ANNALS OF PSYCHOLOGY/ROCZNIKI PSYCHOLOGICZNE
2023, XXVI, 1, 23–46
DOI: https://doi.org/10.18290/rpsych2023.0002

PSYCHOMETRIC PROPERTIES OF THE POLISH VERSION OF THE PARENTAL STRESS SCALE

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The article describes the procedure of adaptation and psychometric parameters of the Polish version of the Parental Stress Scale (PSS). The PSS sees parenting as a source of both strength and stress. Therefore, assessing parenting experiences with the PSS enables one to measure both the level of parenting stress and parental satisfaction. The PSS has been shown to be reliable and moderately correlated with standardized measures in expected directions, suggesting its validity (Berry & Jones, 1995). In this research, we investigated parenting stress in a non-clinical, population-based sample of parents and examined the psychometric properties of the Polish version of the PSS. We analysed reliability, as well as factorial and convergent validity. Two online studies were conducted. In Study 1, parents (126 mothers and 124 fathers) were sent a survey link and requested to fill in the PSS, the Perceived Stress Scale, the Parenting Stress Index, the SF-36v2 Health Survey, and the Family Resilience Assessment Scale. Study 2 was conducted to check the PSS structure once again and assess its reliability. Parents (111 mothers and 41 fathers) filled out the Polish 16-item version of the PSS (PSS-PL). The PSS-PL demonstrated adequate convergent validity with expected correlations with parenting stress, perceived stress, quality of life, and family resilience. Our results suggest that the PSS-PL is a reliable and valid measurement tool to evaluate the level of parental stress in Polish parents. Implications of the findings and study limitations are discussed.

Keywords: parents; parental stress; parental satisfaction; Parental Stress Scale.

Joanna Matuszczak-Świgoń, https://orcid.org/0000-0001-5188-3040; Lucyna Bakiera, https://orcid.org/0000-0003-4559-0430. Collecting data for this study has been financially supported by the Faculty of Psychology and Cognitive Science at Adam Mickiewicz University Poznań. The data supporting the findings are available upon request to the authors. The data are not publicly available due to privacy or ethical restrictions.

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Handling editor: Monika Wróbel, University of Lodz. Received 23 Jan. 2022. Received in revised form 10 Aug. 2022, 29 Nov. 2022. Accepted 29 Nov. 2022. Published online 10 Feb. 2023.

The Parental Stress Scale (PSS) is a popular tool for measuring the severity of difficulties in fulfilling a parental role. Parenting experience is multidimensional as it embodies various perspectives as a parent and a child, and all relationships relating to and involving the child. It is a three-dimensional system relating to the child, the activity (or its lack) of the other parent, and the personal experiences of the mother or the father, each having a personal system of meanings, needs, and possibilities (Bakiera, 2017). Every mother, as a woman, and every father, as a man, has separate desires, regardless of the aspirations of the other parent and the child. The overlapping of these three plans means that the potential and aspirations of each person are confronted in the activity of parents, which creates a risk of internal tensions and external conflicts. Parenting experiences are all the more complicated when they are accompanied by other demanding events, which could be a source of distress. There is an elevated risk of parental stress for families experiencing poverty, health problems, especially long-term illness (Matuszczak-Świgoń & Bakiera, 2021), or different unforeseen events, e.g., the COVID-19 lockdown (Sahithya et al., 2020). Also, parents of children with physical or mental health problems are at a higher risk of experiencing parental stress (Rayce et al., 2020). Lower emotional well-being in parents is associated with the stress of parenting.

Parental Stress

Parental stress can be defined as a disproportion between the demands of the parental role and the parent's ability to cope with them. The imbalance between parental tasks and the possibility of their realization is associated with a burden on the mental system, disorganization and internal tension, as well as the assessment of the situation as burdensome, exceeding one's possibilities and threatening well-being (Bakiera, 2020). Perception of parenthood as stressful carries the risk of employing maladaptive strategies to cope with parental demands. Maladaptation can take two forms: (1) despite the changed situation, the parent employs habitual ways of functioning that are not sufficient to fulfill the tasks of a parent; (2) despite efforts, the parent is unable to develop new strategies to overcome existing difficulties (Masten, 2014). Deater-Deckard (2004) defines parenting stress as "a set of processes that lead to aversive psychological and physiological reactions arising from attempts to adapt to the demands of parenthood" (p. 6). Abidin (1995) distinguished three types of factors determining parenting stress: (1) child characteristics (related to the child's temperament and parent-child interaction); (2) parental characteristics (mental state, sense of competence in a parental role, the parent's motivation to fulfill the role of parent); and (3) situational variables (the support provided by a spouse,

the availability of social support, the parent's physical health, restrictions following the parental role, the loss of important life roles).

