

RESEARCH ARTICLE

Assessing Parental Stress and Satisfaction: Validation of the Hungarian Version of the Parental Stress Scale

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Introduction: Parenting is widely recognized as a meaningful and rewarding experience, yet it also entails significant demands and stress. Major family transitions, beginning with the transition to parenthood and extending to later life changes, profoundly reshape family dynamics and are often associated with elevated parental stress. Therefore, reliable measures are essential to effectively capture the sources and effects of this stress.

Aim: The current study aimed to examine parental stress in a Hungarian sample by validating the Parental Stress Scale (PASS; Berry & Jones, 1995). **Methods:** A cross-sectional study was conducted with 838 Hungarian-speaking parents (75.5% women; mean age = 37.50 years). Participants completed the Hungarian version of the Parental Stress Scale along with additional measures of perceived stress, depression, life satisfaction, parental resilience, and relationship satisfaction.

Results: Exploratory factor analysis and confirmatory factor analysis with systematic model comparison supported a robust two-factor structure (Parental Stress and Parental Satisfaction) yielding a 13-item solution with acceptable fit indices. Both scales demonstrated good internal consistency. Parental stress was positively associated with perceived stress and depression, and negatively associated with life satisfaction, parental resilience, and relationship satisfaction, whereas parental satisfaction showed the opposite pattern. Higher educational attainment and a greater number of children were associated with higher parental stress, while older age and male gender were associated with lower parental satisfaction.

Conclusions: The Hungarian version of the Parental Stress Scale is a reliable and valid instrument for assessing parental stress and satisfaction. It serves as a useful tool for research and intervention programs aimed at supporting parental well-being in Hungary.

Keywords: parental stress, parental satisfaction, parental resilience, psychological well-being, atypical development

Introduction

Parenting is widely recognized as a meaningful and rewarding experience; nonetheless, it also entails significant demands and stress (Miller & Sollie, 1980; Sinha et al., 2016). During the transition to parenthood, the family system, which was previously characterized by a dyadic relationship, reorganizes into multiple subsystems, including mother–father, mother–child, father–child, and triadic subsystems. These are defined by dynamic interactions, whereby each member both influences and is influenced by the others (Minuchin, 1985). Family life is

characterized by significant developmental transitions that commence with the onset of parenthood and extend through subsequent stages. Each of these transitions reshapes family roles and relationships, frequently intensifying parental stress (Nomaguchi & Milkie, 2020).

Stress Processes and Parental Stress

Parental stress refers to the processes that arise from attempts to adapt to the demands of the parenting role and can lead to adverse psychological and physiological outcomes (Deater-Deckard, 2004). This phenomenon is best understood within the framework of the transactional model of stress (Lazarus & Folkman, 1984), which conceptualizes stress as emerging from interactions between the individual and their environment, particularly when circumstances are appraised as exceeding one's available resources. Within this framework, parental stress occurs when parenthood-related stressors exceed the family's capacity to maintain prior levels of functioning through usual coping strategies (Hayes & Watson, 2013). Parental stress cannot be represented by a single indicator; instead, it encompasses a complex process involving the demands of parenting tasks, the parent's psychological well-being and behavior, the quality of the parent-child relationship, and the child's psychosocial adjustment (Deater-Deckard, 2004) mother, father, relatives. Abidin's (1990) Parent-Child Relationship (P-C-R) model conceptualizes parental stress in terms of parental functioning (P; e.g., chronic exhaustion, low social support), child characteristics (C; e.g., low adaptability, developmental delays), and the parent-child relationship (R; e.g., low emotional closeness, perceptions of the relationship as unrewarding).

Although a certain degree of parental stress is normative (Crnic & Greenberg, 1990), higher levels of parental stress have been associated with parental burnout, anxiety, depressive symptoms, and maladaptive parenting behaviors. Importantly, elevated stress levels are also linked to adverse child outcomes, including increased emotional and behavioral difficulties, impairments in socioemotional functioning, and reduced social competence, either directly or indirectly (Fang et al., 2022).

Parental stress is shaped by the different types and durations of stressors across multiple levels (individual, dyadic, and family), which can influence how it is experienced and expressed. According to Lazarus and Cohen (1977), when stress is conceptualized as a stimulus, that is, as an environmental demand, three types can be distinguished: large-scale events that affect many individuals simultaneously (e.g., natural disasters), major events that affect only a few or even a single individual (e.g., raising a child with atypical development), and everyday hassles or minor problems. Elliott and Eisdorfer (1982) classified stressors by duration: acute or short-term (e.g., awaiting surgery), stressor sequences (e.g., the consequences following job loss), intermittent chronic (e.g., recurrent family conflict), and chronic stressors (e.g., incurable illness). Randall and Bodenmann (2009) synthesized these models to propose a multidimensional classification along three axes: external versus internal, major versus minor, and acute versus chronic. It should be noted that classical stress models, including that of Lazarus and Folkman (1984), focused primarily on the individual as the unit of analysis (Martos et al., 2018). In contrast, Randall and Bodenmann (2009) instead suggested that stress may also be understood at the dyadic level, thus emphasizing the relationship itself as the basic unit, incorporating both partners (Martos et al., 2018).

Prior research suggests that parenting stress is elevated among parents of children with atypical development (Ainbinder et al., 1998; Melnyk et al., 2001; Sinha et al., 2016), resulting in significant differences in stress levels compared to parents of typically developing children (e.g., Liang & Tahar, 2024). Atypical development denotes a developmental trajectory that differs from the typical or normative course of development. Such trajectories can appear across emotional, cognitive, physical, or social domains, and are frequently linked to physical and/or mental disabilities that may interfere with the attainment of developmental milestones (Brown et al., 2020). Children with atypical development often present distinct needs and may show varying prognoses (Brown et al., 2020; Burkhalter, 2010; Morrod, 2004). Parents of atypically developing children can experience higher stress, greater psychiatric symptoms (somatization, depression, hostility), and lower life satisfaction compared to parents of typically developing children (Kabasakal et al., 2012).

