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RESEARCH PAPER

Parental Burnout in Hungary: Development and Psychometric Evaluation of the Hungarian Parental Burnout Assessment (PBA-HUN)

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Introduction: Parental burnout might take place when excessive demands overwhelm the parents' resources.
Aims: To develop and validate the Hungarian version of the Parental Burnout Assessment (PBA-HUN), an instrument designed to measure parental burnout; and to determine the prevalence of parental burnout in Hungary.
Methods: Data were collected via an online survey from parents with at least one child living in the household (N = 1215; 82.6% mothers; M_{age} = 38.68 years; SD_{age} = 6.27 years). Confirmatory factor analysis was used to investigate the factor structure of the PBA-HUN.
Results: The four-factor structure of the original PBA was replicated, confirming the following factors: exhaustion in one's parental role, contrast with one's parental role, feelings of being fed up, and emotional distancing from one's children. A second-order model with a higher-order factor representing overall parental burnout also fit the data well. The internal consistency of both the subscale and total scores was excellent ($\alpha \geq 0.84$). Parental burnout had a moderately strong negative correlation with life satisfaction, and weak or moderate positive correlations with perceived stress, depression, vital exhaustion, and COVID-specific perceived stress supporting the construct validity of the PBA-HUN. The prevalence of parental burnout stood at 5.8% in this sample. The weak relationship between PBA-HUN scores and sociodemographic factors was also similar to those found in prior studies. Parental burnout correlated negatively with the number of hours spent sleeping and engaging in spare time activity, respectively.
Conclusions: The PBA-HUN is a reliable and valid tool to assess parental burnout in Hungary.

Keywords: parental burnout, psychometric properties, reliability, validity, COVID-19

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Introduction

One's experience of parenthood results from the costs and benefits of parenting across one's lifetime. While in an optimal case, parenthood is rewarding and contributes to parents' well-being (Nomaguchi & Milkie, 2003; Umberson et al., 2010), this sensitive balance of costs and benefits depends on many factors, including – among others – parents' psychological characteristics, stress-management abilities, child-rearing practices, the support from the co-parent and family, etc. (Mikolajczak et al., 2021). In line with these assumptions, parental burnout emerges when stress-enhancing factors overweigh the parents' resources. Demands and risk factors like perfectionism, overwhelming parental duties, low emotional intelligence, and lack of external or family support, will elevate parental stress. On the other side of the balance, resources and protective factors, such as good child care routines, positive co-parenting, and spare time activities decrease parental stress (Mikolajczak & Roskam, 2018). Accordingly, parental burnout is a possible consequence of excessive parental demands or lack of resources, an experience of overwhelming exhaustion regarding their parental role, emotional detachment from their children, and feelings of doubt regarding the ability to be a good parent. (Mikolajczak et al., 2019).

Pelsma et al. (1989) made one of the first efforts in the conceptualisation and measurement of parental burnout. These authors assessed burnout among non-working mothers of young children by the Maslach Burnout Inventory (MBI, Maslach & Johnson, 1981), which is the most widely used instrument to measure burnout on three dimensions: emotional exhaustion, depersonalisation, and decrease in personal accomplishment. Concluding that parental burnout shares similarities with job burnout regarding the emotional exhaustion and personal accomplishment dimension, Pelsma et al. (1989) also determined that depersonalisation was not confirmed in the sample of mothers. While a few studies had been conducted with parents having children and suffering from chronic diseases (e.g., Norberg, 2007; Lindström et al., 2011; Beheshtipour et al., 2016), two decades passed before the concept of parental burnout attracted broad and significant research interest. Roskam et al. (2017) were the first to develop a measure to examine parental burnout as a distinct construct. The resulting Parental Burnout Inventory (PBI) is based on the items of the MBI modified to reflect the specific context of parenting. Depersonalisation, in this measurement approach, was replaced by the theoretically more plausible emotional distancing dimension. Results supported the validity of the tri-dimensional scale.

Later, parental burnout conceptualisation and measurement proceeded with the development of the Parental Burnout Assessment (PBA), which was based on the testimonies of burnt-out parents. Through factor analysis, the authors reduced the number of items to 23 and revealed four dimensions: exhaustion in one's parental role, feelings of being fed up, emotional distancing from one's child, and a fourth, inherent dimension that contrasts with one's previous parental self. Good validity and reliability of the PBA (Roskam et al., 2018) as well as its measurement invariance across gender and languages were confirmed (Roskam et al., 2021).

Although the PBA and the PBI proved to be congruent instruments, the first remains preferable for several reasons. First, the "contrast to parental self" is a unique and important dimension not covered by the PBI. Second, all PBA items directly address different aspects of parental burnout, while the dimension "loss of accomplishment" from the PBI is addressed indirectly by means of reversed items. Based on parents' testimonies, non-reversed items are preferable to measure parental burnout. Third, according to the parental burn-out reports, loss of fulfillment in the parental role seemed to be more important than the "loss of accomplishment" captured by the PBI. Finally, PBA is a freely available instrument for measuring parental burnout, while the PBI is copyrighted (Roskam et al., 2018).