Central to most definitions of parenting stress is the perceived disparity between the practical and emotional demands of the parenting role and the resources available to deal with them (Deater-Deckard & Scarr, 1996). When demands exceed the resources, parents typically experience high levels of stress. Parental stress is a normal consequence of parenting, but when parents experience chronic stress, they are at risk of parental burnout, a prolonged response to parental demands characterized by ineffectiveness, an overwhelming sense of exhaustion in the parenting role, and emotional distancing from their children (Mikołajczak & Roskam, 2018; Mikołajczak et al., 2019).

Research shows that parental stress is significantly related to the well-being and adjustment of both parents and children: it is related to adult functioning, the quality of parent–child relationships, and children's behaviour and development. Researchers examine various types of parental stress: (1) minor stress that is common among parents of typically developing children (e.g., daily parental hassles) (Crnic et al., 2005); (2) the overall level of parental stress in clinical and non-clinical samples (Shapiro & Stewart, 2011); (3) parental stress specific to raising children with behavioural problems, chronic illnesses or developmental disorders (Barroso et al., 2018; Neece & Chan, 2017). There are few studies on parental stress among parents with physical or mental illness. Parental stress is related to psychopathology (particularly maternal depression), self-efficacy in the parenting role, parental behaviour (i.e., sensitivity, engagement, and aggressiveness), as well as interactions with a co-parent and marital relationships (Crnic & Ross, 2017). A review of studies found an association between internalizing disorders in children and parental stress, and an even stronger association between externalizing disorders in children and parental stress (Barroso et al., 2018). Parents with high levels of parental stress tend to use more restrictive and ineffective parenting strategies (McQuillan & Bates, 2017), which can lead to an increase in behaviour problems, reciprocally intensifying parental stress (Shawler & Sullivan, 2017).

Most research on parental stress addresses mothers only, but a lot of families consist of a mother and a father. Some studies find differences in the levels of parenting stress between mothers and fathers. Mothers usually report higher parental stress than fathers (Hildingsson & Thomas, 2014; Pisula & Porębowicz-Dörsmann, 2017). Most research on parenting stress is conducted among parents, mainly mothers, of children with disabilities, illnesses, or children with behaviour problems (Asberg et al., 2008; Chiou & Hsieh, 2008; Cousino & Hazen, 2013; Hayes & Watson, 2013; Richman et al., 2009; Trumello et al., 2021).

The Parental Stress Scale

The Parental Stress Scale (PSS) is a brief and easy-to-administer self-report instrument, developed specifically to assess the level of parental stress in parents. The scale reflects a dichotomy related to experiencing parenting as a source of strength or stress. Therefore, it also encompasses the positive aspects of parenting. Positive aspects of parenting include emotional benefits (love, happiness, satisfaction, pleasure), feelings of enrichment, closeness, and personal growth. The negative elements relate to limitations, a sense of loss of control over one's life, and costs and demands on time, energy, and money. The theoretical foundation of this tool is Hobfoll's (1989) conservation of the resource model. Parental stress can be a reaction to losses or a lack of expected rewards from raising children. The original scale consists of 18 items that describe the parent–child relationship and how the parent feels regarding their role as such. It includes four factors: parental rewards, parental satisfaction, parental lack of control, and parental stressors. Two important measuring manuals have included the PSS: the Handbook of Psychological Tests (Maltby et al., 2001) and the Handbook of Family Measurement Techniques (Touliatos et al., 2001). The scale is widely used and freely available from the authors (Louie et al., 2017).

Table 1

Factor Solutions for Parental Stress Scale Across Studies

Facts of publication	Number of factors	The method of factor analysis	Items excluded	Number of items
Berry and Jones (1995)	4	Principal axis factor analysis (Varimax rotation)		18
Cheung (2000) Chinese adaptation	2	Principal axis factor analysis (Varimax rotation)	2	17
Oronoz et al. (2007) Spanish adaptation	2	Exploratory factor analysis (EFA) GLM (Oblimin rotation)	2, 4, 7, 8, 14, 16	12
de Brito and Faro (2016) Brazilian adaptation	2	Exploratory factor analysis (EFA)	2, 4	16
Algarvio et al. (2018) Portuguese adaptation	4	Confirmatory factor analysis (CFA)	1, 2, 17, 18	14
Pontoppidan et al. (2018) Danish adaptation	2	Rasch modelling	2, 11	16
Nielsen et al. (2020) Danish adaptation	2	Rasch modelling	2, 11	16
Nærde and Hukkelberg (2020) Norwegian adaptation	2	Exploratory factor analysis (EFA), Geomin rotation	1, 2, 4, 15, 18	13

So far, the PSS scale has had several linguistic adaptations, but the results of research on their psychometric parameters are very much diverse. Research reveals different numbers of factors, and researchers decide to remove more or less of the original test items (see Table 1). As presented in Table 1 item 2 was omitted in all adaptations. Nærde and Hukkelberg (2020) suggest that the reason for this can be a double negation used in this item, which can hinder the response to this sentence. Previous studies have included from 12 to 17 PSS items with some variation as to which items are deleted.