Parental Stress and Well-Being

Cumulative stress over time can place significant strain on partners and negatively impact both couple and family functioning, though the reverse process may also occur (Slifirczyk et al., 2016). Individuals with higher psychological well-being tend to report greater relationship satisfaction (Martos, Sallay, Szabó et al., 2014). Notably, factors influencing relationship satisfaction may differ between mothers and fathers. Kersh et al. (2006)

demonstrated that partner support is a clear predictor of mothers' relationship satisfaction, and fathers' relationship satisfaction also affected their attitudes toward their child (Kersh et al., 2006; Sheeran et al., 1997). For fathers, however, relationship satisfaction was not significantly associated with perceived parental efficacy; rather, it depended more on time spent with their partner and shared social roles (Kersh et al., 2006).

In response to parental stress, many parents develop effective coping strategies for managing challenges and adverse situations (Iacob et al., 2020; Peer & Hillman, 2014). Coping processes are closely linked to resilience, which refers to positive adaptation in the face of child-rearing difficulties (Suzuki et al., 2013). Key resources include parents' belief in their knowledge of their child's characteristics, perceived social support, and acceptance and positive perception of the parental role (Suzuki et al., 2015). Parental resilience, therefore, comprises both internal (e.g., positive perceptions) and external factors (e.g., social support; Sallay et al., 2021; Suzuki et al., 2013).

Several factors have been found to be associated with the individual well-being of parents. Sloper et al. (1991) examined factors related to life satisfaction among parents of children diagnosed with Down syndrome. Their results indicated that mothers' life satisfaction was positively associated with the children's autonomy and irritability. Fathers' life satisfaction, in contrast, was negatively influenced by the use of a passively accepting coping strategy used to manage child-related problems, financial difficulties, and past hardships. Nevertheless, relationship and family cohesion emerged as important determinants of life satisfaction for both mothers and fathers. Kabasakal et al. (2012) found that children's atypical developmental characteristics were related to parents' self-concept as well as their levels of stress and anxiety, which collectively impacted their life satisfaction. According to Shivers et al. (2016), both child-related characteristics (e.g., internalizing and externalizing symptoms, polyphagia) and maternal factors (e.g., avoidant coping style, stress level) were significantly correlated with life satisfaction.

Overall, these findings suggest that parental stress and social experiences interact, potentially influencing both stress levels and life satisfaction (Sloper et al., 1991). Despite the frequent presence of chronic health problems or developmental difficulties, partners often report high parental role satisfaction, which may reflect resilience in the face of stress (Barnett et al., 2003).

Parental Stress Scale

A systems-level approach to these relationships necessitates the development and use of valid diagnostic tools for assessing parental stress. Developed by Berry and Jones (1995), the Parental Stress Scale (PASS) was designed to capture individual levels of stress related to raising children, focusing on the parents' perceptions of their parental role rather than the sources of stressors (Berry & Jones, 1995; Nærde & Sommer Hukkelberg, 2020). Importantly, Berry and Jones (1995) aimed to incorporate both the rewarding and demanding aspects of parenthood, so the PASS includes items that reflect not only parental stress but also parental satisfaction.

In the original development study by Berry and Jones (1995), the PASS started as an 18-item instrument, and a principal axis factor analysis with Varimax rotation yielded a refined 16-item solution with four dimensions: Parental Rewards, Parental Stressors, Lack of Control, and Parental Satisfaction. Although the original scale was designed to take a broad, unidimensional approach, the index sum score is intended to indicate whether the costs outweigh the rewards (Berry & Jones, 1995; Nærde & Sommer Hukkelberg, 2020). Subsequent adaptations on Chinese (Cheung, 2000), Spanish (Oronoz et al., 2007), Portuguese (Algarvio et al., 2018), Danish (Pontoppidan et al., 2018), and Norwegian samples (Nærde & Sommer Hukkelberg, 2020) have generally produced shorter scales with fewer factors, reflecting both cultural context and methodological choices. Specifically, Cheung (2000) relied on exploratory and confirmatory factor analyses to establish a 17-item two-factor structure (Parental satisfaction, Parental strain). Oronoz et al. (2007) used exploratory and confirmatory factor analyses to derive a 12-item two-factor model (Baby's Rewards, Parental Stress). Algarvio et al. (2018) applied exploratory factor analysis with oblique rotation and confirmatory factor analysis to support a 15-item four-factor solution (Fears/Anxiety, Parental Satisfaction, Parental Stressors, and Lack of Control). Pontoppidan et al. (2018) combined exploratory factor analysis, confirmatory factor analysis, and Rasch modeling to justify a 16-item two-factor model (Parental Stress, Lack of Parental Satisfaction). Nærde and Sommer Hukkelberg (2020) employed a split-sample design, using exploratory factor analysis followed by confirmatory factor analysis to establish a 13-item two-factor solution (Parental Stressors and Lack of Rewards).

The PASS is widely used in research and clinical settings. Its application encompasses different populations, such as first-time parents (Pontoppidan et al., 2018), parents of children with chronic health conditions (Zelman

& Ferro, 2018) and autism spectrum disorder (Das et al., 2017), as well as population-based (Algarvio et al., 2018) and mixed clinical or non-clinical samples (Leung & Tsang, 2009).

Current Study

The scale was designed to capture individual levels of stress related to raising children, focusing on parents' perceptions of their parental role rather than the sources of stressors (Berry & Jones, 1995; Nærde & Sommer Hukkelberg, 2020). However, given that parental demands differ throughout childhood and among various parent groups, further research should examine the application of the PASS in diverse subgroups, cultures, and settings (Nærde & Sommer Hukkelberg, 2020). To the best of our knowledge, this is the first study to examine the psychometric properties of the Hungarian PASS. Accordingly, the current study aims to examine the reliability and validity of the Hungarian version of the PASS in a sample of Hungarian-speaking parents, including those raising children with atypical development. The Hungarian translation of the PASS is attributed to Markó and Hegedűs (2018), and its validation is a core component of the current research.

