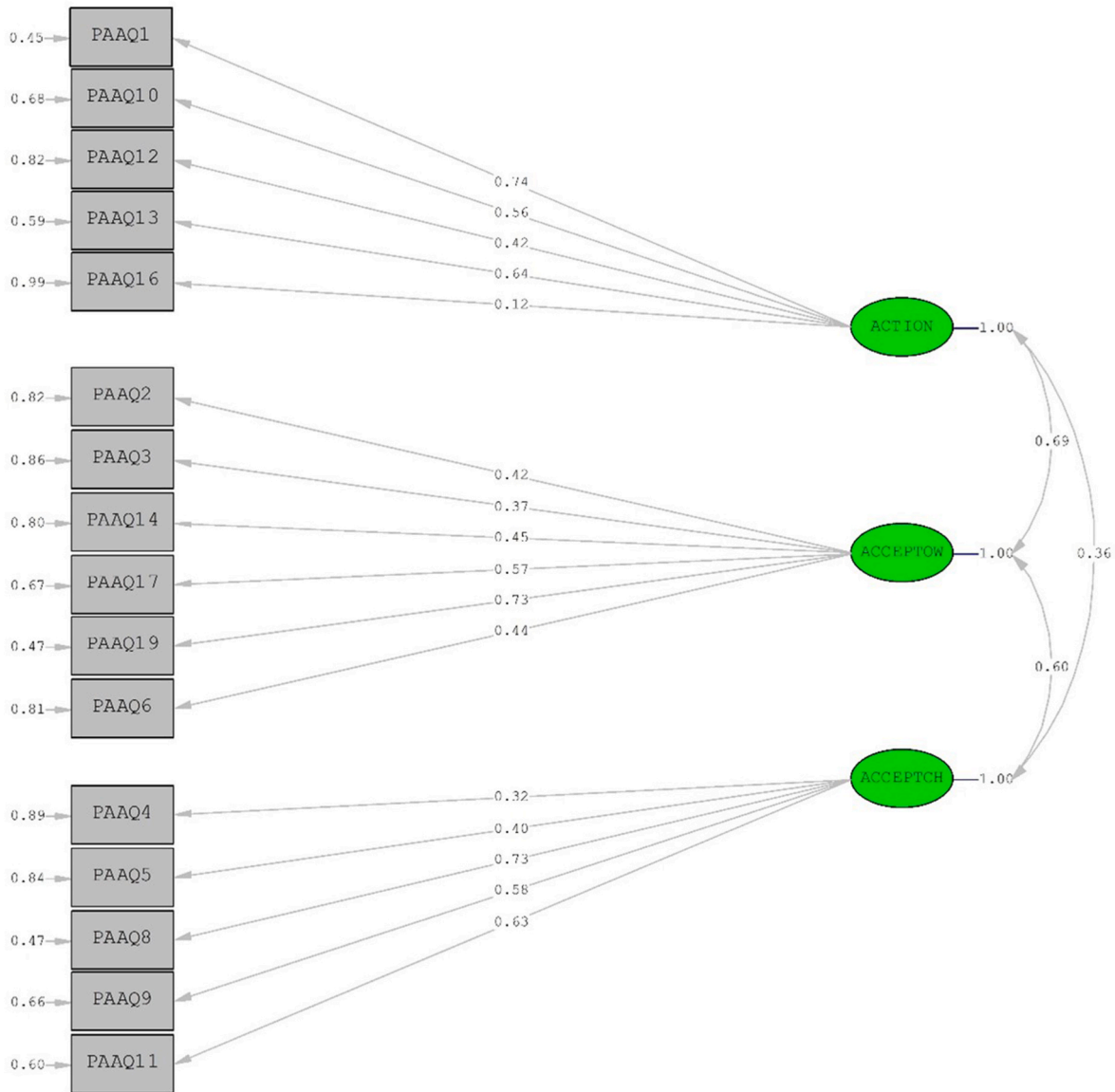
The PAAQ was tested through a feasibility trial in a clinical sample of 94 parents allocated to a 5-session ACT group intervention. The preliminary results showed a significant positive change in the PAAQ scores from baseline to post-intervention with large effect-sizes, which remained stable at the 4-month post-measurement [citation removed for anonymized review].