The Present Research

The PSS is an internationally used instrument of proven validity and reliability in both clinical and nonclinical samples. It makes it possible to capture parental experience on a continuum from parenting as a sense of strength to parenting as a sense of burden. However, a translation of the PSS into Polish and psychometric evaluation of its properties is missing. Therefore, the aim of the present research was to (a) test structure of the PSS using exploratory and confirmatory factor analysis and to assess its reliability; and (b) obtain evidence regarding convergent validity. The aim to assess the factor structure and reliability of the PSS-PL was conducted in two studies.

The Polish version of the Parenting Stress Index (PSI) is available. This tool focuses on the sources of the parental stress and is widely used in a clinical context when upbringing of a child requires high level of parental commitment. Therefore, the Polish version of the PSS can be an alternative to the PSI, for example in studies focusing on individual's perception of parental experiences.

Respondents received a link to the questionnaires with a letter that explained the purpose of the research, informed them about the voluntary character of participation, and stressed that each person could withdraw from participation in the research at any moment. An informed consent was received from all participants. Anonymity was maintained and personal information was kept confidential. Moreover, the researcher's contact details were given in case someone wanted to seek help.

Data Analysis

First, this study used the Kaiser–Meyer–Olkin (KMO) test and Bartlett's test of sphericity to measure the adequacy of samples in terms of the distribution of values for the execution of factor analysis. Secondly, exploratory and confirmatory factor analyses were performed on the Polish PSS scale scores collected during Study 1.

After this, confirmatory factor analysis was conducted in Study 2 to assess the factor structure with a different group of participants. Model parameters were estimated utilizing the maximum likelihood method. In order to assess the correctness of fitting the model to the data, the GFI (goodness of fit index), the AGFI ((adjusted) goodness of fit), the RMSEA (root-mean-square error of approximation), and chi-square test (χ^2/df) were employed. AGFI and GFI $\geq .90$ values indicate good and adequate adjustment of the model to the data. Values $\chi^2/df < 2$ also suggest a good fit of the model to the data. The RMSEA $< .08$ value can be interpreted as a good fit, too (Hu & Bentler, 1999). Apart from that, the PSS reliability was assessed by determining internal consistency through McDonald's omega coefficients among all the items of the instrument. Thirdly, the convergent validity of the Polish version of the PSS was examined by determining the magnitude of the relationship of parental stress with general perceived stress, parenting stress, family resilience and parental quality of life through Pearson's correlations. We assumed that general perceived stress and parenting stress would correlate positively with experiencing parenting as a burden, while mental and physical functioning and family resilience would correlate negatively with parenting stress. Considering that the PSS assesses specific stress regarding parenting experience, medium correlations with all instruments were expected.

This study used SPSS v. 27 and Jamovi 2.3 (retrieved from www.jamovi.org), and the significance level was set to .05.

STUDY 1

The aim of Study 1 was to establish the psychometric properties of the PSS (factor structure, internal consistency, and convergent validity) in a Polish sample.

Method

Participants

Only two-parent families were included in the study. It was not controlled if the participants came from the same family so the female and male samples were independent. We analysed data obtained from 250 subjects. Table 2 summarizes the demographic characteristics of 126 (50.4%) mothers and 124 fathers (49.6%) with children aged 18 years or younger at the time of the survey. Parents between 21 and

61 years were recruited, so the investigated parents were in their young or middle adulthood (M_{age} = 36.38, *SD* = 6.97, Mo = 33). The majority of the investigated parents had two children (*n* = 117, 46.8%) or only one (*n* = 97, 38.8%). One out of all participants had five children. The majority of the parents had a higher education (*n* = 190, 76%), the next group was comprised of those with a secondary education (*n* = 48, 19.2%). None of the investigated adults had a primary education.

Table 2

Demographic Characteristics (N = 250)

Variable	*n*	%
Gender:		
male	124	49.6
female	126	50.4
age (*M*, *SD*)	26.38	6.97
Education:		
higher	190	76
secondary	48	19.2
vocational	12	4.8
Place of living:		
village	13	5.2
village with municipal status	10	4
town: ≤ 5 thousand	5	2
town: 5–50 thousand	27	10.8
city: 50–200 thousand	23	9.2
city: > 200 thousand	27	10.8
Children:		
1	97	38.8
2	117	46.8
3	29	11.6
4	6	2.4
5	1	0.4
Living with:		
spouse	211	84.4
cohabiting partner	34	13.6
single	5	2
Self-assessment of living standard:		
very poor	0	0
modest	10	4

average	86	34.4
good	119	47.6
very good	35	14
Source of income:		
work	241	96.4
pension	1	0.4
social assistance	8	3.2
Chronic disease:		
hypothyroidism	37	14.8
Hashimoto	8	3.2
Usher syndrome	3	1.2

Measures

The Parental Stress Scale asks parents to describe their parenting experiences by rating items on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher values indicate a higher level of parental stress. The possible range of scores is 18 (low stress) to 90 (high stress). With a total of 18 items, four factors are assessed: Parental Rewards, Parental Stressors, Lack of Control, and Parental Satisfaction. According to Berry and Jones (1995), the scale's scores were reliable, with a coefficient of .83 and a mean interitem correlation of .23. The test–retest correlation was .81 after six weeks.

