Factor structure and psychometric properties of a Polish adaptation of the Frost Multidimensional Perfectionism Scale

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Abstract

The *Frost Multidimensional Perfectionism Scale* (FMPS) is one of the most popular questionnaires for measuring perfectionism. Although this scale is in common use, its psychometric parameters still remain in dispute. The aim of this article is to present the Polish adaptation of the FMPS in a non-clinical sample. 696 university students aged 18 to 42 ($M = 26.74$, $SD = 7.56$) took part in the study. Confirmatory Factor Analyses suggested that the most appropriate factor structure of the adapted version of the FMPS contains 5 correlated factors: CM (concerns over mistakes), DAA (doubts about actions), PE (parental expectations), PC (parental criticism), and PS (personal standards). The ORG (organization) subscale was removed after evaluation. The evaluation of the specific relationships of each dimension of the adapted version of the FMPS with shame, guilt, worry, rumination, and indecisiveness revealed that when controlling for the variances of the remaining dimensions, significant relationships occurred almost only in the case of the CM, DAA and PS scales, suggesting that they constitute the three core facets of perfectionism as measured by the FMPS.

Keywords Perfectionism · FMPS · Polish adaptation

Introduction

Perfectionism is a personality style characterized by setting for oneself very high, often unrealistic, standards and expectations and striving to realize them flawlessly. This predisposition is usually accompanied by a tendency to be overly critical of oneself and by subordinating the evaluation of oneself to the achievement of these standards (Fleet and Hewitt 2002; Stoeber and Otto 2006). In classical terms, perfectionism was treated as a unidimensional construct and it was considered to be a significant predictor of psychopathology, which was mainly a result of the observation that high levels of this characteristic could be observed in patients who experienced such mental difficulties as depression, eating disorders and obsessive-compulsive disorder (Burns 1980; Pacht 1984).

Since the 1990s there have started to appear new multidimensional models of perfectionism. Authors of these models

emphasized that perfectionism is a complex characteristic that can manifest in various ways and that can lead to various consequences, also positive ones. Among the different models of perfectionism (e.g. Hewitt and Flett 1991; see Stoeber 2017 for an overview) one of the most commonly used is the model put forward by Frost and his colleagues (Frost et al. 1990). Perfectionism was defined by Frost et al. as the trait of having very high standards for one's own functioning and of preferring order and organization, which is accompanied by the tendency of being overly critical of themselves (Frost et al. 1990). Among such critical evaluative tendencies there are intolerance of mistakes and errors, and the questioning of the quality of one's performance. According to them the source of these tendencies lies, in the first place, in an overly critical and demanding parenting style of the individuals parents. In order to measure these various facets of perfectionism Frost et al. created the *Multidimensional Perfectionism Scale* (Frost et al. 1990, 1993), which enables the measurement of six separate dimensions of perfectionism: Concern over Mistakes (CM; reacting negatively to one's own mistakes), Doubts about Actions (DAA; doubting one's abilities and the quality of one's performance), Parental Expectations (PE; perceiving one's parents as possessing high demands), Parental Criticism (PC; perceiving one's parents as being overly critical), Personal Standards (PS; possessing very high

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standards of evaluating one's actions), Organization (ORG; attaching great importance to order and good organization).

Studies conducted in successive years (for an overview see Stoeber and Otto 2006; Stoeber 2017) have shown that the different dimensions of perfectionism mentioned in Frost's model may lead to different effects for an individual, confirming the validity of the thesis about the existence of adaptive and maladaptive dimensions of perfectionism (Hamachek 1978). Personal standards and Organization in the majority of cases turned out to be related to indicators of good adjustment, in the form of positive affect, conscientiousness and active coping styles, whereas the remaining dimensions, especially CM and DAA, proved to be associated with such difficulties as depression, low self-esteem, anxiety, negative affect, shame, and guilt (Ashby et al. 2006; Stoeber et al. 2007; Stoeber and Otto 2006).