**4. Discussion**

The results of this study showed that the Swedish version of the PAAQ, which measures PEA/parental inflexibility had a good construct validity, adequate internal consistency, and good reliability over time. These results were based on three Swedish samples, two community samples and a clinical sample consisting of treatment-seeking distressed parents of children with various disabilities. A total of 2022 parents were included in the different phases of this study. The clinical sample was collected as part of a larger project regarding a ACT group intervention for parents of children with disabilities. The factor analysis (PAF) revealed a three-factor structure of PEA/parental psychological inflexibility. The CFA confirmed an adequate model fit for proposed dimensionality. The PAAQ showed good discriminant validity by correlating moderately in the expected direction with related constructs. In addition, it successfully distinguished the clinical sample from the community sample. Furthermore, we found higher PEA/psychological inflexibility, parenting stress, depression, and anxiety in the parents of children with disabilities than the parents in the community sample.

It is important to know what we measure, and to use a reliable and valid measurement tool for that construct (Greene et al., 2015; Ong et al., 2019). In this study, we have theorized the PAAQ to be a measure of PEA and parental inflexibility. The concept of PEA in has been conceptualized differently in the studies concerning the PAAQ, for example as a measure of PEA with an interactive parent-child action/-reaction management component (Cheron et al., 2009; Emerson et al., 2019), psychological inflexibility and PEA (Okajima & Okajima, 2023) or a measure of parenting inflexibility (Moyer & Sandoz, 2015). The varying conceptualizations are not surprising. The ACT model includes six interactive, overlapping processes behind psychological inflexibility, of which EA plays a central role (Hayes et al., 2009). The conceptualizations PF itself has been under scientific debate (Cherry et al., 2021). The most used definition of the PF includes values-based action taking despite of internal experiences (Bond et al., 2011; Cherry et al., 2021). In this study, the association of the factors gives support for the construct of context-specific PEA/psychological flexibility. The PAAQ is lacking a values-based question as has been pointed out by previous research (Greene et al., 2015).

The AAQ-I (Hayes et al., 2004), from which the PAAQ originates, was considered a unifactorial construct of EA, whereas AAQ-II was considered as an unifactorial measure of psychological inflexibility. In the present study, the factor analysis gives support to the PAAQ as a multidimensional construct. This multifactor structure is in line with the original PAAQ study (Cheron et al., 2009) and a later psychometric evaluation (Okajima & Okajima, 2023). The developers of the PAAQ depicted two dimensions of EA, namely parental unwillingness to witness the child's negative emotions and an inability to manage their reactions in the presence of the child's affect (Cheron et al., 2009). In our study, we depicted three dimensions of parental flexibility: action-taking and flexibility, acceptance of internal experiences related to parenting and acceptance of child's internal experiences. We decided to name the factors positively, as the name of the instrument suggests (acceptance and action-taking), instead of focusing on the other end of the continuum, i.e., PEA/inflexibility. The new factor "experiential acceptance of own inner experiences related to parenting" includes items such as "When I compare myself to other parents, it seems that most of them are handling their lives better than I do" or "I often catch myself



Chi-Square=282.83, df=101, P-value=0.00000, RMSEA=0.073

**Fig. 2.** The confirmatory analysis of the model fit of the PAAQ ( $n = 337$ ). **Note:** Factors are symbolized by ellipses, while indicators (i.e., items) are denoted by rectangles in the graphical representation. A single-headed line connecting a factor and an indicator signifies a presumed direct effect, presented as a regression coefficient. A double-headed line connecting two factors denotes an association between them, expressed as a covariance. Residuals, expressed as covariance, are represented by numbers in the far left-hand column. Note: PAAQ=Parental Acceptance and Action Questionnaire, PAAQ F1: Factor 1 Action-taking and flexibility in parenting context; PAAQ F2 = Factor 2 Experiential acceptance of parenting related distress; PAAQ F3 = Factor 3 Experiential acceptance of child’s negative inner experiences.

daydreaming about things I’ve done with my child and what I would do differently next time.” The three-factor model is partly in line with the Japanese study (Okajima & Okajima, 2023). However, their factor analysis divided Inaction into two sub-categories (cognitive and behavioral inaction) whereas we divided Unwillingness into two sub-categories. In our study, the new factor reflecting PEA of parenting experiences makes sense both clinically and theoretically. It is in line with

research concerning parents in challenging parenting situations, and their tendency to dwell on, ruminate or avoid inner experiences consisting of judgement towards their own parenting. Parents are likely to blame themselves, and have feelings of shame, inadequacy and guilt over their parenting (Sirois et al., 2019).