In relation to the rapidly growing interest in parental burnout, an increasing number of studies have emerged in the field aiming to identify antecedents and risk factors such as perfectionism (Sorkkila & Aunola, 2020) or outcomes like escape ideation, parental neglect and parental violence (Mikolajczak et al., 2019), as well as possible interventions to help parents cope (Brianda et al., 2020). Furthermore, the International Investigation of Parental Burnout (IIPB) Consortium, with more than 40 members, facilitates and coordinates cross-border investigations in the field. The major aim of the IIPB is to study the "conceptual validity, prevalence, and intercultural variation of parental burnout" (https://www.burnoutparental.com/international-consortium). Recently, Hungary also became a member of the consortium, making it possible for the country to take part in this multinational scientific cooperation. Our paper presents the first steps towards this goal; that is, confirming the conceptualization of parental burnout and providing preliminary data on its prevalence in Hungary.

The current study

The current study's major aim was to investigate the psychometric properties of the Hungarian version of the PBA (PBA-HUN) by testing its reliability as well as its factor structure and validity. Previously, several studies

(Aunola et al., 2020; Arikan et al., 2020; Gannagé et al., 2020; Matias et al., 2020; Mousavi et al., 2020; Sodi et al., 2020; Stănculescu et al., 2020) confirmed either a four-factor, first-order model of the PBA or a second-order model, wherein global parental burnout emerged as a second-order latent factor in addition to the four domain-specific factors. We hypothesized that one of these two factor structures would be replicated in the Hungarian data. We also aimed to provide a preliminary prevalence rate of parental burnout in the Hungarian population.

Regarding construct validity, several hypotheses have been developed. We chose variables to test construct validity mainly based on previous studies. Below, we present these constructs together with the connected hypotheses. First, life satisfaction is a cognitive and global evaluation of one's quality of life as a whole, a comprehensive assessment of subjective well-being (Pavot & Diener, 2008). It was presumed that parental burnout would be negatively related to life satisfaction as has been shown in previous studies (Aktan et al., 2020; Stănculescu et al., 2020; Matias et al., 2020; Szczygieł et al., 2020). Second, perceived stress results as a consequence of an appraisal process, when situations in one's life are evaluated as stressful (Cohen et al., 1983). It was hypothesized that PBA scores would indicate a positive relationship with perceived stress based on previous findings (Lebert-Charron et al., 2018; Roskam et al., 2017). Third, vital exhaustion, originally identified as a psychological risk factor of coronary heart disease, was considered as a potential correlate of parental burnout. The construct consists of feelings involving excessive fatigue, increasing irritability, and feelings of demoralization (Frestad & Prescott, 2017). We presumed a positive relation between parental burnout and vital exhaustion because exhaustion in one's parental role is the predominant factor in PBA. Furthermore, vital exhaustion and burnout proved to be positively correlated previously (Bellingrath et al., 2008). Fourth, considering the findings of previous studies (e.g., Roskam et al., 2017; Kawamoto et al., 2018; Aunola et al., 2020), we assumed a positive relation between parental burnout and depression.

Investigating parental burnout stands especially relevant during the COVID-19 pandemic. The pandemic triggers several social disruptions in the family system, such as job loss, financial insecurity, social distancing, and confinement. These factors negatively affect caregivers' well-being by elevating distress, parenting stress, and mental health symptoms that have the potential to damage the child-parent relationship (Prime et al., 2020). We supposed that increased parental burnout also numbered among the COVID-19 pandemic's negative affective outcomes. As Mikolajczak and Roskam (2020) noted, parental burnout has received significantly increased attention since the pandemic's outbreak, which forced parents and children into confinement. Based on the assumptions above, we investigated the relation of perceived stress to parental burnout, assuming a positive correlation would exist between parental burnout and pandemic-related perceived stress. So far, very few studies have explored the relationship between the COVID-19 pandemic-induced negative affective reactions and parental burnout, but those did indicate that concerns about COVID-19 moderately-strongly predicted parental burnout (e.g., Prikhidko et al., 2020). Furthermore, Le Vigouroux et al. (2021) compared parental burnout before and during the lockdown, and found that parents reported slightly elevated saturation levels (feelings of being fed up) during the lockdown compared to those who were included into the study prior to the lockdown. This finding also supported our hypothesis regarding the positive association between parental burnout and pandemic-related stress.

An international investigation on parental burnout, involving 42 countries, has already addressed the worldwide comparison of parental burnout prevalence (Roskam et al., 2021). Since Hungary was not part of the consortium then, the present study also aimed to determine the Hungarian prevalence of parental burnout. Based on Roskam et al. (2017), we expected that this prevalence rate would fall between 2% and 12%. We also presumed that the prevalence rate would be relatively high, since individualistic cultures (like Hungary) displayed higher burnout prevalence rate in the international investigation (Roskam et al., 2021).

Finally, based on the extant literature (e.g., Arikan et al., 2020; Stănculescu et al., 2020), only a weak association was anticipated between parental burnout and sociodemographic variables. Mainly following the protocol of IIPB (Roskam et al., 2021), we examined the relationship between parental burnout and the following sociodemographic variables: gender; age; educational attainment; socioeconomic status; marital status; employment status; number of child(ren) in the household; total number of child(ren); age of the youngest child; age of the oldest child; number of the women in the same household caring for the child(ren); number of the men in the same household caring for the child(ren); having children with disabilities or learning/emotional/behavioral problems. As far as we know, we were the first who investigated important segments of daily activity besides the hours spent with child(ren): number of hours spent sleeping a day, and the number of hours spent with spare time activity.