Although today Frost's scale is one of the most frequently applied questionnaire for measuring perfectionism, many researchers have formulated reservations about this tool. These reservations pertain to both the validity of the very construct of perfectionism in Frost's model and to the factorial validity of the measure. Even in the first studies (Frost et al. 1990) it turned out that the ORG scale correlated positively with the PS scale, but did not correlate or correlated weakly with the remaining dimensions of perfectionism and with the total score. For this reason Frost recommended that the result of this scale should not be included in the calculation of the total score. Presently, we can more and more frequently observe this dimension being omitted by researchers, as it is not being considered as a crucial sphere of perfectionism (Suddarth and Slaney 2001; Stoeber and Otto 2006). Doubts are also being formulated with respect to the parental scales, i.e., PE and PC. Researchers (e.g. Enns et al. 2002) remark that specific behaviors of parents should rather be treated as conditions for the development of perfectionism in an individual, and not as a core dimension of perfectionism. Stoeber and Otto (2006), in a summary of their review of studies on perfectionism, recommend treating as an indicator of *perfectionistic strivings* only the result of the PS scale, and as an indicator of *perfectionistic concerns* the results of the CM and the DAA scales. They concluded that the remaining dimensions of the FMPS (ORG, PC, PE) are not core facets of perfectionism.

Another area in which the results of studies still remain equivocal is the evaluation of the factorial structure of the FMPS. In their first studies, Frost et al. (1990) confirmed the six-factor structure of the FMPS, however, studies conducted in subsequent years have led to differentiated results that suggest that the scale works better when the number of factors is lower. Purdon et al. (1999) used exploratory factor analysis and observed that the most optimal number (statistically and from the perspective of interpretation of results) was a three-factor structure, in which they distinguished: Fear of Mistakes (items from the CM and the DAA scale), Goal/Achievement Orientation (items from the PS and the ORG scale) and

Perceived Parental Pressure (items from the PE and the PC scale). Other researchers, including Stöber (1998), Khawaja and Armstrong (2005), and Hawkins et al. (2006) observed, in turn, that the most optimal and most appropriate for interpretation was a four-factor structure, with the ORG scale as a separate factor (CM + DAA; PS, ORG, PE + PC). However, there have also been studies that supported the 6-factor structure of the FMPS (e.g. Gelabert et al. 2011).

As evidenced by this short review, the FMPS scale, although used in many countries around the world, still requires further study and, maybe, modification in the future. The study presented in this article focused on the evaluation of the psychometric parameters of the FMPS in a Polish adaptation, which so far has not been the subject of analyses. It seems that evaluating the psychometric parameters of the FMPS translated into languages other than English can be an important point in the discussion about the psychometric value of this measure and in the ability to compare the results of studies on perfectionism conducted in non-English speaking countries.

Research Problem and Hypotheses

The main aim of the presented study was (1) to evaluate the factorial structure of the Polish version of the FMPS, and (2) to evaluate the validity of the scale by analyzing the relationship between the dimensions of perfectionism and their well-known external correlates: shame and guilt, worry, rumination, and indecisiveness (among others: Abdollahi et al. 2018; Burgess et al. 2018; Fleet et al. 2016; Hewitt et al. 2017; Khawaja and Armstrong 2005; Stoeber et al. 2007; Stöber and Joorman 2001; Stoeber and Otto 2006).

As regards the factorial structure of the FMPS, after taking into account the results of earlier studies it was difficult to offer an unambiguous hypothesis about the number of factors in the Polish version of the scale. Other studies have indicated that the scale could have three (Purdon et al. 1999), four (Khawaja and Armstrong 2005; Stöber 1998), or six factors (Frost et al. 1990; Gelabert et al. 2011). Additionally, a two-factorial structure with PS and ORG as one factor and CM, DAA, PC, and PE as the other one should also be taken into account (see Frost et al. 1993). It was, therefore, decided to assess these different solutions in the Polish sample.

As regards the external validity of the Polish adaptation, it was assessed by analyzing the specific relationships between the dimensions of perfectionism and its above mentioned correlates that are closely related to psychopathology. It was hypothesized that CM and DAA will be the strongest positive predictors of shame, guilt, worry, rumination, and indecisiveness, thus supporting the notion that CM and DAA are the main indicators of perfectionistic concerns (Stoeber and Otto 2006). As regards the parental dimensions (PC and PE) it was hypothesized that they will also be positively, but more

weakly related to the other variables or that those relationships will be insignificant. As regard PS it was hypothesized that this dimension will be negatively related to the dependent variables, especially after the perfectionistic concerns variance will be controlled for (Stoeber and Damian 2016), which would confirm that it is an indicator of the adaptive manifestations of perfectionism. As the ORG scale usually turns out to be relatively separated from the other dimensions measured by the FMPS it was considered that its relationships with the analyzed variables will be much weaker than in the case of PS (but also negative) or insignificant.