Methods

Participants

The study sample consisted of 838 individuals, comprising 633 females (75.5%) and 205 males (24.5%). The mean age of the respondents was 37.50 years ($SD = 7.61$). Participants had an average of 16.65 years ($SD = 3.58$) of formal education. The mean duration of romantic relationships was 11.61 years ($SD = 6.72$), and participants had an average of 1.77 children ($SD = 1.29$). Among them, 131 participants reported raising a child with atypical development, defined by affirmative responses to the screening question: "Are you raising a child who has been involved in any specialized developmental activities or care, and in whom signs of atypical development can still be identified?". Participants with multiple children were requested to answer with reference to their youngest child. The mean age of the index children was 5.30 years ($SD = 5.02$). The term "index child" denotes the child about whom the parent completed the questionnaires.

Measures

Parental Stress Scale

We used the Hungarian version of the Parental Stress Scale (PASS; Berry & Jones, 1995) in our survey. PASS is an 18-item measure that assesses parental stress. It includes items such as "Caring for my child sometimes takes more time and energy than I have to give." Respondents indicate their degree of agreement with each item on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The Hungarian translation of the PASS was prepared by Markó and Hegedűs (2018) for research purposes and has not been formally published.

Perceived Stress Scale

We administered the Hungarian version (Stauder & Konkolj Thege, 2006) of the Perceived Stress Scale (Cohen et al., 1983) to assess perceived stress over the past month. The 10-item shortened version used in this study includes items such as "In the last month, how often have you been upset because of something that happened unexpectedly?". Responses are scored on a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). The scale demonstrated excellent internal consistency (Cronbach's $\alpha = .91$).

Beck Depression Questionnaire

We used the Hungarian version (Rózsa et al., 2001) of the Beck Depression Inventory (Beck et al., 1961) to assess depressive symptoms across emotional, cognitive, and somatic domains. The 9-item shortened version used in this study includes statements such as "I have lost all interest in other people". Respondents rated items on a 4-point Likert scale ranging from 1 (*not true*) to 4 (*certainly true*). The questionnaire demonstrated good internal consistency (Cronbach's $\alpha = .83$).

Satisfaction With Life Scale

We included the Hungarian version (Martos, Sallay, Désfalvi et al., 2014) of the Satisfaction With Life Scale (SWLS; Diener et al., 1985) in our survey. SWLS is a 5-item measure that assesses the cognitive-evaluative component of subjective well-being, also known as life satisfaction. It includes items such as “If I could live my life over, I would change almost nothing”. Respondents indicate their degree of agreement with each item on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). The scale demonstrated good internal consistency (Cronbach’s $\alpha = .89$).

Parenting Resilience Elements Questionnaire

We used the Hungarian version (Markó et al., 2019) of the Parenting Resilience Elements Questionnaire (PREQ; Suzuki et al., 2015) in our survey. The PREQ is a 13-item measure designed to assess three components of parental resilience: knowledge of the child’s characteristics (e.g., “I can figure out the reason behind my child’s trouble”), perceived social support (e.g., “I have someone who I can trust my child with”), and positive perceptions of parenting (e.g., “I value interactions with my child”). Responses are given on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Internal consistency of the scales was acceptable (knowledge of the child’s characteristics: Cronbach’s $\alpha = .67$; perceived social support: Cronbach’s $\alpha = .74$; positive perceptions of parenting: Cronbach’s $\alpha = .70$).

Relationship Assessment Scale

We included the Hungarian version (Martos, Sallay, Szabó et al., 2014) of the Relationship Assessment Scale (RAS; Hendrick, 1988) in our survey. The RAS is an 8-item measure that assesses relationship satisfaction. The Hungarian version includes one more item than the original that assesses the respondent’s satisfaction with their sexual life. It includes items such as “How well does your partner meet your needs?”. Items are rated on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The scale demonstrated excellent internal consistency (Cronbach $\alpha = .91$).

Procedure

We conducted a cross-sectional study in Hungary with a convenience sample of Hungarian-speaking voluntary participants. The data were collected using the LimeSurvey platform between February 2022 and June 2023. The online questionnaire was distributed on several social media sites (e.g., Facebook) and personal networks with the assistance of psychology students who could use the database for their coursework.

Participants were informed that the purpose of the study was to “explore everyday parental experiences”. They were assured that all data would be treated confidentially and analyzed anonymously. Informed consent was obtained through participants’ acceptance of the introductory information, followed by the online completion and submission of the questionnaire. Eligibility was restricted to adults (aged 18 years or older), and all respondents met this criterion. The study received ethical approval from the Joint Committee on Research Ethics in Psychology (EPKEB 2019-126, 2021-11, 2022-40).

Data Analysis

Given the inconsistent factor structures reported in previous adaptations of the scale, an exploratory factor analysis (EFA) was initially conducted to determine the most appropriate latent structure in the Hungarian context, followed by confirmatory factor analyses (CFA) in an independent subsample. The total sample ($N = 838$) was divided into two subsamples of approximately equal size using a random number generator. EFA was conducted on the first subsample ($n = 402$), and CFA was subsequently performed on the second subsample ($n = 436$) to validate the structure identified.

Prior to the EFA, the suitability of the data for factor analysis was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (values $\geq .60$ indicating adequacy and $\geq .80$ indicating very good adequacy) and Bartlett’s test of sphericity. The number of factors to be retained was determined based on parallel analysis and inspection of the scree plot. Exploratory factor analysis was conducted using principal axis factoring, and the extracted factors were subsequently rotated using an oblique (promax) rotation, allowing for correlations between latent factors. Item retention decisions were guided by the magnitude and interpretability of factor loadings, item uniqueness, and the presence of cross-loadings. Factor loadings of .40 or higher were considered salient for factor

interpretation. Items showing low factor loadings, high uniqueness, or conceptually inconsistent loading patterns were considered for exclusion in order to obtain an interpretable factor structure.