Among the excluded items in our study, two were identical to those excluded in the original study (items 15 and 18) (Cheron et al., 2009).



**Table 5**

The sum scores for the 16-item PAAQ and the three (new) factors.

PAAQ sum scores	Community parent sample (n = 1018) M (SD)	Distressed parent sample (n = 667) M (SD)	Test statistics
<b>16-item PAAQ total</b>	52.40 (11.92)	67.0 (10.93)	$t = 25.6$ (1464.3, $p < 0.001$ , $d = 1.27^*$ )
<b>F1 Action taking and flexibility in parenting context</b>	13.62 (4.44)	16.12 (4.44)	$t = 11.27$ (1676), $p < 0.001$ , $d = 0.6$
<b>F2 Acceptance of own parenting related inner experiences</b>	19.81 (6.64)	26.92 (5.58)	$t = 23.64$ (1567.5), $p < 0.001$ , $d = 0.7$
<b>F3 Acceptance of child's negative inner experiences</b>	19.00 (5.84)	23.90 (5.96)	$t = 17.29$ (1678), $p < 0.001$ , $d = 0.8$
<b>Mother ratings, 16-item PAAQ total</b>	52.09 (12.01)	66.7 (10.9)	$t = 21.23$ (1093.3) $p < 0.001$ , $d = 0.8$
<b>Father ratings, 16-item PAAQ total</b>	52.77 (11.83)	68.3 (11.1)	$t = 11.89$ (559), $p < 0.001$ , $d = 0.8$

Note: PAAQ=Parental Acceptance and Action Questionnaire. F1 = PAAQ Factor 1, F2 PAAQ factor 2, F3=PAAQ factor 3.

**Table 6**

Correlations (r) between the total 16-item PAAQ, new factors F1–F3 and the scores of the related constructs of anxiety (HADS-A), depression (HADS-D) and parental stress (PSS-18) in the community sample and in the distressed parent sample (in parenthesis).

	PAAQ F1	PAAQ F2	PAAQ F3	HADS-A	HADS-D	PSS-18
<b>PAAQ-16</b>	0.58** (0.52**)	0.86** (0.83**)	0.76** (0.71**)	0.63** (0.58**)	0.56** (0.49**)	0.64** (0.61**)
<b>PAAQ F1</b>		0.33** (0.23**)	0.16 (0.03)	0.33** (0.33**)	0.38** (0.39**)	0.48** (0.45**)
<b>PAAQ F2</b>			0.48** (0.37**)	0.62** (0.58**)	0.52** (0.44**)	0.61** (0.60**)
<b>PAAQ F3</b>				0.40** (0.27**)	0.34** (0.20**)	0.35** (0.21**)
<b>HADS-A</b>					0.72** (0.71**)	0.58** (0.55**)
<b>HADS-D</b>						0.58** (0.56**)

Note: PAAQ=Parental Acceptance and Action Questionnaire, PAAQ F1: Factor 1 Action-taking and flexibility in parenting context; PAAQ F2 = Factor 2 Experiential acceptance of parenting related distress; PAAQ F3 = Factor 3 Experiential acceptance of child's negative inner experiences; HADS -A = Hospital Anxiety and Depression Scale - Anxiety subscale; HADS-D = HADS - Depression subscale; PSS-18 = Parental Stress Scale. \*\* correlation is significant at the 0.01 level (2-tailed).

The Item 15 “My child should act according to his or her feelings at the time (r)” and item 18 “When I evaluate something my child did negatively, I usually recognize that this is just a reaction, not an objective fact” had factor loadings below 0.35 and very low inter-item correlations (0.06 and -0.59, respectively). In addition, both questions were considered strange or confusing according to feedback from participating parents. These concerns were shared by the research group members, who, in addition, found the questions somewhat unfitting the construct of parental PF. We also removed item 7 “I’m not afraid of my child’s feelings” as it double-loaded with F2 and F3. The CFA confirmed an acceptable fit for the hypothesized model in the EFA, i.e., it gives support for the validity of the dimensionality model.