The forward-backward procedure was applied to translate the original English version of the PSS into Polish. The PSS was translated into Polish by two psychologists fluent in English. The Polish language version was developed on the principle of preserving the original content of items, using similar grammatical structures of questions and difficulty of terms as much as possible. A blind back translation was done and the consistency of the original version with the translation was checked by a native speaker, as recommended by the International Test Commission (ITC) (Hambelton, 1994).

To check the convergent validity of the Polish version of the PSS, the tools were selected on the basis of theory and previous validity. The Polish version of the Perceived Stress Scale (PSS-10) was used to assess the intensity of perceived stress related to one's life situation during the last month (Juczyński & Ogińska-Bulik, 2009). The scale does not focus on recording stressful events, but on a subjective assessment of various symptoms of distress resulting from the burden of such events. Sum scores (0–40) of the ten items (0–4) can be generated with higher values indicating higher levels of stress. Reliability using McDonald's omega was .89. Parental

stress was assessed by the Polish version of the PSI/SF-3 (Abidin, 1995; Pisula & Barańczuk, 2020). The PSI/SF-3 consists of 36 items that reflect three subscales: Parental Distress (PD), the Parent–Child Dysfunctional Interaction (PCDI), and Difficult Child (DC). Higher scores indicate higher levels of parenting stress. The internal consistency for this sample was $\omega = .92$. Family functioning was assessed with the Polish version of the Family Resilience Assessment Scale (Nadrowska et al., 2017). A total of 54 items generates a global family resilience score with higher scores indicating better family functioning. Reliability using McDonald's omega was .96. The SF-36v2 Health Survey was used to assess the mental and physical quality of life. The SF-36v2 shows good reliability. Higher scores indicate a higher quality of life with a range from 0 to 100 (Maruish, 2011). Reliability using McDonald's omega was .68 for physical and .87 for mental quality of life.

Procedure

The sampling procedure consisted of two stages and had a purposeful-random character. The basic criterion in the purposeful sampling was being a parent (the exclusion criterion was the deprivation or limitation of parental rights) and the children's age, indicating their pre-adult life phase. What was random, however, was the selection of investigated individuals. Therefore, if somebody was a parent of a child/children before eighteen had an equal probability to be in a sample. The study was conducted online using Google forms. The order of the tools was not rotated. An invitation to the research with the link to the questionnaires and a letter with full information about the study, including its goal, anonymous nature and uses of data was placed on social media and web portals for parents. Before starting, all participants were presented with an online informed consent form. Only participants who gave consent to participate could proceed and answer the protocol. Parents provided demographic information and answered several questionnaires regarding their family, quality of life, and perceived stress.

Results

Exploratory Factor Analysis

The original version of the questionnaire includes four subscales: a) Parental Rewards, b) Parental Stressors, c) Lack of Control, and d) Parental Satisfaction. Bartlett's test of sphericity, which tests the overall significance of all the correlations within the correlation matrix, was significant, $\chi^2(153) = 1640$, $p < .001$, indicating

that it was appropriate to use the factor analytic model on this set of data. The Kaiser–Meyer–Olkin measure of sampling adequacy indicated that the strength of the relationships among variables was high (KMO = .873), thus it was acceptable to proceed with the analysis. The exploratory factor analysis was conducted on all 18 items with principal axis factoring by Oblimin rotation to examine the structure of the Polish version of the PSS. The applied criterion of saturation of the item with the given factor is the loading value above 0.3 (Field, 2013). Table 3 shows the factor loadings.

Table 3
The Three Factor Solution of EFA

Item	Factor 1	Factor 2	Factor 3
PSS01	.588		
PSS02	.314		
PSS03			.423
PSS04			.706
PSS05	.755		
PSS06	.693		
PSS07	.790		
PSS08	.558		
PSS09		.349	
PSS10		.847	
PSS11		.487	
PSS12		.750	
PSS13			.309
PSS14	.473		
PSS15	.360	.441	
PSS16		.652	
PSS17	.571		
PSS18	.581		

The interpretation of the factorial structure of the PSS shows that Factor 1 is defined by ten items (1, 2, 5, 6, 7, 8, 14, 15, 17, 18) and explains 20.92% of the variance. Factor 2 is defined by six items (9, 10, 11, 12, 15, 16) and explains 16.08% of the variance. Factor 3 is defined by three items (3, 4, 13) and explains 6.36% of the variance. In this step, eigenvalues supported a three-factor solution, but one factor appeared with only three items, and in addition, there was one significant

cross-loading (item 15). Three factors explained 43.4% of the variance. The data showed a good fit to a model of parental stress, $\chi^2(102) = 193$, $p < .001$, RMSEA = .0596, 90% CI [.0468, .0727], TLI = .907, but the variance explained by three factors was low (Hair et al., 2009). Therefore, we decided to check both a three-factor and two-factor solution in the CFA.