CFA was conducted using maximum likelihood (ML) estimation. Missing data were handled using full information maximum likelihood (FIML). A series of theoretically motivated and hierarchically nested models were specified and tested. These included a baseline one-factor model (Model A), a two-factor model without correlated residuals (Model B), a two-factor model with theoretically justified residual covariances (Model C), and an alternative bifactor model including a general factor in addition to the two content-based factors (Model D). The one-factor model was treated as the baseline model for substantive model comparisons, representing the original unidimensional structure of the scale.

Model fit was evaluated using the chi-square statistic (χ^2), the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA) with 90% confidence intervals, and the Standardized Root Mean Square Residual (SRMR). Conventional cutoff criteria were applied to indicate acceptable model fit (CFI and TLI $\geq .90$, RMSEA $\leq .08$, SRMR $\leq .08$). Given the sensitivity of the chi-square statistic to sample size, model evaluation emphasized comparative fit indices and formal model comparisons.

Nested models were compared using chi-square difference tests to determine whether successive model modifications resulted in statistically significant improvements in fit. Modification indices were consulted to identify potential sources of localized model misfit, and residual covariances were added only when they were theoretically justified by substantial overlap in item content.

Discriminant validity between latent factors was assessed using the Heterotrait–Monotrait Ratio of correlations (HTMT). HTMT values below .85 were interpreted as evidence of adequate discriminant validity, with values below .90 considered acceptable under a more liberal criterion. Convergent validity was evaluated by calculating the Average Variance Extracted (AVE) for each factor. AVE values approaching or exceeding .50 were considered indicative of adequate convergent validity when supported by satisfactory reliability estimates.

Distributional properties were examined using skewness and kurtosis statistics. Values within commonly accepted cutoffs ($|\text{skewness}| < 2$; $|\text{kurtosis}| < 7$) were considered acceptable for the use of Pearson correlations. Construct validity was examined by calculating correlations between the scale scores and indicators of individual and relational well-being. Associations with sociodemographic variables were examined using multiple linear regression analyses, in which the newly identified Parental Stress and Parental Satisfaction scales served as dependent variables and sociodemographic characteristics were entered simultaneously as predictors. Statistical analyses were conducted using JASP (version 0.19.3.0).

Results

Exploratory Factor Analysis

EFA and CFA were conducted to examine the latent structure of the PASS. The overall KMO value was .87, indicating very good sample adequacy. Item-level KMO values ranged from .66 to .93, indicating that all items were suitable for inclusion in the factor analysis. Bartlett's test of sphericity was significant ($\chi^2(153) = 2316.30$, $p < .001$), suggesting that the correlation matrix significantly differed from the identity matrix and thereby supporting the factorability of the data.

The results of the EFA is supported a two-factor solution. The first factor had an eigenvalue of 5.34 and accounted for 21.4% of the total variance, whereas the second factor had an eigenvalue of 2.52 and accounted for 15.8% of the variance. Together, the two factors explained 37.2% of the total variance. Based on the content of the item loadings, the first factor was labeled *Parental Satisfaction*, reflecting positive perceptions and contentment with the parenting role. The second factor was labeled *Parental Stress*, reflecting negative experiences and stress related to parenting. The factors showed a moderate negative correlation ($r = -.41$), suggesting that although conceptually distinct, they were not independent. The chi-square test was significant [$\chi^2(118) = 325.61$, $p < .001$], indicating that the model did not provide a perfect fit to the data. However, given that the chi-square statistic is highly sensitive to sample size, this result should be interpreted alongside additional fit indices when evaluating model adequacy.

Item-level inspection revealed that several items demonstrated suboptimal psychometric properties. Item PASS08 (“Having a child gives me a more certain and optimistic view for the future”) did not load substantially on either factor and exhibited high uniqueness. Similarly, PASS13 (“The behavior of my child is often embarrassing or stressful to me”) did not load substantially on either factor and also displayed high unique-

ness. PASS14 (“If I had it to do over again, I might decide not to have a child”) was the only item with a negative factor loading, suggesting that it tapped into a construct opposite to that represented by the other items of the first factor (Parental Satisfaction). In addition, PASS17 (“I am satisfied as a parent”) cross-loaded on both factors, raising concerns about its factorial distinctiveness. Finally, PASS04 (“I sometimes worry whether I am doing enough for my child”) exhibited high uniqueness and only weakly loaded on its designated factor. Based on these psychometric considerations, items PASS08, PASS13, PASS14, PASS17, and PASS04 were excluded, resulting in a 13-item solution retained for CFA (see Table 1).

Table 1. Two-Factor Solution of the Exploratory Factor Analysis of the Parental Stress Scale

Variable	Item	First factor – Parental Satisfaction	Second factor – Parental Stress	Uniqueness
PASS01	I am happy in my role as a parent.	.62	-.12	.54
PASS02	There is little or nothing I wouldn't do for my child if it was necessary.	.56	.23	.74
PASS03	Caring for my child sometimes takes more time and energy than I have to give.	.15	.62	.67
PASS04*	I sometimes worry whether I am doing enough for my child.	.15	.40	.87
PASS05	I feel close to my child.	.75	.17	.52
PASS06	I enjoy spending time with my child.	.69	-.05	.50
PASS07	My child is an important source of affection for me.	.76	.19	.51
PASS08*	Having a child gives me a more certain and optimistic view for the future.	.37	-.24	.73
PASS09	The major source of stress in my life is my child.	-.12	.43	.76
PASS10	Having a child leaves little time and flexibility in my life.	.10	.72	.52
PASS11	Having a child has been a financial burden.	-.04	.48	.75
PASS12	It is difficult to balance different responsibilities because of my child.	.06	.74	.49
PASS13*	The behaviour of my child is often embarrassing or stressful to me.	-.27	.17	.86
PASS14*	If I had it to do over again, I might decide not to have a child.	-.45	.09	.76
PASS15	I feel overwhelmed by the responsibility of being a parent.	-.26	.49	.59
PASS16	Having a child has meant having too few choices and too little control over my life.	-.22	.56	.54
PASS17*	I am satisfied as a parent.	.55	-.18	.58
PASS18	I find my child enjoyable.	.82	.09	.39

Note. Values represent rotated factor loadings from the pattern matrix obtained using oblique (promax) rotation. Loadings $\geq .40$ were considered salient for interpretation. Items marked with * were omitted based on factor loadings and item uniqueness.

