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#43 PAPER 58 - FACTOR STRUCTURE AND PSYCHOMETRIC PROPERTIES OF TWO SHORT VERSIONS OF FROST MULTIDIMENSIONAL PERFECTIONISM SCALE IN ROMANIA

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Abstract
The psychometric properties and factor structure of two brief versions of the original Frost Multidimensional Perfectionism Scale (FMPS-24andFMPS-R) were investigated using a Romanian sample (N=314). Confirmatory factor analysis yielded a four-factor solution for the FMPS-24 and a two-factor solution for the FMPS-R. Although an acceptable fit was found for both scales, the FMPS-R fit indices are slightly higher. Correlation patterns seem to sustain the distinction between functional and dysfunctional perfectionism. The implications of these findings are further discussed.
Keywords*: Frost Multdimensional Perfectionism Scale, confirmatory factor analyses, functional and dysfunctional perfectionism*

1. INTRODUCTION

The construct of perfectionism has been the subject of intense research in the last 10-15 years. It was first conceptualized as a unidimensional construct of pursuing excessively high standards that lead to psychological distress. Most importantly, perfectionists assess their self-worth in terms of reaching their faultless goals, but their urge to excel is could be self-defeating (Burns, 1980). More recently, researchers agree that the unidimensional conceptualization of perfectionism is overly simplistic, and it is more appropriate to view the construct as multidimensional (Frost, Marten, Lahart & Rosenblate, 199; Hewitt & Flett, 1991).

Hewitt & Flett (1991) argued that perfectionism has intrapersonal and interpersonal dimensions that could be broken into three components: *self-oriented perfectionism* (the tendency to set unrealistic personal standards and to critically evaluate one's behavior for not being perfect), *other-oriented perfectionism* (the tendency to set unrealistic standards for other people and to critically evaluate their behavior for not meeting them), and *socially-prescribed perfectionism* (the belief that significant others also hold high standards and if the person does not meet them he/she will be rejected). The authors also developed a multidimensional measure that supports their tripartite model of perfectionism.

The concurrent conceptualizations define perfectionism along six dimensions (Frost et al., 1990): 1) *concern over mistakes* (CM; an anxious tendency to interpret mistakes as failures and to consider that mistakes will cause loss of respect from others), 2) *doubts about actions* (DA; the tendency to question the quality of one's work as projects are not fully satisfactory), 3) *personal standards* (PS; the tendency to operate with very high standards and to be satisfied only when achieving one's best performance), 4) *parental expectations* (PE; the belief that one could never meet his/her parents' excessively high standards), 5) *parental criticism* (PC; the belief that parents are overly critical when their standards are not meet and feelings derived from falling short of their expectations), and 6) *organization* (O; an exaggerated emphasis on order, precision and organization). Frost and colleagues also proposed the *Multidimensional Perfectionism Scale* (FMPS, 35 items) now widely used in the literature (Frost et al., 1990).

To date, a number of studies investigated the psychometric proprieties of FMPS, demonstrating that the scale has a high internal consistency (both for the total score and for each subscale) and acceptable levels of discriminant and convergent validity (Amaral et al., 2013; Gelabert, García-Esteve, Martín-Santos, Gutiérrez, Torres & Subirà, 2011; Frost et al., 1990; Hawkins, Watt & Sinclair, 2006; Khawaja & Armstrong, 2005; Strober, 1998). All factor analytic studies suggest that FMPS is a multidimensional measure, but the most adequate factorial solution is still debated. Although the original paper suggested a six-factor solution (Frost et

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al., 1990) that was replicated in other cultures (Gelabert et al., 2011), a number of studies suggested that a four-factor solution is more parsimonious (Hawkins, Watt, & Sinclair, 2006; Khawaja & Armstrong, 2005; Strober, 1998). These latter studies criticized the factorial instability of the original six-factor solution which was presumably due to an "over-extraction of components" (Strober, 1998. p. 481) and generally collapsed the CM and DA items into one factor and the PE and PC items into another factor – hence the four-factor solution. Another debatable issue revolves around the organization factor that was first considered unrelated to the overall perfectionism due to its weak correlation with the other subscales (i.e., the O factor was excluded from the total perfectionism score, Frost et al., 1990), while other studies found a statistically significant relationship between O and PS (r = .33), therefore supporting the retention of the O subscale as part of the total score (Hawkins, Watt & Sinclair, 2006).

Finally, Khawaja & Armstrong (2005) proposed two shorter versions for the FMPS by identifying and retaining a subgroup of items with minimal cross-loadings (namely FMPS-24 and FMPS-R). The factor structure of FMPS-24 (24-items) group the original six dimensions into only four dimensions (CM & DA, PS, PE &PC, and ORG) while the FMPS-R (17-items) highlights only two dimensions of perfectionism: functional and dysfunctional. Both scales appear to be psychometrically sound (Khawaja & Armstrong, 2005).