Confirmatory Factor Analysis

In the first step, we conducted a CFA for three factors using all 18 items with item 14 in Factor I, as suggested by the EFA results: $\chi^2(132) = 365$, $p < .001$, RMSEA = .0841, 90% CI [0739, .0944], CFI = .849, TLI = .824. The factor loading of item 2 was not statistically significant, so we removed it and conducted the CFA for three factors on 17 items: $\chi^2(116) = 331$, $p < .001$, RMSEA = .0861, 90% CI [.0753, .0970], CFI = .858, TLI = .834. Next, we decided to check a two-factor solution in the CFA because of low variance explanation in the EFA, theoretical assumptions on parental stress as a continuum between parental stressors and rewards, and the two-factor structure of the PSS in most adaptations. First, we conducted a CFA on all 18 items: $\chi^2(134) = 385$, $p < .001$, RMSEA = .0865, 90% CI [.0765, .0967], CFI = .837, TLI = .814. Inspections of the items revealed that factor loading for item 2 was not statistically significant and item 4 had a low factor loading (.309). Therefore, items 2 ("There is little or nothing I wouldn't do for my child(ren) if it was necessary") and 4 ("I sometimes worry whether I am doing enough for my child(ren)") were excluded from the questionnaire, and we conducted the next CFA, using 16 items. The two-factor solution showed better model-fit, although the cutoffs were still below the recommended values (Hu & Bentler, 1998), $\chi^2(103) = 299$, $p < .001$, RMSEA = .0873, 90% CI [.076, .099], CFI = .866, TLI = .844 without cross-loadings. Thus, in line with our criteria (theoretical assumptions and better model fit), this two-factor model presented the most parsimonious solution (see Table 4) and was chosen for further investigations.

The interpretation of the factorial structure of the Polish PSS speaks in favour of the two-factor composition of the questionnaire. Most items included in the subscale, which we propose to call Parental Dissatisfaction, loaded component I. In the Polish version, this component consists of items number 1, 5, 6, 7, 8, 14, 17, and 18. The items that are included in component II form the subscale Parental Stressors. In the original version, this subscale was formed by items 3, 9, 10, 11, 12, 16, whereas in the Polish version the items forming this factor are items number 3, 9, 10, 11, 12, 13, 15, 16. Therefore, the final version of the Polish PSS consists of 16 items (see Table 4).

Table 4

Items and Factor Loadings in the Polish Version of the PSS (Study 1 and Study 2)

No.	Items	Factor I		Factor II	
		Study 1	Study 2	Study 1	Study 2
1*	Jestem szczęśliwa/-y w mojej roli rodzica (I am happy in my role as a parent).	.460	.653		
3	Opieka nad moim dzieckiem (moimi dziećmi) czasami zajmuje więcej czasu i energii niż jestem w stanie im dać (Caring for my child(ren) sometimes takes more time and energy than I have to give).			.444	.588
5*	Czuję się blisko z moim dzieckiem (moimi dziećmi) (I feel close to my child(ren)).	.500	.612		
6*	Lubię spędzać czas z moim dzieckiem (moimi dziećmi) (I enjoy spending time with my child(ren)).	.505	.643		
7*	Moje dziecko (moje dzieci) jest (są) dla mnie ważnym źródłem czułości (My child(ren) is (are) an important source of affection for me).	.497	.518		
8*	Posiadanie dziecka (dzieci) daje mi pewniejsze i bardziej optymistyczne spojrzenie w przyszłość (Having children gives me a more certain and optimistic view for the future).	.571	.632		
9	Głównym źródłem stresu w moim życiu jest moje dziecko (są moje dzieci) (The major source of stress in my life is my child(ren)).			.506	.727
10	Posiadanie dziecka (dzieci) pozostawia w moim życiu mało czasu i elastyczności (Having children leaves little time and flexibility in my life).			.892	1.045
11	Posiadanie dziecka (dzieci) stanowi ciężar finansowy (Having children has been a financial burden).			.647	.767
12	Jest mi ciężko pogodzić różne obowiązki z powodu mojego dziecka (moich dzieci) (It is difficult to balance different responsibilities because of my child(ren)).			.871	1.046
13	Zachowania mojego dziecka (moich dzieci) są dla mnie często krępujące lub stresujące (The behaviour of my child(ren) is often embarrassing or stressful to me).			.548	.770
14	Gdybym mogła/mógł zdecydować jeszcze raz, może nie miałabym/nie miałbym dziecka (dzieci) (If I had it to do over again, I might decide not to have children).	.509	.635		
15	Czuję się przytłoczona/-y odpowiedzialnością bycia rodzicem (I feel overwhelmed by the responsibility of being a parent).			.768	.922
16	Posiadanie dziecka (dzieci) oznacza, że mam zbyt mało wyborów i zbyt mało kontroli nad własnym życiem (Having children has meant having too few choices and too little control over my life).			.884	1.069
17*	Jestem spełniona/-y jako rodzic (I am satisfied as a parent).	.533	.738		
18*	Uważam, że moje dziecko (moje dzieci) wzbudza (wzbudzają) sympatię (I find my child(ren) enjoyable).	.332	.454		

Note. Items marked with an asterisk are reverse scored.