Method

Participants and Procedure

696 university students aged 18 to 42 ($M = 26.74$, $SD = 7.56$), the majority of whom were women (85%), took part in the study. The sample included individuals who studied full-time (45%) and part-time (55%). For their participation in the study the students were granted credits, which they needed to complete their studies. All investigated individuals were informed about the aim of the study and about participation being voluntary. Informed consent was obtained from all participants who took part in the study.

Measures

Perfectionism The *Frost Multidimensional Perfectionism Scale* was used to measure dimensions of perfectionism (Frost et al. 1990). The questionnaire includes 35 items that create the 6 subscales described above: Concern over Mistakes (CM; 9 items, e.g. *If I fail at work/school, I am a failure as a person*), Doubts about Actions (DAA; 4 items, e.g. *Even when I do something very carefully, I often feel that it is not quite done right*), Parental Expectations (PE; 5 items, e.g. *My parents wanted me to be the best at everything*), Parental Criticism (PC; 4 items, e.g. *As a child, I was punished for doing things less than perfectly*), Personal Standard (PS; 7 items, e.g. *It is important to me that I be thoroughly competent in everything I do*), and Organization (ORG; 6 items, e.g. *I try to be an organized person*). First, the original English version of the FMPS was translated into Polish by two independent translators and by the first author of this paper. Subsequently, following a discussion over the translations, the final Polish version of the scale was created. In the next step, the final Polish version was translated back into English by another independent translator and this translation was compared with the original version. The comparison led to the conclusion that the two versions can be considered equivalent. The psychometric parameters of the Polish adaptation of the FMPS are presented later in the article.

Shame Proneness and Guilt Proneness The measurement of proneness to experience shame and guilt was conducted with the use of the *Personal Feelings Questionnaire-2* (PFQ-2; Harder and Zalma 1990; the Polish adaptation Piotrowski and Brzezińska 2017). The scale consists of a list of 22 adjectives that describe emotional states, including 10 that enable proneness to experience shame to be evaluated (e.g. *feeling humiliated*, *feeling laughable*) and 6 that pertain to proneness to experience guilt (e.g. *regret*, *feeling you deserve criticism for what you did*). The remaining adjectives are buffer words. The investigated individual, using the scale ranging from 0-*never* to 4-*continuously or almost continuously*, assesses the frequency of experiencing particular emotional states. Cronbach's alphas were .88 and .83, respectively.

Worry In order to measure the level of proneness to worry, the *Worry Domains Questionnaire-Short Form* was used (WDQ-SF; Stöber and Joorman 2001; the Polish adaptation Piotrowski and Brzezińska 2017). The scale enables measuring the cognitive component of anxiety (Stöber and Joorman 2001) that manifests itself in the form of a stream of negative and uncontrolled thoughts and images that pertain to future events with uncertain outcomes (Nolen-Hoeksema et al. 2008). The scale includes 10 items that measure the level of worrying in five areas: Relationships (e.g. *I worry that I will lose close friends*), Lack of Confidence, Aimless Future, Work and Financial. All items are assessed on a 5-point scale, ranging from 0-*not at all* to 4-*extremely*, expressing the degree of experienced concerns in particular areas. The scale enables calculating a total score, which was used in the present analyses, that is the sum of all items in the questionnaire. Cronbach's alpha of the indicator obtained in such a way was .92.

Rumination To measure proneness to ruminate, one of the scales from the shortened version of the *Rumination-Reflection Questionnaire* (Trapnell and Campbell 1999; the Polish adaptation Słowińska et al. 2014) was applied. The shortened rumination scale includes 6 items that measure proneness to experience involuntary concentration on personal experiences, e.g. *My attention is often focused on aspects of myself I wish I'd stop thinking about*. Cronbach's alpha was .85.

Indecisiveness The *Frost Indecisiveness Scale* (Frost and Shows 1993; the Polish adaptation Piotrowski and Brzezińska 2017) was used to measure difficulties in decisions making. The scale consists of 15 items (e.g. *I often worry about making the wrong choice*) assessed on a 5-point Likert scale, ranging from 1-*highly agree* to 5-*highly disagree*. Cronbach's alpha was .91.