Methods

Sample

Altogether, 1,215 parents (82.6% mothers) took part in the survey; their ages ranged from 18 to 69 years *(M* = 38.68 years, *SD* = 6.27 years). According to the inclusion criteria, participants had at least one child living in the same household. The most important sociodemographic characteristics of the sample are described in Table 1 and Table 2.

Table 1. Descriptive Statistics of the Categorical Variables

Variable	%	*n*
Gender		
Fathers	17.4	212
Mothers	82.6	1,003
Educational attainment		
Primary school	0.9	11
Vocational school	4.7	57
Secondary grammar school	17.7	215
Higher vocational school	7	85
College	29.3	356
University	37.6	457
PhD	2.8	34
Socioeconomic status		
Lowest	1.2	15
Lower-middle	21.7	264
Middle	61.5	747
Upper-middle	14.9	181
Upper class	0.7	8
Marital Status		
Married	76	924
Common-law marriage	14.9	181
Divorced	6.6	80
Single	2.1	26
Widowed	0.3	4
Employment status		
Having paid work	60.7	737
Maternity leave	31	383
Unemployed	3.1	38
Do not work for other reasons	4.7	57
Having child(ren) with disabilities		
Yes	12.3	150
No	87.7	1,065
Having child(ren) with learning/emotional/behavioral problems		
Yes	23.5	286
No	76.5	929

Procedure

The United Ethical Review Committee for Research in Psychology (Hungary) approved the protocol of the current study under #2021.02.

The Hungarian version of the PBA was developed through blind back-translation based on the French version. After a professional translation agency made an initial translation from French into Hungarian, an expert skilled in social sciences accomplished the back-translation (from Hungarian to French). The authors sent the back-translation for review to Professor Isabelle Roskam, one of the original PBA developers. During a consensus meeting, the first author and the expert who took part in the back-translation developed the final version of the Hungarian adaptation (see its text in the Appendix) also taking into account Dr. Roskam's feedback.

After the translation procedure, we developed a test battery containing questions on sociodemographic variables and the measures that will be introduced below. Data collection was conducted online using Google Forms through convenience sampling and the snowball method (respondents were asked to share the link of the survey with their acquaintances). The link to the survey was shared with the permission of the administrators in various social media groups that targeted parents. In the absence of formal grant support to allow the recruitment of a representative sample, the above-described sampling method provided the most economical strategy to reach a large enough sample to allow the validation process.

Both social media posts and the introduction part of the online questionnaire informed participants that the study addressed challenges in parents' life including parental burnout. Before starting to complete the survey, participants expressed their informed consent with a click confirming their awareness that the survey remained voluntary and anonymous, that they could withdraw at any time without justifying their decision, and that their individual data would be kept confidential.

Measures

Sociodemographic questions

Participants were asked about their gender, age, educational attainment, marital status, socioeconomic status, current employment status (later recoded as doing paid work outside of the home versus not doing so), total number of children, number of children in the same household, child(ren) with disabilities (yes/no), child(ren)

with learning/emotional/behavioral problems (yes/no), number of men and women living in the same household and taking care of the children on a daily basis. Finally, we also measured the time parents spent with certain activities: the number of hours on a typical day spent with children, spare time activities, and sleep.

Table 2. Descriptive Statistics of Continuous Variables

Variable	*Mean*	*Standard deviation*
Age (year)	38.68	6.27
Number of child(ren) in the household	2.05	0.97
Total number of child(ren)	2.17	1.14
Age of the youngest child in the household or in general? (year)	5.25	4.87
Age of the oldest child in the household or in general? (year)	9.22	6.39
Number of women in the same household caring for the child(ren)	0.94	0.40
Number of men in the same household caring for the child(ren)	0.90	3.60

Parental burnout

The authors measured parental burnout with the Hungarian version of the PBA (Roskam et al., 2018). The PBA consists of 23 items and contains four subscales: exhaustion in one's parental roles (nine items, e.g., "I have zero energy for looking after my child(ren)", contrast in parental self (six items, e.g., "I tell myself that I'm no longer the parent I used to be"), feelings of being fed up (five items, e.g., "I can't take being a parent any more"), and emotional distancing (three items, e.g., "I'm no longer able to show my child(ren) how much I love them"). All items were answered on a 7-point Likert scale (0 = Never, 6 = Daily).

Life satisfaction

Subjective well-being was measured via the Satisfaction with Life Scale (Diener et al., 1985; Hungarian version: Martos et al., 2014). The five items (e.g., "I am satisfied with my life") were rated on a 7-point Likert scale (1 = Strongly disagree, 7 = Strongly agree). Internal consistency was excellent in the present sample (Cronbach's alpha = .88).

Perceived stress

We used the Perceived Stress Scale (Cohen et al., 1983; Hungarian version: Stauder & Konkolÿ Thege, 2006) to assess the perceived level of stress in the previous month. The four-item version used in the present study showed a very strong relationship with scores to the full, 14-item version (r = .93, p < .001; Stauder & Konkolÿ Thege, 2006). Items (e.g., "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?") were rated on a 5-point Likert scale (0 = Never, 4 = Very Often). Internal consistency was excellent in the present sample (Cronbach's alpha = .83).