Internal Reliability of the PSS

After excluding items number 2 and 4, an assessment of the reliability of scales was conducted, using the internal consistency method and calculating McDonald's omega. The obtained coefficients turned out to be satisfactory, suggesting that the PSS is an internally consistent tool. McDonald's omega reliability coefficients for the whole PSS ω = .881, and for the subscales were as follows: Parental Dissatisfaction ω = .858, Parental Stressors ω = .824.

In line with the concept of the PSS, its components are not independent of one another. Therefore, it was necessary to reflect on the relationships between the components of the questionnaire. We anticipated that intercorrelations between the distinguished aspects of the PSS as well as their correlations with the general result would be high. Appropriate coefficients are presented in Table 5. The obtained values confirmed our expectations. All correlations between the scales were statistically significant. The highest correlation can be observed between Parental Stressors and the general result.

Table 5
Intercorrelations in the Polish Version of PSS (N = 250)

	PSS (global)	PSS Parental Stressors
PSS (global)	–	–
PSS Parental Stressors	.915***	–
PSS Parental Dissatisfaction	.810***	.506***

*** $p < .001$.

Convergent Validity

To establish convergent validity, the following variables were selected: perceived stress, parenting stress, parents' health-related quality of life as well as family resilience. The Perceived Stress Scale (PSS-10), the Parenting Stress Index (PSI-3), the SF-36v2 Health Survey, and the Family Resilience Assessment Scale (FRAS) were used. The analyses included variables that, from a theoretical point of view, are constructs related to parental stress. Appropriate coefficients are presented in Table 6.

Table 6

PSS and Other Measures—Congruent Validity (N = 250)

	PSS (global)	PSS–PS	PSS–PD
PSI-3	.745***	.671***	.620***
PSI-3 Parental Distress	.740***	.704***	.561***
PSI-3 Parent-Child Dysfunctional Interaction	.632***	.504***	.620***
PSI-3 Difficult Child	.563***	.525***	.442***
PSS10	.500***	.495***	.351***
SF-36v2 Physical Functioning	–.063	.038	–.191***
SF-36v2 Role Physical	–.444***	–.377***	–.402***
SF-36v2 Bodily Pain	–.317***	–.274***	–.282***
SF-36v2 General Health	–.446***	–.368***	–.420***
SF-36v2 Vitality	–.536***	–.505***	–.414***
SF-36v2 Social Functioning	–.363***	–.335***	–.289***
SF-36v2 Role Emotional	–.433***	–.385***	–.367***
SF-36v2 Mental Health	–.538***	–.507***	–.415***
SF-36v2 Physical Component Score	–.208***	–.088	–.318***
SF-36v2 Mental Component Score	–.485***	–.486***	–.332***
FRAS	–.427***	–.350***	–.405***
FRAS Family Communication and Problem Solving	–.410***	–.342***	–.380***
FRAS Utilizing Social and Economic Resources	–.235***	–.182***	–.238***
FRAS Maintaining a Positive Outlook	–.364***	–.296***	–.348***
FRAS Family Connectedness	–.275***	–.254***	–.219***
FRAS Family Spirituality	–.208***	–.162**	–.209***
FRAS Ability to Make Meaning of Adversity	–.151**	–.080	–.207***

Note. PSS–PS = Parental Stressors, PSS–PD = Parental Dissatisfaction.
*** $p < .001$, ** $p < .01$.

Almost all values confirmed our expectations. Correlations between the scales were statistically significant. They were positive in the case of stress and negative in the case of family resilience. The highest correlation was between the global results of the PSS and the PSI-3 and also between Parental Stressors in the PSS and Parental Distress in the PSI-3. There was no correlation between the PSS and Physical Functioning (SF-36v2).

Group Differences

Our data showed some differences between men and women, but only in the Parental Dissatisfaction subscale (Table 7). Women had lower results on this subscale meaning that mothering is more rewarding for them than fathering for men. There were no significant differences in the overall PSS scores and the Parental Stressors subscales.

Table 7
Mean Differences on PSS and Dimensions for Gender (N = 250)

	Mean		*t*-Student statistics	*p*	Effect size
	Women (*n* = 126)	Men (*n* = 124)			
Parental Stress (global)	31.6	32.2	–.54	.589	–.07
Parental Stressors	20.6	19.6	1.30	.194	.16
Parental Dissatisfaction	11.0	12.6	–3.11	.002	–.39

Discussion

Two items were deleted from the Polish version of the PSS: 2 and 4. We have not been able to identify any studies that included all 18 PSS items and had a robust and parsimonious factor structure. This even includes the initial validation study by Berry and Jones (1995), where two items (PSS2 and PSS4) were omitted due to the lack of significant factor loadings. Item 2 was also eliminated in the Chinese, Portuguese, and Danish version of the PSS because of the negative item correlation with the scale (Baker et al., 2001; Cheung, 2000), and items 2 and 4 were deleted in the Spanish, Brazilian, and Norwegian adaptation (see Table 1). Exploratory factor analysis showed that a three-factor structure best fit the data, but the variance explained by three factors was low. The CFA with two different models (two-factor and three-factor) was then conducted. Goodness-of-fit statistics showed poor fit for both models. Therefore, study 2 was conducted to test the factor structure of the Polish version of the PSS.