Analytic Strategy

In order to analyze the factor structure of the Polish adaptation of the FMPS, Confirmatory Factor Analysis (CFA) with the use of AMOS 24 software was applied. As the Box's M test indicated that the covariance matrices for men and women were homogenous and because further analyses indicated that there were no significant mean differences between men and women on the perfectionism dimensions it was decided to use the whole sample in the analysis. Before the results of the CFA were analysed the data was inspected in order to identifying multivariate outliers (high Mahalanobis distance value with $p < .001$). There were 20 multivariate outliers in the sample, but because it turned out that removing them had no effect on the results it was decided to continue with the whole sample. As the multivariate distribution of errors was close to normal it was decided to use the CFA with the ML estimation. Three commonly used indices of model fit were applied (Hu and Bentler 1999): comparative fit index (CFI), whose value optimally should be higher than 0.95 (less strict rule of thumb is .90), root mean square error of approximation (RMSEA), whose value should not be higher than .06 (or 0.08 when we use the less strict approach) and standardized root mean square residual (SRMR) whose value should not be higher than 0.08. The models were also compared using Akaike information criterion (AIC). Lower the AIC value suggests better fit. A difference of more than 10 points suggests a large significant difference between two models compared (Burnham and Anderson 2004).

Additionally, because of some skewness of the multivariate distribution the Unweighted Least Squares (ULS) estimation, which does not require any distributional assumptions and can be used with moderately sized samples, was also applied (Briggs and MacCallum 2003). The CFA with the ULS estimation was used only in order to verify the results of the CFA with the ML estimation. In this case the fit indices that were described as suitable for this approach were used: AGFI that should be higher than .90, SRMR that should not be higher than .08, and NFI that should be higher than .95 (Byrne 2009; Hu and Bentler 1999).

First, the different factor solutions described in the literature were assessed (the latent factors were allowed to covary). Then the relationships between the perfectionism dimensions and the other variables were analyzed with the use of SPSS 24. Stoeber and Damian (2016) state that because perfectionistic concerns (CM and DAA) and strivings (PS) overlap, the positive influence of PS on functioning is often suppressed by the stronger negative associations of perfectionistic concerns. In such a case, positive associations between PS and adjustment may only be observed when this common variance is controlled for. In line with this observation the Pearson's r correlation was applied along with the multivariate regression analysis, which allowed us to control for the common variance of the predictors.

Results

Confirmatory Factor Analysis of the FMPS Structure

In order to assess the factor structure of the Polish adaptation of the FMPS, two-, three-, four-, and six-factor solutions were compared (Table 1). Error terms were not allowed to correlate. The six-factor structure best fitted the data (Table 1) and was significantly better than the four-factor model ($\Delta\chi^2 = 285.73$, $p < .001$; $\Delta\text{AIC} = 267.73$), but even in this case the fit indices indicated a poor fit.

Closer inspection of the results indicated that one of the reason for the poor fit of the models was the Organization (ORG) subscale, which was positively related only to the PS scale ($r = .29$) and negatively, very weakly (from $r = -.04$ to $r = -.21$) related to the other dimensions of the FMPS. Especially those negative correlations with most of the dimensions of the FMPS suggested that in the Polish translation of the FMPS the ORG scale might not be a valid indicator of perfectionism. That was the reason that in the next step it was decided to test a five-factor solution, without ORG. After removing the ORG scale the values of the fit indices of the five-factor model (CM, DAA, PC, PE, PS), as compared to the six-factor model, increased (CFI = .85, RMSEA = .08, SRMR = .08, $\Delta\chi^2 = 1621.66$, $p < .001$; the AIC value of the 5-factor model was 2060.29), but were still below the acceptance level. Inspection of the modification indices suggested that some error terms were correlated. When 10 pairs of error terms with M.I. higher than 30 were allowed to be correlated the values of the fit indices increased to the acceptance level (CFI = .90, RMSEA = .07, SRMR = .07, AIC = 1597.97; the items correlated were: 9–10, 13–14, 13–18, 21–34, 25–34, 32–33, 1–20, 11–20, 3–5, 22–35). Allowing error terms to correlate breaks some assumptions of the CFA, but taking into account that the correlated items shared common variance due to the wording of items and were always from the same subscale it was assumed to be acceptable in this case. After this step the models with a lower number of factors (2 and 3), but without the ORG items, were reassessed. Those analysis (chi-square difference tests) also suggested that the five-factor solution was the best fitted. When the ULS estimation was used instead of the ML estimation the results were similar (the five-factor solution was the best fitted model: AGFI = .97, SRMR = .07, NFI = .96). Additionally, the age of the participants was assessed as not affecting the factor structure (separate CFAs were performed for different age groups: 18–30 and 30+ year olds). Taking all of this into account the Polish adaptation of the FMPS has been assessed as having five distinct, but correlated factors. The ORG scale was excluded from further analysis because its theoretical validity was assessed as doubtful. All obtained factors were normally distributed as indicated by the values for skewness and kurtosis (all values were lower than 1). The covariances between the 5 factors from the final CFA model are displayed in Table 2.