The PAAQ showed good divergent validity by correlating only moderately with other self-rating scales that measure related constructs such as parenting stress, depression, and anxiety. The observed

correlations, ranging from weak to moderate, substantiate the proposition that PEA/parental inflexibility constitutes a distinct construct independent of stress, depression, and anxiety. This aligns with the findings of prior research on the PAAQ (Cheron et al., 2009). In a recent study encompassing 220 articles, 12 instruments measuring PF or psychological inflexibility were rated for quality, and inclusive discriminant validity. A self-rating scale was deemed to demonstrate discriminability if its correlations with similar instruments were equal to or less than 0.70 (Cherry et al., 2021). According to this criterion, the PAAQ demonstrated good discriminant validity, which provides evidence for the PAAQ assessing its intended construct. It is worth to note that the PAAQ’s discriminant validity according to correlations was better in the clinical sample than in the community sample.

Furthermore, the PAAQ was able to distinguish the parents in the community sample from the parents in the clinical sample. The comparison of the two samples revealed significantly higher levels of PEA/psychological inflexibility in the parents of a child with disability (i.e., parents who had been screened for stress/distress), therefore the PAAQ showed good sensitivity and specificity. The cut-off depicted in the ROC-analysis may, however, not serve a purpose as a definite score for pathological or nonpathological PEA/psychological inflexibility as the PAAQ is not a diagnostic tool. However, when accompanied with a clinical interview, the cut-off may be useful. It makes sense to consider the scores >57 as high, i.e., these levels of PEA may need treatment to increase parental well-being, coping, functionality, and satisfaction. Furthermore, we depicted, not surprisingly, that the treatment-seeking clinical group of distressed parents displayed higher parenting stress, anxiety, and depression. This result supports earlier findings regarding associations between PEA/parental inflexibility, chronic stress and psychological distress (Jin et al., 2021; Lobato et al., 2022), and confirms results regarding higher PEA/psychological inflexibility in parents of children with disabilities (Gur & Reich, 2023a), and in other challenging parenting contexts (Sairanen et al., 2018). In fact, the clinical sample endorsed all items in the 16-item version of the PAAQ on a higher level than the community sample. The observed differences between the community and clinical samples give support for the questionnaire’s capability to differentiate between parents who are expected/not expected to display PEA/psychological inflexibility.

The 16-item PAAQ demonstrated adequate internal consistency and good reliability over time. Although still quite low, the internal consistency of  $\alpha = 0.74$  was above the reliability of  $\alpha = 0.65$  depicted in the original study (Cheron et al., 2009), above the  $\alpha = 0.68$  in the Japanese study (Okajima & Okajima, 2023), but comparable to the  $\alpha = 0.70$ -0.74 obtained for the AAQ-1 in different studies (Hayes et al., 2004). Furthermore, the current test-retest reliability of  $r = 0.82$  was high compared to  $r = 0.72$  in the original study and  $r = 0.49$  in the recent Japanese study (Cheron et al., 2009; Okajima & Okajima, 2023).

There were some limitations to this study. Firstly, only one of the samples (community sample) was recruited specifically for the purpose of a psychometric study. It was also a shortcoming to have proportionally less fathers (14.8%) than mothers in the clinical sample. Unfortunately, the recruitment of fathers has been challenging in several contexts, e.g., in parent training (Wells et al., 2016). In addition, it was a limitation not to include a general measure of PF or another context-specific parental PF instrument to examine the convergent validity. The strength of this study was to investigate two large samples (a community and a clinical, distressed parent sample) as well as an additional test-retest sample. In previous studies, the lack of research of PF instruments in clinical samples has been lifted (Tyndall et al., 2019). It was a strength to include parents of children of different ages and with various disabilities, e.g., autism, ADHD, cerebral palsy, acquired brain injury and intellectual disability. Earlier studies show that parents generally have similar experiences associated with challenging parenting regardless of the child’s specific disability (Prevedini et al., 2020).