Confirmatory Factor Analysis and Model Comparison

The two-factor structure identified in the EFA was subsequently evaluated using CFA. The two-factor model consisted of 13 items, with seven items loading on the Parental Stress factor and six items loading on the Parental Satisfaction factor. The KMO measure of sampling adequacy for the confirmatory sample was .86, with individual item values ranging from .80 to .91. Bartlett's test of sphericity was significant [$\chi^2(78) = 2021.47$, $p < .001$], further supporting the suitability of the data for confirmatory analysis.

A series of competing and hierarchically nested models were estimated and systematically compared. First, a baseline one-factor model (Model A) comprising the 13 retained items demonstrated poor fit to the data

$[\chi^2(65) = 742.79, p < .001, \chi^2/df = 11.43]$, with unacceptable fit indices (CFI = .66, TLI = .59, RMSEA = .16, SRMR = .12), indicating that a unidimensional representation of parental stress and parental satisfaction was not supported.

Next, a two-factor model without correlated residuals (Model B) showed a substantial improvement in model fit $[\chi^2(64) = 308.84, p < .001, \chi^2/df = 4.83; CFI = .88, TLI = .85, RMSEA = .09, SRMR = .07]$. Chi-square difference testing confirmed that Model B fit the data significantly better than Model A $[\Delta\chi^2(1) = 433.95, p < .001]$, providing empirical support for the distinction between Parental Satisfaction and Parental Stress.

Allowing theoretically justified residual covariances resulted in further improvement in model fit. The two-factor model with correlated residuals (Model C) demonstrated acceptable to good fit across all indices $[\chi^2(61) = 188.22, p < .001, \chi^2/df = 3.08; CFI = .94, TLI = .92, RMSEA = .07, SRMR = .06]$. Chi-square difference testing indicated that Model C fit the data significantly better than Model B $[\Delta\chi^2(3) = 120.62, p < .001]$. Residual covariances were specified between PASS10 (“Having a child leaves little time and flexibility in my life”) and PASS12 (“It is difficult to balance different responsibilities because of my child”) due to overlapping content related to time and role demands; between PASS07 (“My child is an important source of affection for me”) and PASS02 (“There is little or nothing I would not do for my child if it were necessary”), capturing closely related affective aspects of parental love and commitment; and between PASS18 (“I find my child enjoyable”) and PASS06 (“I enjoy spending time with my child”), reflecting shared variance associated with the direct enjoyment of parent–child interaction. All residual covariances were specified only between items loading on the same latent factor and were theoretically justified by overlapping item content.

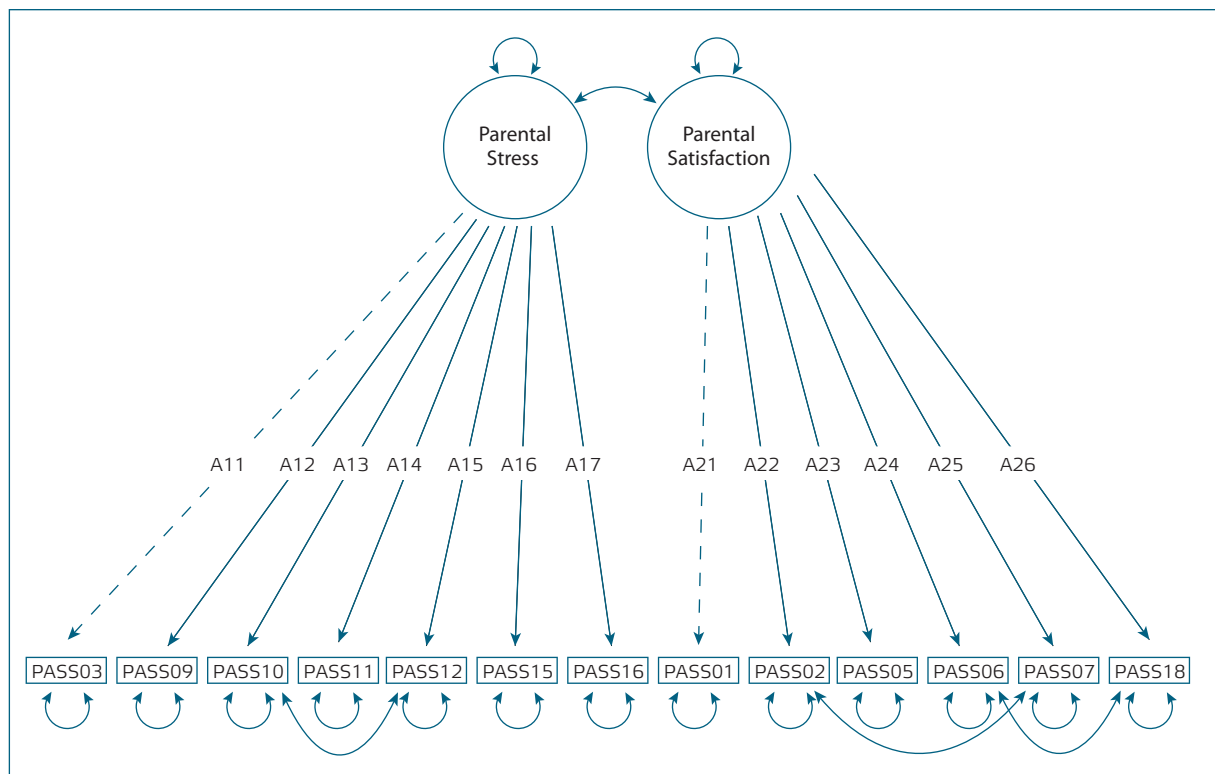
In addition, an alternative bifactor model including a general factor alongside the two content-based factors (Model D) was estimated. Although this model showed slightly improved global fit indices $[\chi^2(52) = 123.31, p < .001, \chi^2/df = 2.37; CFI = .96, TLI = .95, RMSEA = .06, SRMR = .03]$, the increase in model complexity did not result in a significantly clearer representation of the construct. Several loadings on the general factor were weak, suggesting limited substantive contribution beyond the two-factor structure (see Table 2). Taken together, the systematic model comparison supported the more parsimonious two-factor model with theoretically justified residual covariances (Model C) as the most appropriate and interpretable representation of the data (see Figure 1). The potential theoretical contribution of the bifactor model (Model D) is considered in the Discussion section.