Additionally, convergent validity was found to be satisfactory for the subscales and total PSS, which is evident by the medium to large correlations with established measures of parenting stress, perceived stress, health-related quality of life and family resilience. This result is in accordance with previous research on the convergent validity of the PSS (de Brito & Faro, 2016; Nielsen et al., 2020; Nærde & Hukkelberg, 2020; Oronoz et al., 2007).

STUDY 2

The aim of this study was to provide further evidence for the factor structure of the Polish version of the PSS and check its reliability.

Method

Participants

The sample ($N = 152$) consisted of 111 mothers (73%) and 41 fathers (27%). Demographic information on children and parents is presented in Table 8. The study sample is comparable to the participants in Study 1. The inclusion criteria were as follows: being a parent of a minor child and being in an intimate relationship.

Table 8
Demographic Characteristics (N = 152)

Variable	*n*	%
Gender:		
male	41	27
female	111	73
age (*M*, *SD*)	35.3	6.31
Education:		
higher	108	71.1
secondary	32	21.1
vocational	10	6.6
lower secondary (gimnazjum)	1	0.7
primary	1	0.7
Place of living:		
village	37	24.3
village with municipal status	7	4.6
town: ≤ 5 thousand	5	3.3
town: 5–50 thousand	26	17.1
city: 50–200 thousand	33	21.7
city: > 200 thousand	44	28.9
Children:		
1	62	40.8
2	68	44.7

3	19	12.5
4	3	2
Age of youngest child:		
M	5.01	
SD	4.87	
range	< 6 months–18 years	
Living with:		
spouse	121	79.6
cohabiting partner	26	17.1
single	5	3.3
Self-assessment of living standard:		
very poor	0	0
modest	1	0.7
average	54	35.5
good	73	48
very good	24	15.8
Source of income:		
work	147	96.7
social assistance	5	3.3

Measures

Participants completed a 16-item Polish version of the PSS developed in Study 1.

Procedure

Sample 2 was collected in June and July 2022 specifically for this study via Facebook groups for parents with a link to a short web survey with a 16-item Polish version of the PS and metric.

Results

Confirmatory Factor Analysis

First, we conducted the CFA testing a three-factor model distinguished in the EFA, $\chi^2(101) = 198$, $p < .001$, RMSEA = .0793, 90% CI [.063, .096], CFI = .922, TLI = .907. Next, we conducted the CFA for 2 factors established in Study 1, $\chi^2(103) = 200$, $p < .001$, RMSEA = .0786, 90% CI [.062, .095], CFI = .922,

TLI = .909. The results from these two confirmatory factor analyses were comparable. However, a 2-factor solution showed a slightly better fit to the data (see Table 4).

Internal Reliability of PSS

The internal consistency of the Polish version of the PSS was measured through McDonald's omega (ω) and intercorrelations among the subscales. For the total scale and the subscales, results showed excellent levels of McDonald's omega: for the total PSS ω = .918, for Parental Dissatisfaction ω = .897, and for Parental Stressors ω = .870. Intercorrelations (Pearson's *r*) between the subscales were computed in order to make sure the subscales were not redundant. The correlation between Parental Dissatisfaction and Parental Stressors was .639. at the level $p < .001$. As expected, the subscales were positively correlated, and intercorrelations showed that the two dimensions are interrelated but not entirely overlapping.

Discussion

The results show that parental stress was best conceptualized as two correlated subscales, covering altogether 16 PSS items. The factors, Parental stressors and Parental Dissatisfaction, correspond largely with previous findings and showed internal consistencies at a satisfactory level. The results of our analyses suggest that the discussed tool for measuring parental experience as a source of strength or stress has satisfactory psychometric parameters in the Polish version. Further studies should take into account different variables in order to verify the external validity of the PSS.

GENERAL DISCUSSION

Overall, the Polish version of the PSS and its subscales exhibit acceptable to excellent internal consistency and show a pattern of correlations supporting the validity of the Polish PSS. These findings are consistent with the internal consistency of the original version of the PSS. The principal difference between the Polish version of the PSS and the original one is the number of factors and items.