Vital exhaustion

Fatigue was measured with a shortened version of the Maastricht Vital Exhaustion Questionnaire (Appels & Mulder, 1988; Hungarian version: Kopp et al., 1998). This scale contains five items (e.g. "Do you sometimes feel your body is like a battery running out?"), which can be answered on a 3-point scale (No = 0 point, Not sure = 1 point, Yes = 2 points). Internal consistency was excellent in the present sample (Cronbach's alpha = .83).

Depression

A shortened version of the Beck Depression Inventory (Beck et al., 1961; Hungarian version: Kopp et al., 1995; Rózsa et al., 2001) was used to measure symptoms of depression, such as pessimism, lack of satisfaction, guilty feelings, social withdrawal, indecisiveness, work inhibition, sleep disturbance, fatigability and somatic preoccupation. This scale consists of nine items (e.g., "I feel guilty all of the time"), which can be answered on a 4-point scale (1 = Completely disagree, 4 = Completely agree). Internal consistency was excellent in the present sample (Cronbach's alpha = .84).

COVID-19 pandemic-related perceived stress

On the basis of Pedrozo-Pupo et al. (2020), a modified version of the 10-item Perceived Stress Scale was developed, adding terms referring to the "pandemic" to the original items (e.g., "In the last month, how often have you

felt that you were unable to control the important things in your life *due to the pandemic*?") (Hamvai et al., 2021). The scale aims to measure perceived stress associated with the COVID-19 pandemic. Questions were answered on a 5-point Likert scale (0 = Never, 4 = Very often). The internal consistency was excellent in the present sample (Cronbach's alpha = .88).

Statistical analysis

Confirmatory factor analysis (CFA) was used to test which theoretical model fits the data best regarding the factor structure of the PBA-HUN. First, we examined a unidimensional model wherein all 23 items were loaded on a single factor (M1). Second, a first-order model was tested (M2) that included four correlated latent factors (Roskam et al., 2018): emotional exhaustion in one's parental role (nine items), contrast in one's parental self (six items), feelings of being fed up (five items) and emotional distancing from one's children (three items). Based on previous psychometric studies on the PBA (Aunola et al., 2020; Arikan et al., 2020; Gannagé et al., 2020; Matias et al., 2020; Mousavi et al., 2020; Sodi et al., 2020; Stănculescu et al., 2020), we also tested an alternative, second-order model (M3), which included a global parental burnout dimension beyond the four first-order factors.

The confirmatory factor analyses were carried out with the lavaan package (Rosseel, 2012) of the R statistical software. We used the diagonally weighted least squares estimator as this is the recommended method in the case of ordinal, Likert-type indicators (Forero et al., 2009; Mîndrilă, 2010; Li, 2016). The model-fit was assessed by the Tucker-Lewis Index (TLI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR). The following cut-off criteria of an acceptable model fit were used: CFI and TLI 0.90 or above, RMSEA 0.6 or below and SRMR 0.8 or below. These values were recommended by Hu and Bentler (1999), who developed these cut-off values by calculating rejection rates of structural equation modeling for different kinds of true-population and misspecified models.

To examine reliability, Cronbach's alpha was calculated for the PBA-HUN and its subscales. Spearman correlations were conducted to test relationships between the PBA-HUN total score, its subscales and continuous/ordinal variables (educational attainment, socioeconomic status, number of children, age of youngest/oldest child, number of adults taking care of the children in the household, number of hours spent with children/spare time activity/sleep, life satisfaction, depression, perceived stress, vital exhaustion, and COVID-19 pandemic-related perceived stress). We used the Mann-Whitney test and Kurskal-Wallis test to examine possible mean rank differences of PBA-HUN scores across categorical variables (gender, marital status, employment status, child(ren) with disabilities, and child(ren) with learning/emotional/behavioral problems). These analyses were carried out using the IBM SPSS Statistics, Version 25.

Results

Factorial validity of PBA-HUN

Confirmatory factor analysis replicated the one factor-, first-order- and second-order model of parental burnout. For M1, Satorra-Bentler χ^2 (230) = 446.58 was significant at $p < .001$, which might indicate a discrepancy between the hypothesized model and the data, though a significant χ^2 test is not uncommon for large sample sizes like the present one. Further fit indices (TLI = 0.995, CFI = 0.996, RMSEA = 0.028, SRMR = 0.056) showed a good model fit for the single factor model of the PBA.

For M2, the confirmatory factor analysis revealed statistically significant and strong (all above 0.61) factor loadings for each item ($p < .001$, Table 3). The Satorra-Bentler χ^2 (224) = 307.24 was significant at $p < .001$, and the other fit measures (TLI = 0.998, CFI = 0.998, RMSEA = 0.017, SRMR = 0.046) indicated a good model fit.

The results regarding M3 also showed significant factor loadings ($p < .001$), all above 0.63. With the exception of the Satorra-Bentler χ^2 [(226) = 330.394, $p < .001$], all fit indices (TLI = 0.998, CFI = 0.998, RMSEA = 0.02, SRMR = 0.047) indicated that the theorized second-order factor model fitted well with the data. Correlations for all of the four latent variables were significant (Table 3).