Table 2. Standardized Factor Loadings for the Competing CFA Models of the Hungarian PASS

Item	Model A	Model B - F1	Model B - F2	Model C - F1	Model C - F2	Model D - G	Model D - S1	Model D - S2
PASS01	.70	–	.68	–	.65	.58	–	.40
PASS02	.41	–	.47	–	.42	.16	–	.49
PASS03	–.34	.49	–	.46	–	–.33	.34	–
PASS05	.63	–	.68	–	.67	.39	–	.56
PASS06	.73	–	.79	–	.85	.42	–	.67
PASS07	.64	–	.72	–	.67	.34	–	.66
PASS09	–.42	.58	–	.57	–	–.45	.34	–
PASS10	–.35	.68	–	.56	–	–.34	.73	–
PASS11	–.29	.51	–	.48	–	–.32	.39	–
PASS12	–.39	.69	–	.58	–	–.37	.68	–
PASS15	–.56	.64	–	.70	–	–.71	.14	–
PASS16	–.60	.68	–	.74	–	–.77	.17	–
PASS18	.77	–	.79	–	.87	.55	–	.56

Note. Model A = original one-factor model; Model B = two-factor model without correlated residuals; Model C = two-factor model with correlated residuals; Model D = bifactor model with one general factor and two specific factors; F1 = Parental Stress factor; F2 = Parental Satisfaction factor; G = the general factor, S1 = specific Parental Stress factor; S2 = specific Parental Satisfaction factor. Dashes (–) indicate that the item was not specified on the given factor in that model.

Figure 1. Confirmatory Factor Analysis Model of Latent Variables of Parental Stress and Parental Satisfaction



Discriminant and Convergent Validity

Discriminant validity between Parental Satisfaction and Parental Stress was assessed using HTMT. The HTMT value between the two factors was 0.35, which is well below the recommended threshold of .85, indicating adequate discriminant validity and supporting the distinction between the two constructs.

Convergent validity was evaluated using the Average Variance Extracted (AVE). AVE met the recommended threshold of .50 for the Parental Satisfaction factor (AVE = 0.50), indicating satisfactory convergent validity. In contrast, AVE for the Parental Stress factor was below the conventional threshold (AVE = 0.34). Given the acceptable standardized factor loadings, good internal consistency, and satisfactory overall model fit, the convergent validity of the Parental Stress factor was considered acceptable.

Construct Validity Analysis

The final version of the Parental Stress Scale consisted of 13 items organized into two factors. Internal consistency was good for both scales (Parental Stress: Cronbach's $\alpha = .80$; Parental Satisfaction: Cronbach's $\alpha = .83$). The two scales were moderately and negatively correlated ($r = -.33$, $N = 838$), supporting their conceptual distinctiveness while indicating theoretically meaningful overlap. Descriptive statistics indicated an approximately normal distribution for Parental Stress ($M = 18.47$, $SD = 5.38$; skewness = 0.28, kurtosis = -0.26), and a moderately negatively skewed but acceptably peaked distribution for Parental Satisfaction ($M = 28.08$, $SD = 2.41$; skewness = -1.54, kurtosis = 2.55).

To evaluate construct validity, Pearson correlation analyses were conducted between the two factors and indicators of individual and relational well-being. Parental stress correlated weakly and negatively with life satisfaction ($r = -.28$), knowledge of the child's characteristics ($r = -.22$), perceived social support ($r = -.11$), relationship satisfaction ($r = -.22$), parental resilience ($r = -.32$), and positive perceptions of parenting ($r = -.41$). In contrast, it was moderately and positively associated with perceived stress ($r = .42$) and depression ($r = .37$).

Parental satisfaction demonstrated weak to moderate positive correlations with life satisfaction ($r = .31$), knowledge of the child's characteristics ($r = .30$), perceived social support ($r = .28$), relationship satisfaction ($r = .21$), parental resilience ($r = .55$), and positive perceptions of parenting ($r = .68$). Negative weak correlations emerged with perceived stress ($r = -.27$) and depression ($r = -.30$). All reported correlations were statistically significant at $p < .001$.

To examine sociodemographic predictors of parental stress, a multiple linear regression analysis was conducted including parental age, years of education, number of children, gender, marital status, raising a child with atypical development, and perceived financial security as simultaneous predictors. The regression model was statistically significant [$F(8, 787) = 7.20, p < .001$], explaining 6.8% of the variance in parental stress ($R^2 = .068$, adjusted $R^2 = .059$). Years of education was positively associated with parental stress ($\beta = .20, p < .001$), indicating higher stress levels among parents with more years of education. A higher number of children was also associated with increased parental stress ($\beta = .09, p = .016$). Gender was again a significant predictor, with fathers reporting higher parental stress compared to mothers ($\beta = -1.08, p = .017$). Parents reporting financial savings experienced significantly lower levels of parental stress compared to parents who reported financial difficulties ($\beta = -1.25, p = .039$). In addition, parental age showed a trend-level negative association with parental stress ($\beta = -.07, p = .082$), suggesting slightly lower stress among older parents. Raising a child with atypical development was also associated with parental stress at a trend level ($\beta = -0.92, p = .080$). Marital status and perceived financial security at the “just enough to get by” level were not significantly related to parental stress.