Table 1 The results of the confirmatory factor analysis (ML estimation)

Factor solution	χ^2	df	CFI	RMSEA	SRMR	AIC
2-factor structure (Frost et al. 1993) (CM + DAA + PC + PE; PS + ORG)	5849.76	559	.58	.12	.13	6061.76
3-factor structure (Purdon et al. 1999) (CM + DAA; PC + PE; PS + ORG)	4123.58	557	.71	.10	.12	4339.58
4-factor structure (Stöber 1998) (CM + DAA; PC + PE; PS; ORG)	3349.36	554	.77	.09	.09	3501.36
6-factor structure (Frost et al. 1990; Gelabert et al. 2011) (CM; DAA; PC; PE; PS; ORG)	3063.63	545	.80	.08	.09	3233.63

Error terms were not allowed to correlate in the models

CM Concern over mistakes, DAA Doubts about actions, PC Parental criticism, PE Parental expectations, PS Personal standards, ORG Organization

Table 2 Covariances between factors from the five-factors solution

	CM	DAA	PC	PE	PS
CM	–	.50	.56	.52	.26
DAA		–	.32	.27	.13
PC			–	.83	.12
PE				–	.18
PS					–

All values were significant at $p < .001$

CM Concern over mistakes, DAA Doubts about actions, PC Parental criticism, PE Parental expectations, PS Personal standards

All of the subscales of the FMPS were positively related to each other. The strongest relationships could be observed between CM, DAA, PC and PE (r s from .27 to .83). Those four subscales were less correlated with PS (r s from .12 to .26). Generally speaking, the observed relationships remain in accord with the results of previous studies and support the theoretical validity of the adapted measure (Frost et al. 1990). In Table 3, standardized factor loadings for items within the five-factor solution, t -test values for the parameters and its statistical significance levels are presented.

Subscales Reliability and Correlations

First, all analyzed variables were screened for the presence of univariate outliers (the variables were standardized and individuals with values lower than -3.00 or higher than 3.00 were treated as outliers). As there were only two such individuals, with values very close to 3.00 , it was decided to continue with the whole sample. Reliability (Cronbach's alphas) of the dimensions of the FMPS was: CM .91, DAA .70, PC .84, PE .87, PS .78. The bivariate correlations between all analyzed dimensions are presented in Table 4.

CM, DAA, PC, and PE correlated positively and significantly with all other analyzed variables. In the case of PS those relationships were much weaker. Only in the case of worry and rumination there were observed small positive correlations with PS.

Unique Relationships between the FMPS Subscales and Other Constructs

In order to evaluate the specific relationship of the five perfectionism dimensions with the remaining variables, while simultaneously controlling for the common variance of perfectionistic strivings and perfectionistic concerns, multivariate regression analysis was applied. Before the regression analysis was performed the correlations of the analyzed variables with gender and age were tested. Gender was not correlated with any of the other analyzed dimensions, but age was negatively correlated with shame, guilt, worry, rumination, and