Although a number of reliable self-report measures for perfectionism are available in the literature, no psychometric study has been published using Romanian adult participants. Therefore, in the present study we investigated the psychometric proprieties of two short versions of the FMPS (i.e., FMPS-24 and FMPS-R). More precisely, we investigated whether the previously proposed factor structure could also be found in a Romanian sample by conducting a confirmatory factor analyses. The brief versions of the FMPS were selected because it was demonstrated that they retain the psychometric proprieties of the original scale (Khawaja & Armstrong, 2005) and at the same time they represent two parsimonious and effective measures.

2. METHOD

2.1. Participants

A convenience sample of 314 adult participants (32% male), with a mean age 28.77 years (SD=10.94) was used for this study. All instruments were administered online, after participants expressed their agreement to participate in the study.

2.2. Instruments

Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). FMPS is a 35-items questionnaire, with responses scored on a 5-point Likert scale, from strongly disagree (1) to strongly agree (5). FMPS measures six dimensions of perfectionism: Concern over Mistakes (CM), Doubts about Actions (DA), Personal Standards (PS), Parental prospect (PE), Parental Criticism (PC), and Organization (ORG). The FMPS was first translated into Romanian, than another specialist conducted the back translation and the eventual differences were discussed by the authors until everyone endorsed all items. In our analyses we used a subset of the 35-items FMPS, namely the 24 items of theFMPS-24 and the 17 items of the FMPS-R (Khawaja & Armstrong, 2005). The FMPS was completed by all participants (N= 314).

Perfectionism Scale of the *Eating Disorder Inventory-3* (EDI-3-PE; Garner, Olmsted & Polivy, 1983) consists of six items rated on a 6-point Likert scale, ranging from 1 (Always) to 6 (Never). Lower scores on this scale indicate a high level of perfectionism. The EDI-3-PE showed good reliability in our sample (α=.77). The EDI-3-PE was completed by a subset of participants (N= 85).

3. RESULTS

The present study investigated the factor structure of the FMPS-24 and the FMPS-R using confirmatory factor analysis (CFA). Although an acceptable fit was found for both measures (see Table 1), a better fit for the FMPS-R model was obtained (GFI=.88; AGFI=.85; CFI=.91; RMSEA=.079). According to this latter model perfectionism could be divided in two factors: functional and dysfunctional perfectionism.

Table 3. Goodness of fit index for alternate models of FMPS

Pattern	χ^2	GFI	AGFI	CFI	RMSEA
FMPS-24	$\chi^2(246)=807.27$, p<.001	.81	.77	.81	.085 (.079-.092)
FMPS-R	$\chi^2(115)=338.16$,p<.001	.88	.85	.91	.079(.069-.089)

Note. N= 314. Confidence intervals for RMSEA are presented between brackets

Regarding the convergent validity of the FMPS, Table 2 presents the correlations between the FMPS-24 subscales, FMPS-R subscales and a well known *Perfectionism Scale* of the *Eating Disorder Inventory-3.* Interestingly, perfectionism measured by EDI-3-PE is strongly associated with the Dysfunctional Perfectionism scale of the FMPS-R $r(84)=.57$, $p<.01$, and not associated with Functional perfectionism $r(84)=.12$, $p>.05$. As for the four dimensions of the FMPS-24, all factors except Organization are strongly correlated with EDI-3-PE.

Table 4. Correlations of FMPS scales with EDI-3-PE and reliability of FMPS scales

FMPS scales	r (EDI-3-PE)	α
Functional Perfectionism	.12	.88
Dysfunctional Perfectionism	.57**	.88
CMDA – FMPS24	.48**	.87
PS – FMPS24	.38**	.66
PEPC – FMPS24	.58**	.80
ORG – FMPS24	.06	.81

Note. N=86; CMDA-FMPS24 = Concern over mistakes and doubts about actions from FMPS24; PS-FMPS24 = Personal standards from FMPS24; PEPC-FMPS24 = Parental expectations and Parental criticism from FMPS24; ORG-FMPS24 = Organization from FMPS24; ** p<.01; * p<.05 (one-tailed)

Figure 1 shows the FMPS-R with standardized factor loadings ranging from .23 to .86. Except for item 12, all standardized loadings have absolute values higher than .30, which represent an accepted cut-off value for considering the item relevant for that particular factor (Sava, 2011). The median value of the standardized factor loadings is .69, indicating strong relations between items and their assigned factors. Three additional constraints were added to the model, significantly improving the model fit index ($\Delta\chi^2(3)=98{,}18$, $p<.001$). Overall, our results suggest an acceptable fit for the FMPS-R on a Romanian sample. The correlation between functional and dysfunctional perfectionism is not significant $r(312)=.01$, $p=.85$, suggesting that the two factors represent distinct constructs.