Reliability

The Cronbach's alpha coefficients indicated excellent internal consistency for all subscales and the total score;

Table 3. Standardized Factor Loadings From the Four-Factor CFA Model M3 and Reliability Coefficients as Well as Intercorrelations of the Four PBA Subscales

		EX	CO	FU	ED
EX1	I feel completely run down by my role as a parent.	0.63			
EX2	I have the sense that I'm really worn out as a parent.	0.83			
EX3	I'm so tired out by my role as a parent that sleeping doesn't seem like enough.	0.77			
EX4	When I get up in the morning and have to face another day with my child(ren), I feel exhausted before I've even started.	0.77			
EX5	I find it exhausting just thinking of everything I have to do for my child(ren).	0.86			
EX6	I have zero energy for looking after my child(ren).	0.84			
EX7	My role as a parent uses up all my resources.	0.77			
EX8	I have the impression that I'm looking after my child(ren) on autopilot.	0.82			
EX9	I'm in survival mode in my role as a parent.	0.82			
CO1	I don't think I'm the good father/mother that I used to be to my child(ren).		0.68		
CO2	I tell myself that I'm no longer the parent I used to be.		0.81		
CO3	I'm ashamed of the parent that I've become.		0.81		
CO4	I'm no longer proud of myself as a parent.		0.85		
CO5	I have the impression that I'm not myself any more when I'm interacting with my child(ren).		0.83		
CO6	I feel as though I've lost my direction as a dad/mum.		0.87		
FU1	I can't stand my role as father/mother any more.			0.87	
FU2	I can't take being a parent any more.			0.88	
FU3	I feel like I can't take any more as a parent.			0.80	
FU4	I feel like I can't cope as a parent.			0.88	
FU5	I don't enjoy being with my child(ren).			0.79	
ED1	I do what I'm supposed to do for my child(ren), but nothing more.				0.75
ED2	Outside the usual routines (lifts in the car, bedtime, meals), I'm no longer able to make an effort for my child(ren).				0.80
ED3	I'm no longer able to show my child(ren) how much I love them.				0.83
Cronbach's α		0.93	0.92	0.92	0.84
Higher order factor of parental burnout		0.96	0.91	0.99	0.85
EX			0.87	0.97	0.80
CO				0.89	0.84
FU					0.82

Notes: All reported correlations are statistically significant at .001 level, EX, Exhaustion in parental role; CO, Contrast in parental self; FU, Feelings of being fed up; ED, Emotional Distancing.

more specifically, exhaustion in one's parental role: α = .93, contrast in personal self: α = .92, feelings of being fed up: α = .92, emotional distancing: α = .84, and for the total score: α = .97.

Construct validity

Table 4 presents the correlation coefficients between the PBA scores and the other study variables. The four subscales and the PBA total score showed significantly weak or moderately strong negative correlations with life satisfaction, significantly moderate to strong positive correlations with perceived stress, significantly moderate to strong positive correlations with depression, moderate to strong positive correlations with vital exhaustion, significant and weak to moderately strong positive correlations with COVID-19 related perceived stress.

Table 4. Spearman's Rho Coefficients Between the PBA Scores and the Ordinal/Continuous Study Variables

	EX	CO	FU	ED	Parental Burnout
Age	–0.17**	–0.04	–0.10**	0,06*	–0.12**
Number of children at the same household	0.06*	0.11**	0.06*	0.10**	0.07**
Total number of children	0.01	0.09**	0.02	0.08**	0.03
Age of youngest child	–0.19**	–0.04	–0.12**	0.04	–0.13**
Age of oldest child	–0.18**	–0.04	–0.12**	0.05	–0.12**
Number of women taking care of children	–0.01	0.01	–0.03	0.01	–0.01
Number of men taking care of children	–0.06	–0.07*	–0.04	–0.04	–0.06*
Number of hours spent with child(ren) a day	0.23**	0.13**	0.17**	–0.05	0.18**
Number of hours spent with spare time activity a day	–0.28**	–0.19**	–0.20**	–0.11**	–0.24**
Number of hours spent sleeping a day	–0.15**	–0.11**	–0.06*	0.03	–0.11**
Educational attainment	0.15**	0.10**	0.14**	0.18**	0.15**
Socioeconomic status	–0.03	–0.07*	–0.01	0.02	–0.03
Life satisfaction	–0.36**	–0.42**	–0.33**	–0.27**	–0.39**
Perceived stress	0.59**	0.60**	0.54**	0.41**	0.62**
Depression	0.63**	0.64**	0.56**	0.50**	0.67**
Vital exhaustion	0.64**	0.57**	0.54**	0.35**	0.64**
COVID-19 pandemic related perceived stress	0.36**	0.37**	0.30**	0.22**	0.37**

Notes: *$p < .05$ **$p < .01$ EX, Exhaustion in parental role; CO, Contrast in parental self; FU, Feelings of being fed up; ED, Emotional Distancing.

Relationships with the sociodemographic variables

Overall, we observed weak to moderately strong associations between parental burnout and most of the ordinal-level sociodemographic variables, the strongest one appearing with number of hours with spare time activity, and the weakest with the number of children in the same household. No significant association was observed between indicators of parental burnout and the number of women taking care of the children in the household (Table 4).

Table 5 presents the findings concerning the relationship of parental burnout with the categorical sociodemographic variables. Mothers showed significantly higher levels of global parental burnout. Parents who were not working outside the home, as well as parents who had children with disabilities or learning/emotional/behavioral problems, reported significantly higher levels of global parental burnout. Marital status had a significant relationship with emotional distancing and according to the post-hoc tests, divorced parents experienced significantly higher emotional distancing than those who lived in civil partnerships (test statistics = -163.41; $p < .05$); all effect sizes were trivial, though.