Table 3 Standardized factor loadings within the five-factor solution

Item number	Standardized factor loading	<i>t</i> value	<i>p</i>
CM subscale			
9	.73	16.01	< .001
10	.51	11.92	< .001
13	.71	17.89	< .001
14	.76	16.55	< .001
18	.63	16.01	< .001
21	.78	16.85	< .001
23	.83	17.55	< .001
25	.78	16.77	< .001
34	.72	15.68	< .001
DAA subscale			
17	.66	11.93	< .001
28	.66	13.61	< .001
32	.45	9.75	< .001
33	.56	11.93	< .001
PC subscale			
3	.66	16.69	< .001
5	.71	19.33	< .001
22	.74	16.94	< .001
35	.73	16.69	< .001
PE subscale			
1	.51	13.21	< .001
11	.76	13.21	< .001
15	.89	14.13	< .001
20	.78	15.29	< .001
26	.64	12.13	< .001
PS subscale			
4	.53	11.09	< .001
6	.59	11.19	< .001
12	.78	14.41	< .001
16	.29	6.61	< .001
19	.65	12.95	< .001
24	.61	12.39	< .001
30	.66	13.06	< .001

Items number 2, 7, 8, 27, 29, and 31 from the Organization subscale were not included in this analysis

CM Concern over mistakes, DAA Doubts about actions, PC Parental criticism, PE Parental expectations, PS Personal standards

indecisiveness. Taking this into account it was decided to control for the age of the participants in the regression models by entering this variable in the first step of the analysis. The five dimensions of the FMPS were then simultaneously entered to the analysis in the second step. Five separate hierarchical regression analyses were carried out, with shame, guilt, worry, rumination, and indecisiveness as dependent variables and the dimensions of perfectionism (and age) as predictors. The Variance Inflation Factors (VIF) for the predictors ranged

from 1.20 to 2.43 suggesting that there were no multicollinearity in the regression analyses (O'Brien 2007). The obtained results are presented in Table 5.

The CM and DAA dimensions turned out to be significant and the strongest predictors for all of the investigated variables. The results of the regression analysis showed that the PS scale was, uniquely, negatively related to all of the other analyzed variables. Also, when those three core dimensions of perfectionism, i.e. CM, DAA, and PS, were controlled for no relationship between the parents' critical attitudes and high expectations (PC and PE subscales) and the other constructs appeared. Only in the case of rumination there was observed a small positive relationship with parental criticism. Additional regression analyses with the ORG scale included were also performed in order to ascertain that removing this subscale did not lead to a loss of important information. Indeed, when the variance of the five other FMPS subscales were controlled for in the regression analysis the relationship between the ORG scale and all of the dependent variables (shame, guilt, worry, rumination, and indecisiveness) turned out to be insignificant.

Discussion

The presented study was dedicated to an evaluation of the psychometric parameters of the Polish adaptation of the *Frost Multidimensional Perfectionism Scale*. Particular attention was paid to the factorial validity of the measure and to the relationships between the FMPS dimensions and shame, guilt, worry, rumination, and indecisiveness, which are well-known correlates of perfectionism (Abdollahi et al. 2018; Burgess et al. 2018; Fleet et al. 2016; Hewitt et al. 2017; Khawaja and Armstrong 2005; Stoeber et al. 2007; Stöber and Joorman 2001; Stoeber and Otto 2006).

The Factor Structure of the Polish Adaptation of the FMPS

The results obtained with the Polish sample turned out to be comparable to those presented earlier by Frost et al. (1990) and by other researchers (Gelabert et al. 2011) and suggest that in the Polish adaptation the particular FMPS factors can be seen as relatively separate dimensions. However, a closer inspection of the results led to the conclusion that the ORG subscale was only slightly correlated with CM, DAA, PC and PE and that those correlations were negative. Also, the positive correlation of ORG with PS was only moderate. Similar results have previously been obtained (e.g. Amaral et al. 2013; Hawkins et al. 2006) and this could suggest that the ORG scale may measure characteristics that are related to perfectionism to some extent, but that it may not be a part of the perfectionism construct. This idea was earlier discussed by

Table 4 Descriptives and bivariate correlations between analysed variables

	<i>M</i>	<i>SD</i>	CM	DAA	PC	PE	PS	Shame	Guilt	Worry	Rumination	Indecisiveness
CM	2.63	.92	–	.63***	.50***	.44***	.39***	.57***	.49***	.60***	.44***	.47***
DAA	2.76	.83		–	.41***	.32***	.17***	.58***	.51***	.55***	.40***	.56***
PC	2.17	.99			–	.73***	.17***	.32***	.32***	.29***	.16***	.23***
PE	2.56	1.00				–	.21***	.25***	.25***	.27***	.19***	.17***
PS	3.40	.70					–	.01	.05	.11**	.08*	–.04
Shame	15.47	7.13						–	.74***	.66***	.49***	.56***
Guilt	10.01	4.31							–	.57***	.47***	.51***
Worry	39.01	11.21								–	.55***	.59***
Rumination	26.50	10.03									–	.53***
Indecisiveness	20.39	5.23										–