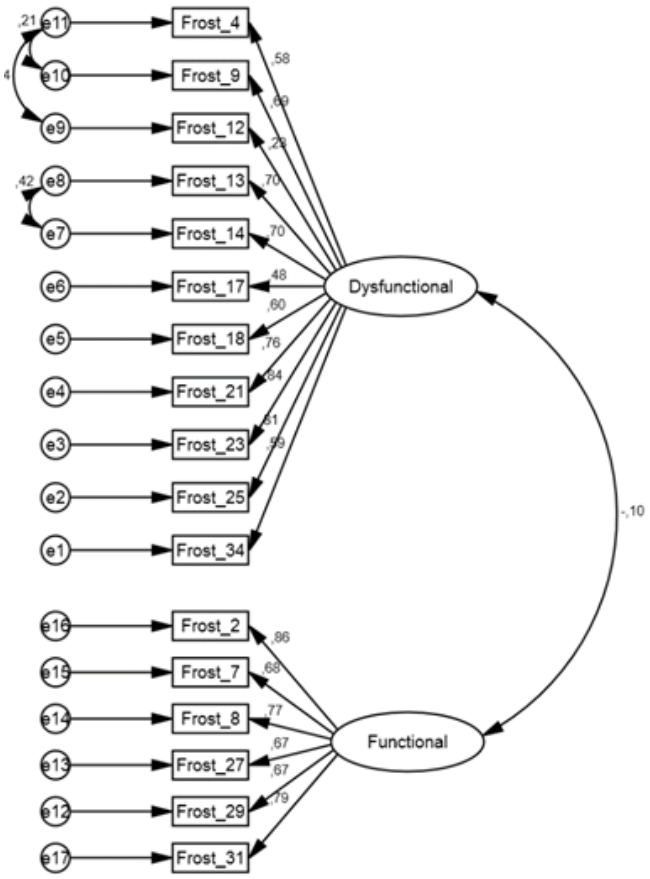

Figure 1. Configuration and standardised loadings for the FMPS-R. Number of each item corresponds to the FMPS original version of the scale.

4. DISCUSSION

The aim of the present study was to investigate the psychometric properties of two short versions of the Romanian *Frost Multidimensional Perfectionism Scale*. The FMPS-24 showed acceptable configural invariance and good reliability estimates. Except for Organization, all dimensions of FMPS-24 were positively associated with the Perfectionism subscale of EDI-3. However, the FMPS-R showed a better configural invariance in our adult sample, as well as good reliably estimates (α=.88 for both scales). The distinction between functional and dysfunctional perfectionism was also sustained by the correlation patterns with EDI-3-PE. In EDI-3 perfectionism is conceptualized as a psychological disturbance factor related to eating disorders and explains the positive association with dysfunctional perfectionism, and the lack of an association with functional perfectionism (Clausen, Rosenvinge, Friborg & Rokkedal, 2011).

Previous literature reviews argued that perfectionism is associated with a broad range of disorders (i.e., depression, social anxiety, obsessive-compulsive and eating disorders) being considered a transdiagnostic process that contribute to both the development and maintenance of these disorders (Shafran & Mansell, 2001; Eagan, Wade & Shafran, 2011). Perfectionism is not only common across a broad range of psychopathology, but it also hinders therapeutic gains in patients who never seem satisfied with therapy and/or with their progress in therapy (Eagan, Wade, Safran & Antony, 2014). Shafran and Mansell also argued that there is an inverse relationship between perfectionism and treatment satisfaction (Shafran & Mansell, 2001). Moreover, it was recently suggested in a meta-analytic study that psychological interventions explicitly targeting perfectionism have the potential to reduce some dimensions of dysfunctional perfectionism in individuals with clinical disorders (Lloyd, Schmidt, Khondoker & Tchanturia, 2014).

Considering the new evidence regarding the important role of perfectionism in psychopathology, it seems reasonable to make sure that effective and parsimonious instruments allows us to adequately measure the construct in various cultures. Our results suggest that the two brief measures of perfectionism (FMPS-24 and FMPS-R) could be reliably used in Romania for both research and practice. However, the FMPS-R represents a slightly better solution, especially when functional and dysfunctional perfectionism represent relevant constructs. Future studies should include a clinical sample (preferably with various disorders) in order to further explore the validity and factor structure of the FMPS.

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Note: The Romanian version for the Frost Multidimensional Perfectionism Scale is available upon request from the authors.

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