Prevalence of parental burnout in Hungary

Respondents were considered as a high risk for parental burnout if they scored 92 or higher on the PBA, which is the mean score of a parent who experiences every symptom at least once a week (Szczygieł et al., 2020; Sarrionandia & Aliri, 2021). Using this cut-off, the prevalence rate of burnout stood at 5.8% in the total sample; 2.4% for fathers and 6.6% for mothers.

Discussion

The the current study aimed to 1) present the development and investigate the psychometric properties of the Hungarian version of the PBA (PBA-HUN), 2) investigate the relation of parental burnout and COVID-19 related perceived stress 3) determine the prevalence of parental burnout on the Hungarian sample and 4) examine the relationship between PBA-HUN and sociodemographic variables.

Table 5. Mean Ranks of PBA Scores Across Categorical Sociodemographic Variables

	Gender		Working at the moment?		Children with disabilities		Children with learning/		Parental Burnout				
	Fathers *N* =212	Mothers *N*=1003	Yes *N*=737	No *N*=478	Yes *N*=150	No *N*=1065	Yes *N*=286	No *N*=929	Married *N*=924	Common law *N*=181	Divorced *N*=80	Single *N*=26	Widow(er) *N*=4
EX	472.20	636.70	559.79	682.33	731.95	590.54	741.44	566.92	609.76	581.32	650.43	603.12	592.63
Statistics	*U*=77529*** η^2=0.03		*U*=140614.5*** η^2=0.03		*U*=61282.5** η^2=0.01		*U*=94682*** η^2=0.05		$\chi^2(4)$=2.25 η^2=0.001				
CO	463.28	638.59	575.30	658.42	698.73	595.22	737.15	568.24	602.17	601.11	687.58	636.67	488.25
Statistics	*U*=75637.5*** η^2=0.03		*U*=152044.5*** η^2=0.01		*U*=66266** η^2=0.01		*U*=95909.5*** η^2=0.04		$\chi^2(4)$=5.11 η^2=0.001				
FU	502.20	630.36	575.80	657.65	693.59	595.95	737.90	568.01	611.00	584.99	662.45	522.42	424.13
Statistics	*U*=83888.5*** η^2=0.01		*U*=152409*** η^2=0.01		*U*=67037** η^2=0.01		*U*=95695.5*** η^2=0.04		$\chi^2(4)$=5.48 η^2=0.001				
ED	612.23	607.11	620.77	588.32	689.23	596.56	714.01	575.36	613.10	550.17	713.58	514.79	540.50
Statistics	*U*=105421 η^2=0.00		*U*=166735 η^2=0.002		*U*=67691** η^2=0.01		*U*=102527*** η^2=0.03		$\chi^2(4)$=15.04** η^2=0.01				
Parental burnout	480.48	634.95	570.27	666.18	725.66	591.43	750.62	564.09	608.41	580.40	674.61	593.90	521.75
Statistics	*U*=79283.5*** η^2=0.03		*U*=148333*** η^2=0.02		*U*=62225,5** η^2=0.02		*U*=92058*** η^2=0.05		$\chi^2(4)$=4.29 η^2<0.01				

Notes: *p < .05 **p < .01 EX, Exhaustion in parental role; CO, Contrast in parental self; FU, Feelings of being fed up; ED, Emotional Distancing.

Our results replicated both the first- and second-order structure of the instrument originally described by Roskam et al. (2018) and confirmed by other studies (Furutani et al., 2020; Aunola et al., 2020; Arikan et al., 2020; Gannagé et al., 2020; Matias et al., 2020; Mousavi et al., 2020; Sodi et al., 2020; Stănculescu et al., 2020). Accordingly, it can be concluded that the PBA-HUN consists of the same four dimensions as the original version of the scale: exhaustion in one's parental role, contrast with one's previous parental self, feelings of being fed up with one's parental role and emotional distancing from one's children. We can also conclude that, as a global parental burnout factor emerged in the second-order model as well, these data support the interpretation of the total score in addition to the subscale scores. These findings support the basic theoretical ideas: that is, parental burnout can be considered as a multifaceted, yet global construct. The data also indicate that the PBA-HUN had excellent internal consistency both in terms of the subscale and total scores. The correlations with other variables in the hypothesized directions also provided support for the convergent validity of the PBA-HUN: scores correlated negatively with life satisfaction and positively with perceived stress, depression, and vital exhaustion.

The present study stands among the very few that explicitly investigated the relationship between a COVID-19-related psychological factor and parental burnout. In line with our hypothesis, a positive association existed between parental burnout and COVID-19-related perceived stress. This is consistent with another study in which COVID-19-related anxiety was found to be a moderately strong predictor of parental burnout in Iran (Prikhidko et al., 2020). Interestingly though, the present findings are in contradiction with those of Mousavi (2020), who found that home quarantine did not have a significant effect on parental burnout. The author explained these findings by pointing out the buffer effect of the generally strong and extended support system available within families in Iran, which might be missing in Western cultures with more atomised family structures.