CM Concern over mistakes, DAA Doubts about actions, PC Parental criticism, PE Parental expectations, PS Personal standards

* $p < .05$, ** $p < .01$, *** $p < .001$

Stoeber and Otto (2006) who suggested that preference for organization and order may be a separate factor that is independent of strivings and concerns, the two core facets of perfectionism. As a result the ORG scale is often omitted by researchers (e.g. Stöber and Joorman 2001) who argue that the crucial part of the perfectionism construct are the standards that one has for oneself and not the degree to which one organizes the way tasks are executed. Our results may support this approach. The observed results may also suggest that the ORG subscale is not a reliable indicator because of its inconsistent (sometimes positive and sometimes negative) associations with the other factors. We suppose that the FMPS could be a better and more theoretically valid measure of perfectionism without the ORG scale. In studies on perfectionism the status of the ORG scale is unclear. Therefore, some researchers using FMPS decide to sum up the scores of the ORG and PS scales creating an indicator of perfectionistic strivings (Shih 2012) while others decide to include only PS and to avoid ORG (Smith et al. 2017). This can make it difficult to compare different studies, even those conducted on the same population.

Other studies that used confirmatory factor analysis to assess factor structure of the FMPS showed results similar to ours. However, its authors did not decide to assess the factor structure without ORG. Gelabert and colleagues (Gelabert et al. 2011), the authors of the Spanish adaptation, also compared three-, four-, and six-factor solutions and decided that the solution with six subscales was the best fitted. However, the fit indices for the six-factor solution were also below the acceptance level. Similar results were obtained by Cox, Enns et al. (2002). Possibly, in those cases and in our study, it was the ORG uncorrelated to most of the other subscales, that was responsible for the poor fit. We think that the existing studies do not convincingly support the significant role of the good organization and neatness as a part of the perfectionism construct. We therefore suggest that the FMPS needs some

revision. One of the aim of this may be to remove or revise the ORG scale. The other five subscales of the FMPS seem to be adequate for measuring perfectionistic concerns, perfectionistic strivings, and parental criticism.

However, this does not preclude the use of this subscale in future research focused on the importance of order and good organization. The ORG scale is still in use (e.g., Stoeber and Hotham 2016) and some researchers (e.g., Sironic and Reeve 2015) even propose that organization should be viewed as a potential core dimension of perfectionism. As a result, researchers must be aware that the removal of the ORG scale from the Polish adaptation of the FMPS may have implications regarding the representativeness of the instrument. On the other hand, in light of the problems with this indicator that are described in the literature (Stoeber and Otto 2006), and because of the lack of specific associations between the ORG subscale and the other dimensions measured in the present study, removing this subscale does not seem to be a great infringement.

The External Correlates of the FMPS Dimensions

Researchers have raised fewest objections to the scales CM, DAA, and PS, and they, as indicators of perfectionistic concerns (CM and DAA) and perfectionistic strivings (PS), have met with wide acceptance and are supported by extensive scientific literature (Stoeber and Otto 2006). The obtained results are in accordance with those observations. Higher levels of concerns over mistakes (CM) and doubts about actions (DAA) were related to experiencing shame and guilt more frequently, a higher level of worrying, greater proneness to ruminate, and higher indecisiveness. In turn, the dimension of personal standards (PS) turned out to be negatively related to all of these constructs, confirming that striving to achieve high standards can by itself potentially be an adaptive dimension. The presented results of the regression analysis as