A parallel multiple linear regression analysis was conducted to examine predictors of parental satisfaction utilizing the same set of sociodemographic variables. The overall model was statistically significant [$F(8, 787) = 5.26, p < .001$], explaining 5.1% of the variance in parental satisfaction ($R^2 = .051$, adjusted $R^2 = .041$). Regarding individual predictors, higher parental age was associated with lower parental satisfaction ($\beta = -.10, p = .008$). Years of education also showed a small but significant negative association with parental satisfaction ($\beta = -.07, p = .041$). In addition, a greater number of children predicted lower parental satisfaction ($\beta = -.09, p = .014$). Gender was a significant predictor, with fathers reporting lower levels of parental satisfaction compared to mothers ($\beta = -.46, p = .022$). Marital status, raising a child with atypical development, and perceived financial security were not significantly associated with parental satisfaction.

Discussion

The family environment plays a crucial role in child development. However, parents can best support their children's growth if they also have access to resources that enable them to function optimally (Danis, 2015). To better understand the parental experience within this context, it is essential to examine reliable measures of parental stress and satisfaction. Parental stress reflects the extent to which parenting responsibilities are experienced as demanding, overwhelming, and restrictive across multiple life domains. Parental satisfaction, in turn, captures the positively valenced aspects of parenting, such as emotional closeness, enjoyment, and fulfillment derived from the relationship with the child (Berry & Jones, 1995; Nærde & Sommer Hukkelberg, 2020).

The psychometric evaluation of the Hungarian version of the Parent Stress Scale (Berry & Jones, 1995) confirmed its reliability and validity. For this purpose, the total sample was divided into two randomized subsamples on which EFA and CFA were conducted. Findings consistently supported a two-factor solution, distinguishing between the related but distinct dimensions of “Parental Stress” and “Parental Satisfaction” (cf. Nærde & Sommer Hukkelberg, 2020). The factors correlated negatively with moderate strength, indicating conceptual relatedness while maintaining discriminant validity.

The final version of the scale comprised 13 items, selected from the original 18 based on psychometric considerations. CFA demonstrated an overall acceptable model fit consistent with the complexity of the constructs assessed. This conclusion was further supported by a systematic comparison of competing confirmatory models, which identified a parsimonious two-factor structure as the most appropriate representation of the data. Both dimensions, “Parental Stress” and “Parental Satisfaction”, demonstrated good internal consistency. Beyond the evaluation of the two-factor solution, we also examined an alternative bifactor representation of the data. The bifactor model, which included a general parental stress factor and two method-related factors for positively and negatively worded items, demonstrated only marginal superiority over the two-factor solution and yielded an inconclusive coefficient structure. These findings suggest that, although positive and negative aspects of parental experiences can be distinguished, they may share certain underlying characteristics. Further research should investigate the theoretical and methodological significance of this possibility.

Construct validity was supported by theoretically consistent associations between both factors and indicators of individual and relational well-being, including life satisfaction, perceived stress, depression, parental resilience, and relationship satisfaction. Although these associations were generally consistent with expectations, several correlations were small to moderate in magnitude. This pattern may reflect life-cycle variation in parenting experiences, as parents of children at different developmental stages, as well as those raising children with atypical development,

encounter distinct demands and resources that may influence how parenting-specific stress and satisfaction relate to broader indicators of well-being and adjustment. At the same time, evidence of adequate discriminant and convergent validity indicated that the two factors represent coherent yet distinct dimensions of parental experience.

Beyond psychometric properties, the scale also demonstrated sensitivity to sociodemographic variation in parental experiences. Parental stress was positively associated with years of education and number of children, while parental age showed a trend-level negative association. Parental satisfaction was negatively associated with parental age, years of education, and number of children. Gender also emerged as a significant predictor, with fathers reporting higher parental stress and lower parental satisfaction compared to mothers. Associations between raising a child with atypical development and parental stress were observed at a trend level, whereas no such associations were found for parental satisfaction. Marital status was not significantly related to either parental stress or parental satisfaction. Regarding perceived financial security, parents reporting financial savings experienced significantly lower parental stress compared to those reporting financial difficulties, whereas no significant associations were found for parental satisfaction.

Strengths and Limitations

The key strength of this study is that it represents the first validation of the Parent Stress Scale within a Hungarian context, thereby making an important contribution to the measurement of parental well-being in this cultural setting. The use of both EFA and CFA on separate subsamples ensured methodological rigor. The inclusion of systematic CFA model comparison further strengthened the evaluation of the scale's latent structure. The final two-factor model aligns with previous findings and demonstrates good reliability and construct validity, as supported by correlations with a wide range of individual and relational well-being indicators. The examination of sociodemographic predictors provided a more comprehensive picture of how parental stress and satisfaction vary across key parental characteristics, going beyond simple group comparisons.

Beyond its contribution within the Hungarian context, the factor structure identified in this study can be meaningfully situated within the broader international literature on the Parental Stress Scale. Similar to the Chinese (Cheung, 2000), Spanish (Ornoz et al., 2007), Danish (Pontoppidan et al., 2018), and Norwegian (Nærde & Sommer Hukkelberg, 2020) adaptations, the Hungarian version demonstrated a two-factor structure, distinguishing between Parental Stress and Parental Satisfaction. In contrast, the Hungarian data supported a more parsimonious two-factor structure rather than the four-factor solutions proposed in the original scale development and subsequent adaptations (Algarvio et al., 2018; Berry & Jones, 1995). This outcome may indicate cultural differences in the conceptualization of the rewarding and demanding aspects of parenting, with the Hungarian results supporting a clear distinction between stress-related and satisfaction-related parental experiences. These findings place the Hungarian version of the scale within the broader context of international research and highlight its alignment with established psychometric evidence.