The PAAQ may serve several clinical purposes. We need a robust

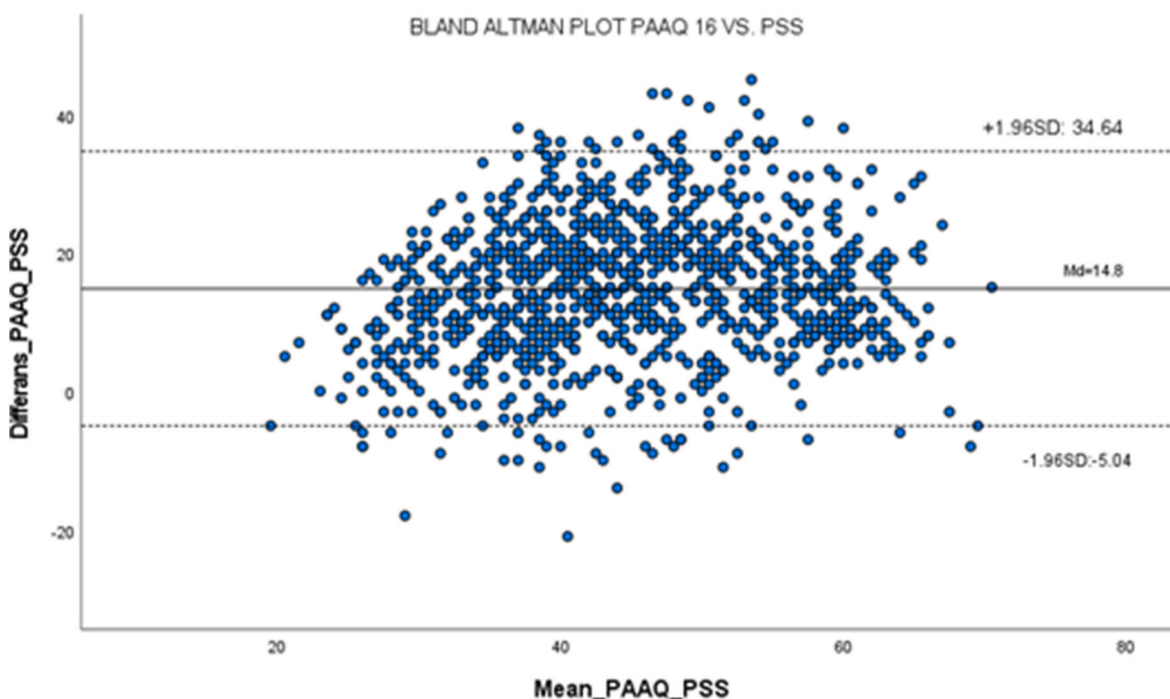


Fig. 3. Bland-Altman plot of the agreement between the PAAQ-16 and the Parental Stress Scale (PSS-18). Note: PAAQ=Parental Acceptance and Action Questionnaire; PSS-18 = Parental Stress Scale.

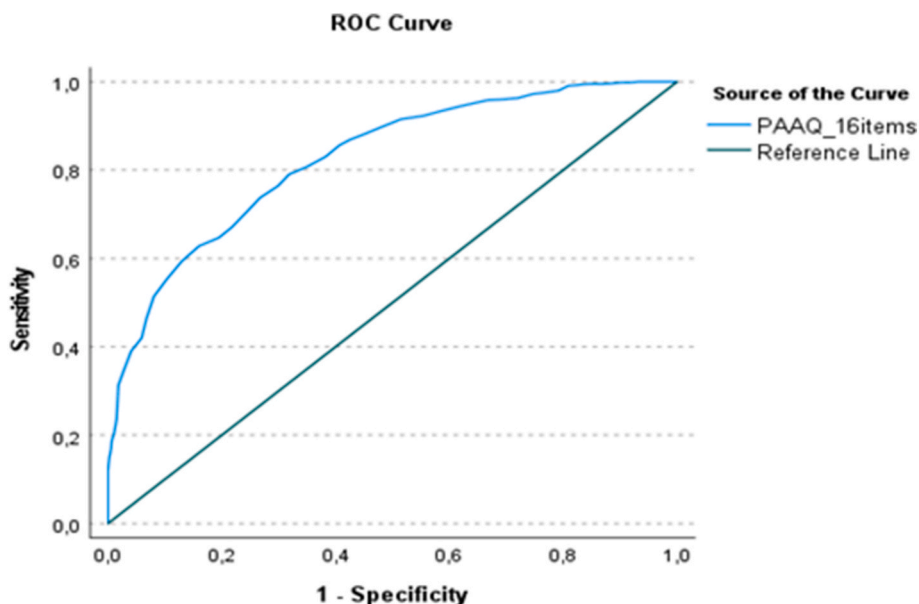


Fig. 4. Roc curve of the 16-item PAAQ. Note: PAAQ=Parental acceptance and action questionnaire; ROC=Receiver operator characteristics.