Table 5 The results of the regression analyses

Predictor	Shame proneness β	Guilt proneness β	Worry β	Rumination β	Indecisiveness β
Step 1	Age -.27*** $R^2 = .07$ $F = 55.19^{***}$	-.18*** $R^2 = .03$ $F = 24.06^{***}$	-.30*** $R^2 = .09$ $F = 70.99^{***}$	-.30*** $R^2 = .09$ $F = 71.25^{***}$	-.27*** $R^2 = .08$ $F = 58.77^{***}$
Step 2	Age -.14*** CM .40*** DAA .33*** PC .06 PE -.05 PS -.21*** $R^2 = .46$ $F = 101.03^{***}$ $\Delta R^2 = .39$ $\Delta F = 102.16^{***}$	-.08* .29*** .31*** .08 -.02 -.13*** $R^2 = .32^{***}$ $F = 56.51^{***}$ $\Delta R^2 = .29$ $\Delta F = 60.92^{***}$	-.17*** .45*** .26*** -.01 .01 -.12*** $R^2 = .44^{***}$ $F = 92.22^{***}$ $\Delta R^2 = .35$ $\Delta F = 87.61^{***}$	-.19*** .35*** .19*** .10* .04 -.09** $R^2 = .27^{***}$ $F = 43.52^{***}$ $\Delta R^2 = .18$ $\Delta F = 34.53^{***}$	-.16*** .30*** .39*** .02 -.06 -.22*** $R^2 = .40^{***}$ $F = 78.25^{***}$ $\Delta R^2 = .32$ $\Delta F = 75.81^{***}$

In the table standardized beta coefficients are presented

CM Concern over mistakes, DAA Doubts about actions, PC Parental criticism, PE Parental expectations, PS Personal standards

* $p < .05$, ** $p < .01$, *** $p < .001$

regards the PS scale suggest the occurrence of the suppression effect mentioned by Stoeber and Damian (2016). In the Pearson's r correlation, when the common variance of the FMPS dimensions was not controlled for, this positive relationship between the PS scale and adjustment was almost not observed. However, when perfectionistic concerns were controlled for in the regression analysis the positive influence of the PS scale could come to the fore. Also, when CM, DAA, and PS, were controlled for the relationship between the parents' critical attitudes and high expectations (PC and PE subscales) and shame, guilt, worry, rumination, and indecisiveness did not appear. This supports the thesis that those dimensions are not a crucial part of the perfectionism construct, but rather act as a base for developing perfectionism during life (Enns et al. 2002). In general, the observed correlations are in line with the hypothesis and support the validity of the Polish adaptation of the FMPS.

Limitations and Further Research

First, the results that have been presented here come from a single study and should be confirmed in the future. Second, currently in Poland, to the best of our knowledge, there are no adaptations of other popular perfectionistic measures, e.g. HMPS (Hewitt and Flett 1991), that could be used here as a point of reference. In the only Polish original measure of perfectionism (Szcucka 2010), its author used some items from the initial FMPS scale, which disqualified this measure from the present study because of the overlap between both scales. In future studies some other existing perfectionism scales should be adapted in Poland, which would enable further testing of the validity of the Polish FMPS. Third, the sample included mainly women and although gender was not related to the analyzed constructs it has some negative impact on the generalization of the results. The dimensions of shame, guilt, worry, rumination, and indecisiveness in terms of the strength of their relationships with different dimensions of perfectionism were very similar to each other. This may suggest that the external correlates that have been chosen in this study were too homogeneous. It should be taken into account in planning future studies with the Polish adaptation of the FMPS.

Conclusion

To sum up, the Polish adaptation of the FMPS seems to possess both the positive and the negative qualities of Frost's questionnaire. It is certain, however, that a proper use of the FMPS will continue to enrich our knowledge on perfectionism. As a recommendation, it should be indicated that CM and DAA should be treated as indicators of perfectionistic concerns and PS as an indicator of perfectionistic strivings. Researchers should also be aware that the most meaningful results were obtained when the common variance of

perfectionistic strivings and concerns were controlled for. In line with the suggestions of Enns et al. (2002) and Stoeber and Otto (2006) the parental subscales (PC and PE) should not be seen as a crucial part of the trait of perfectionism, but rather as a context in which perfectionism develops. Also the use of the general score (the sum of all subscales) should be avoided or carefully used as perfectionistic strivings and concerns have a different impact on individual adjustment.

Data Availability The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Compliance with Ethical Standards

Conflict of Interest Konrad Piotrowski declares that he has no conflict of interest. Agnieszka Bojanowska declares that she has no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (the Polish Code of Professional Ethics for the Psychologist; Polish Psychological Association) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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