Nonetheless, the present research had some limitations that should be considered when interpreting the results. First, data collection relied on access-based sampling, which constrains the representativeness of the sample in relation to the broader Hungarian parental population. In addition, men and parents of children with atypical development were markedly underrepresented, which may further limit the generalizability of the results. It is also important to note that participants with multiple children were asked to respond with reference to their youngest child. This approach may have constrained the assessment of parenting stress by overlooking potential influences from older children, particularly in families where an older sibling has atypical development. Future research should seek to evaluate the robustness of the Hungarian version of the Parent Stress Scale in more diverse and representative samples, with particular attention to underrepresented subgroups. Longitudinal designs are also needed to assess the temporal stability of the instrument (e.g., test-retest reliability) and to examine its sensitivity across diverse demographic and cultural contexts. Establishing these psychometric properties will support the broader applicability and scientific utility of the scale.

Conclusion, Implications, and Future Directions

The current study substantiates the reliability and validity of the Hungarian version of the Parental Stress Scale, confirming its two-factor structure that captures Parental Stress and Parental Satisfaction as distinct yet related constructs. The scale demonstrated sensitivity to individual differences in parental experiences, as reflected in its associations with sociodemographic characteristics such as age, education, gender, family size, and raising children with atypical development. These findings underscore its applicability across diverse parental populations.

Research indicates that parental stress, a critical factor influencing family well-being, can be reduced through partners' capacity for dyadic coping. Because stress in intimate relationships affects not only the individual but also the dyad as a unit, coping processes emerge through partners' mutual interaction and cooperation (Bodenmann, 1997; Martos et al., 2012). Prevention and intervention programs targeting the parental relationship may therefore yield substantial benefits for the well-being of both parents and children (García-López et al., 2016; Zemp et al., 2016). However, such programs are still underdeveloped in Hungary (Danis et al., 2020). Developing them in the future appears essential, with the assessment of parental stress providing a crucial entry point.

In this respect, the Hungarian version of the Parenting Stress Scale (PASS) offers a valuable tool. The scale has demonstrated reliability and validity, capturing parental stress and satisfaction within a comprehensive two-factor structure. This psychometric robustness supports its application in both research and practice, thereby advancing a more precise understanding of parental well-being and challenges.

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Author contribution

Petra SIMON-ZÁMBORI: conceptualization, design, methodology, investigation, project administration, data management, formal analysis, interpretation, writing original draft, writing review and editing.

Tamás MARTOS: conceptualization, design, methodology, funding acquisition, project administration, formal analysis, interpretation, supervision, writing original draft, writing review and editing.

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Declaration of interest statement

The authors have no conflicts of interest to disclose.

Ethical statement

This manuscript is the authors' original work.

All participants engaged in the research voluntarily and anonymously.

Their data are stored in coded materials and databases without personal data.

The studies involving human participants were reviewed and approved by the Joint Committee on Research Ethics in Psychology (EPKEB 2019-126, 2021-11, 2022-40).

Data availability statement

Datasets presented in this article are available from the corresponding author upon reasonable request.

Declaration on using artificial intelligence in research and manuscript preparation

The authors have used AI technologies in the preparation of the manuscript. They have used AI-based language assistance tools (DeepL, Perplexity) to translate the manuscript text from Hungarian to English, and performed manual review and editing of the translated text to ensure accuracy and clarity. They have used Grammarly for checking grammar, spelling, and language accuracy in the English manuscript. All suggestions were manually reviewed and applied by the authors.

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Appendix

Final Hungarian Version of the Parental Stress Scale (PASS)

Szülői Stressz Kérdőív

Az alábbi állítások a szülőséggel kapcsolatos érzéseket és tapasztalatokat írják le. Kérjük, hogy minden egyes állításnál a saját gyermekével való kapcsolatára gondoljon. Kérjük, írja be azt a számot az egyes állítások után, ami a legjobban tükrözi, hogy mennyire ért egyet az adott állítással.

1 = egyáltalán nem értek egyet

2 = nem értek egyet

3 = nem tudom eldönteni

4 = egyetértek

5 = teljes mértékben egyetértek

1. A szülői szerep boldogsággal tölt el.
2. Ha kell, szinte bármit megtennék a gyermekemért.
3. A gyermekemről való gondoskodás olykor több időt és energiát felemészt, mint amennyivel én rendelkezem.
4. Közel érzem a gyermekemet magamhoz.
5. Örömmel tölt el, ha gyermekemmel lehetek.
6. Gyermekem fontos szeretetforrás a számomra.
7. Életem legfőbb stresszforrása a gyermekem.
8. Mivel gyermekem van, kevés szabadidőm van, és nem tudok rugalmas lenni.
9. Az, hogy gyermekem van, anyagi megterhelés.
10. A gyermekem miatt nehéz a különböző feladataim között egyensúlyozni.
11. Nyomaszt a felelősség, hogy szülő vagyok.
12. A gyermekáldás azzal járt, hogy kevés választási lehetőségem maradt, és könnyen kicsúszik a kezemből az irányítás az életem felett.
13. Nagy örömet lelek a gyermekemben.

Szülői stressz skála tételei: 3., 7., 8., 9., 10., 11., 12.

Szülői elégedettség skála tételei: 1., 2., 4., 5., 6., 13.

Pontozás: A szülői stressz és a szülői elégedettség skálák pontszámai az adott faktorhoz tartozó tételek pontszámainak összeadásával számíthatók; a magasabb pontszám magasabb szintű szülői stresszt, illetve szülői elégedettséget jelez.