measurement tool to measure PEA/psychological inflexibility in the context of chronic parenting stress and psychological distress. High parental psychological inflexibility has been associated with psychopathology, less parental self-efficacy, functioning issues when caring for a child, and high psychological inflexibility in their children (Gur & Reich, 2023b; Whittingham & Coyne, 2019), thus comprising a possible risk factor for psychopathology in both parents and children. Therefore, identifying parents in need of support may have a positive impact not only on the well-being of the parent but also on the well-being of the entire family. The three dimensions of the PEA/psychological flexibility depicted in this study may provide valuable information for clinical purposes, e.g., when planning an effective treatment. The recent

systematic review raises the importance of detecting PEA/psychological inflexibility in parents of children with disabilities (Gur & Reich, 2023b). The different dimensions may contribute to the planning of effective clinical interventions. Whether a parent struggles with several aspects of psychological inflexibility, or with just one dimension plays a role. For example, the focus of an intervention may be on avoidance of witnessing child’s negative experiences, on judgmental thoughts about own parenting, or on passivity/extreme reactivity in parenting situations, or all the above. It is common for parents to struggle with different dimensions of inflexibility e.g., have a great difficulty in accepting and flexibly managing their child’s emotional distress, but still coping well with thoughts regarding own parenting (Moyer & Sandoz, 2015). The

PAAQ could be used as part of a needs assessment prior to referring parents to interventions such as ACT, which targets parental psychological inflexibility (Holmberg Bergman et al., 2022; Prevedini et al., 2020), and as a measure of treatment outcome. The PAAQ can provide information on contingencies which maintain avoidance (i.e., of stimuli that evoke inner distress and negatively reinforced behaviors involved in avoidance). Such information can be used to plan effective interventions. Furthermore, the PAAQ accompanied with clinical interview can provide additional information and identify parents at risk of developing more complicated psychopathology, using ineffective or hazardous parenting strategies or developing undesirable distance in parent-child relationship (Shea & Coyne, 2011).

Interestingly, only a few studies have reported associations between parent and child psychological flexibility/EA (Leeming & Hayes, 2016; Williams et al., 2012). It would be of interest for future studies to explore the potential relation more closely. It has been suggested that parents with experiential and situational acceptance are able to model and teach adaptive behavior regulation and experiential acceptance skills in their interactions with the child (Whittingham & Coyne, 2019). Furthermore, the PAAQ could be used as a clinical outcome measure in intervention studies based on the Contextual Behavioral Science. In future research, it may be useful to reconsider some of the items in the PAAQ when it comes to different target groups. It can be speculated that the item, e.g., such as “I try hard to avoid having my child feel depressed or anxious” or “It is bad if my child feels anxious” are geared towards parents of children with anxiety disorders. An alternative wording could lead to higher recognition in a larger group of parents. In addition, a question regarding values in parenting would better catch the definition of parental PF “acting in the service of chosen values”. Therefore, an area of a future studies would be to examine the PAAQ in different parenting populations with new wordings in some of the items, and an added question regarding values. In addition, it would be of interest to examine another context-specific instrument in this target group alongside with the PAAQ, for example, PPFQ (Burke & Moore, 2015) or 6-PAQ (Greene et al., 2015) and/or include a general measure of EA or PF, such as Brief Experiential Avoidance Questionnaire (Gámez et al., 2014), Psy-Flex (Gloster et al., 2021), or AAQ-II to determine convergent validity between the instruments. Furthermore, the results of the current study should be considered as preliminary. Future studies need to administer the 16-item version of the PAAQ to examine whether its psychometric properties can be replicated in other parenting contexts. To conclude, the PAAQ is a psychometrically promising self-rating questionnaire for clinical purposes and as an outcome measure. In line with the previous research (Cheron et al., 2009; Moyer & Sandoz, 2015), the PAAQ has an ability to measure PEA/parental psychological inflexibility, and to successfully discriminate between samples which are anticipated to show different levels of the measured construct.

### Ethical approval

The study was approved by the Regional Ethics Committee in Stockholm, Sweden (2016/526-21-1, 2016/526-31/1). It was performed in accordance with the ethical standards of the Declaration of Helsinki (1964) and its later amendments. Informed consent was obtained from all individual participants included in the study.

### The author note

Data is available upon reasonable request.

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### Declaration of competing interest

Given her role as Editorial Board Member, Lappalainen P. had no involvement in the peer-review of this article and had no access to information regarding its peer-review. Tatja Hirvikoski, Therese Lindström, Ata Ghaderi and Tiina Holmberg Bergman receive royalties from publisher (Hogrefe, Natur och Kultur, Studentlitteratur) for textbooks and manuals unrelated to this study. The rest of the authors had no conflicts of interest.

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