The current study also made an attempt to provide a preliminary prevalence rate of parental burnout in the Hungarian population. These data showed that the prevalence of parental burnout was 5.8% in the total sample, while it came to 2.4% among fathers and 6.6% among mothers. These results fit into the landscape of estimates proposed by Roskam et al. (2017), according to which the proportion of burnt-out parents ranges between 2% and 12% depending on the country and subpopulation. Taking into consideration that Hungary scored highly (with a rating of 80) on Hofstede's individualism dimension (Falkáné Bánó, 2014), and individualism proved to be an important factor within the cultural background of parental burnout (Roskam et al., 2021), it is not surprising that the prevalence rate stands relatively high. It is valuable to compare our findings to the prevalence rate of two other countries in the Central-Eastern-European region: Poland and Romania. While Poland (with a rating of 60 on individualism) displayed a 7.7% prevalence rate, Romania (with a rating of 30 on individualism) demonstrated just 3.8% (Roskam et al., 2021).

Regarding sociodemographic characteristics – in line with previous findings (e.g., Arikan et al., 2020; Stănculescu et al., 2020) – weak associations were observed with trivial effect sizes. Further, parental burnout has a positive correlation with the number of children in the same household and the total number of children; both being factors that can increase the demands of parenting. This continues in line with previous findings (Roskam et al., 2018; Gannagé et al., 2020; Sodi et al., 2020; Szczygieł et al., 2020; Stănculescu et al., 2020; Mousavi et al., 2020). On the other hand, parental burnout was negatively correlated with the parent's age and the age of the youngest and oldest child. Similar corollaries were found in Romania (Stănculescu et al., 2020) and Poland (Szczygieł et al., 2020).

To our best knowledge, we were the first who examined other segments of parents' daily schedules besides hours spent by caring for children, that is: hours spent with spare time activity and sleep. The fact that parental burnout positively correlates with the number of hours spent with children (see also Szczygieł et al., 2020; Stănculescu et al., 2020; Gannagé et al., 2020) and negatively correlates with the number of hours spent on spare time activities and the number of hours spent sleeping, highlighted the importance of "me time". Future studies should address factors that hinder parents finding their "me time" and methods that help them find some time they devote to themselves. The negative correlation between sleeping and parental burnout also fits indirectly into a previous finding; that is, sleep disruption negatively correlates with parental burnout (Aunola et al., 2020).

Overall, mothers showed a significantly higher parental burnout than fathers, which is in line with previous results (Stănculescu et al., 2020; Szczygieł et al., 2020; Gannagé et al., 2020; Furutani et al., 2020; Sarrionandia & Aliri, 2021). Hungary remains a typical post-socialist society wherein household chores were delegated to women before the democratic transition (Dupcsik & Tóth, 2014). During the post-socialist era, this deep-rooted notion has not changed significantly: household activities, including child rearing and parenthood, are

still perceived as mainly a mother's responsibility, even though recently, the notion of "intimate fatherhood" and "nurturing masculinity" has been more and more articulated (Takács, 2020). A future direction of research could involve investigating whether gender inequalities in household chores and child rearing are reflected in women's higher parental burnout.

Parents with paid work reported lower levels of burnout. This finding replicates data from many previous studies (Stănculescu et al., 2020; Szczygieł et al., 2020; Mousavi et al., 2020; Arikan et al. 2020). As Mousavi et al. (2020) concluded, working outside the household provides some "breath of relief", a kind of release from the ties of parenthood. On the other hand, financial security stemming from a job also might result in reduced parental burnout.

Parents who rear children with special needs bear extra burdens in parenthood. Thus, it is not surprising that Hungarian parents who had such extra responsibilities showed higher levels of parental burnout, which stands consistent with the findings of a related Polish study (Szczygieł et al., 2020).

Regarding marital status, parental burnout was only significantly different across common-law and divorced parents, with divorced parents showing the highest parental burnout. The additional challenges that a breakup/separation often causes in parents' lives might explain this effect. We can also assume that many divorced mothers might remain alone in child rearing.

Strenghts and Limitations

Developing a Hungarian version of the PBA is beneficial from numerous perspectives. First, Hungary can now take part in an emerging field of scientific investigation with a focus on a current and highly relevant subject: parental burnout. In addition, PBA can also be recommended as a diagnostic tool for various practitioners including education counseling services, family support services, and health visitors.

The current study includes some limitations. It is based on a non-representative sample; for instance, mothers, parents with university degrees and those from the middle class were over-represented. Being an online survey, our study might also have filtered out potential respondents who were not regular internet and social media users or did not have internet access. Furthermore, in order to avoid missing values, we required a response on each scale item. This might have forced some respondents to give incorrect answers when they were unable to skip the question. Regarding the examination of construct validity, we mainly used variables that represented risk factors for parental burnout; protective factors were less robustly represented in the present study. Finally, mentioning parental burnout in the introduction of the online survey might have biased the sample towards those who are more concerned with this topic. Consequently, the measured prevalence rate might be higher than the actual one.

Conclusions, Implications and Future Directions

Overall, our results support the notion that the Hungarian version of the PBA serves as an appropriate instrument to measure parental burnout and correctly represents the dimensions of the original scale. Therefore, we encourage researchers to use it in future studies aiming to better understand and manage parental burnout. We also demonstrated that the prevalence of parental burnout varies dramatically not only worldwide, but within European regions as well. Besides the Polish and Romanian findings, our results also gave a better insight about parental burnout in the Eastern and Central European region. While the prevalence rate is different in the three countries, we replicated most of the previous findings on the relationship of parental burnout and sociodemographic variables.