Confirmatory factor analyses showed that the two-factor solution determined the Polish version of the PSS: Parental Stressors, and Parental Dissatisfaction. In Study 1, the model fit was poor. Therefore, Study 2 was conducted to assess the

PSS and structure and the model fit was satisfactory. The samples in Study 1 and Study 2 differ in gender. Therefore, it is possible that the two-factor structure confirmed in Study 2 (73% mothers) reflects parental experiences in mothers. Future studies should assess the factor structure of the Polish version of the PSS among fathers. Reports of fewer factors than in the original version of the PSS are consistent with the results obtained by other authors. In most studies on the PSS adaptations a two-factor structure was distinguished (see Table 1). Moreover, the Danish and Norwegian adaptations treat parental stress as two-dimensional, scored as two subscales. Therefore, these two subscales, also distinguished in the Polish version, enable to compare two aspects of parental stress, which are not mutually exclusive, as it is possible to experience both high levels of parental stress and parental satisfaction.

The PSS is a useful tool for measuring parenting experience on the continuum from parenting as a source of satisfaction to parenting as a source of burden. The questionnaire allows researchers to estimate both the loss of resources (time, energy, control) and to measure the benefits of parenting (happiness, closeness, and affection). Therefore, it allows protective and risk factors in parenting experience to be identified. The Polish adaptation of the PSS will make it possible to conduct comparative research. It will be possible to analyse the similarities and differences in the experiences of Polish parents compared to other nationalities. Moreover, the scale can be used in families where parents cope with critical life events. It also can be a valuable tool in parental burnout research.

The results showed that women achieve lower scores in the Parental Dissatisfaction subscale. The Parental Dissatisfaction subscale contains mainly items that require recoding. Therefore, the lower the score on this scale, the more satisfying parenting is, and similarly: the higher the score, the less parental reward and satisfaction. It suggests that mothering is an important part of women's identity and that it gives them satisfaction, even though it usually involves combining many roles (children–work–home). As a result, the level of maternal stress can depend on work overload, a conflict of family–work roles, and the involvement of the husband/partner in child-rearing (Knudson-Martin & Mahoney, 2009).

There are a few implications for the research and clinical practice. First, future studies should check the psychometric properties of the Polish version of the PSS in order to use it as a screening tool for diagnostic purposes. For example, this scale can be used to check how parents experience balancing a double role both in a clinical and non-clinical context and can facilitate designing interventions that help to reconcile various life roles. Second, the results of this study can help to develop interventions aimed at decreasing the level of parental stress in families with parents facing critical life events and/or illnesses. It can also be a useful instrument in studies on parental burnout. Future studies on the psychometric properties of the

Polish version of the PSS should include the parents of children with behavioural and medical problems. Moreover, future studies should also compare parental stress between healthy and mentally or physically ill parents. The comparisons between these clinical and non-clinical groups will show if the Polish PSS discriminates significantly between individuals from the general population and patients, thus supporting its specificity. Future studies should also be concentrated on searching for specific protective and risk factors for an elevated level of parental stress in such families resulting in designing a theoretical model of parenting in challenging times. Moreover, the Parental Stress Scale enables one to study the positive aspects of parenting and seek determinants that are linked to experiencing parenting as a source of strength. Referring to the positive aspects of parenting makes it possible to move beyond the model of deficits in family functioning and focus on prevention interventions that address family strengths and assets. The interesting direction of future studies may be investigating differences in parents' lives across various countries and cultures.

Conclusions

This paper describes the results of the research on the Polish adaptation and validation of the PSS, a questionnaire for measuring parental stress and parental satisfaction. This task was successfully completed. There was no such instrument in Polish literature. Based on the gap, the following research contributions are identified. Our study is the first to adapt the PSS into Polish culture. In this research, we explored the psychometric properties of the Polish version of the PSS, in a sample of parents with minor children. Specifically, we aimed to investigate the structure of the PSS, assess its reliability and convergent validity. The Polish version of the PSS has relatively acceptable psychometric properties. Moreover, the reduced 2-factor version not only proved to be more theoretically consistent but also had good all reliability indicators. For further use and research, the 2-factor PSS is therefore recommended. It measures the intensity of the following two aspects of parental experiences: parental experience as a) a source of strength or b) stress. Understanding experiences of parents is extremely important in predicting their development and functioning in a parental role. As previous studies have also failed to reach conclusive results on the optimal factor structure for the PSS, further research is needed in order to elucidate the possible effects of gender and nationality on parental experiences.

Limitations

The study enrolled mostly parents of toddlers, preschoolers, and school children. And, since the challenges of parenting change over time, subsequent studies should assess the psychometric properties of the Polish version of the PSS in the group of parents of teenagers. Moreover, the sample was relatively small regarding the employed statistical analyses and in Study 2, the group of mothers and fathers was not equal. Despite these limitations, the results indicate that the Polish version of the PSS exhibits satisfactory psychometric properties and may be a promising instrument for measuring the parenting experience as a source of strength or stress in the Polish population.

CRediT Author Statement

Joanna Matuszczak-Świgoń (70%): conceptualization, investigation, resources, writing, review and editing.

Lucyna Bakiera (30%): formal analysis, writing, review and editing.

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