We also would like to make some recommendations for future studies here. First, we did not investigate criterion validity of the PBA-HUN; and so future investigations could aim to explore its relationship with possible outcomes like parents' negligent or violent behavior towards their children. Second, Hungarian validation of further instruments measuring parental burnout [e.g., Brief Parental Burnout Scale (Aunola et al., 2021) and Balance between Risks and Resources Instrument (Mikolajczak & Roskam, 2018)] would be beneficial. Third, future studies could focus on the segments of society that were underrepresented in our sample such asparents with lower educational attainment or fathers. Regarding the latter group, investigation of parental burnout among "weekend fathers" as well as fathers who raise their children alone would be especially important.

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Author contributions
Csaba Hamvai: conceptualization, design, methodology, investigation, project administration, data management, formal analysis, interpretation, writing original draft, writing review and editing.
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Barna Konkolÿ Thege: design, methodology, interpretation, writing review and editing.
All authors gave final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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The authors have no conflicts of interest to disclose.

Ethical statement
This manuscript is the authors' original work.
The study was reviewed and approved by The United Ethical Review Committee for Research in Psychology, Hungary, license number: #2021.02.
All participants participated in the research voluntarily and anonymously, and provided their written informed consent to participate in this study.
Data are stored in coded materials and databases without personal data, and the authors have policies in place to manage and keep data secure.

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Appendix

Full text of the Hungarian Parental Burnout Assessment (PBA-HUN)

A gyermekek a beteljesedés és az öröm fontos forrásai szüleik számára. Ugyanakkor néhány szülőnek a kimerültség forrásai is lehetnek. (Ez nem ellentmondásos: az önmegvalósítás és a kimerültség megférhet egymás mellett, ugyanis lehetséges, hogy Ön imádja a gyermekeit, mégis kimerültnek érzi magát a szülői szerepben). Az alábbi kérdőív a szülőként tapasztalt kimerültséggel foglalkozik. Válassza az Ön személyes érzéseit legjobban tükröző választ! Nincsen jó vagy rossz válasz. Ha sosem érezte magát így, válassza a „Soha" válaszlehetőséget! Ha volt már ilyen érzése, jelölje, milyen gyakran érzi így magát a „Néhányszor egy évben" válaszlehetőségtől a „Minden nap" válaszlehetőségig, attól függően, melyik írja le legjobban az érzés előfordulásának gyakoriságát.

0=soha 1=Néhányszor egy évben 2=Egyszer egy hónapban, vagy kevesebbszer 3=Néhányszor egy hónapban 4=Egyszer egy héten 5=néhányszor egy héten 6=Minden nap

1. Olyannyira kifáraszt a szülői szerep, hogy már nem is tudom alvással kipihenni.
2. Úgy érzem, hogy nem tudok többé anyaként/apaként tekinteni magamra.
3. Úgy érzem, hogy, szülőként minden erőm elfogyott.
4. Semmi energiám sincs arra, hogy a gyereke(i)mmel törődjek.
5. Azt hiszem, már nem vagyok olyan jó anyja / apja a gyereke(i)mnek, mint voltam.
6. Szülőként már nem bírom tovább.
7. Szülőként úgy érzem, hogy ez nekem túl sok, „telítődtem".
8. Az a benyomásom, hogy automata üzemmódban foglalkozom a gyereke(i)mmel.
9. Úgy érzem, hogy nem bírom tovább szülőként.
10. Amikor reggel felkelek, és azzal szembesülök, hogy egy újabb napot kell eltöltenem a gyereke(i)mmel, már előre kimerültnek érzem magam.
11. Nem jelent örömet együtt lenni a gyerekeimmel.
12. Úgy érzem, hogy telítődtem a szülő szereppel.
13. Azt mondom magamnak, hogy már nem vagyok az a szülő, aki régen voltam.
14. Éppen csak annyit csinálok meg a gyerek(ek)ért, amennyit muszáj, de semmi többet.
15. A szülői szerepem minden energiámat felemészti.
16. Nem vagyok képes elviselni tovább az apai/anyai szerepet.
17. Szégyellem, hogy milyen szülő lett belőlem.
18. Szülőként már nem vagyok büszke magamra.
19. Az a benyomásom, már nem vagyok önmagam, amikor a gyereke(i)mmel vagyok együtt.
20. Már nem vagyok képes kimutatni a gyereke(i)mnek, mennyire szeretem őket.
21. Már az kimerít, ha csak arra gondolok, hogy milyen sok teendőm van a gyereke(i)mmel.
22. Az a benyomásom, hogy a rutint leszámítva (utazás, fektetés, etetés) más módon már nem tudok törődni a gyermeke(i)mmel.
23. A túlélésre játszom, mint szülő.

Szülői szerepben való kimerülés (exhaustion in one's parental role) tételei: 1; 3; 4; 8; 9; 10; 15; 21; 23
Szülői szereppel való meghasonulás (contrast with one's parental role) tételei: 2; 5; 13; 17; 18; 19;
Telítődés (feelings of being fed up) tételei: 6; 7; 11; 12; 16
Gyerek(ek)től való érzelmi eltávolodás (emotional distancing from one's children): 14; 20; 22