



# A different view to perfectionism: An investigation of the psychometric properties of the big three perfectionism scale in a Turkish community sample

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## Abstract

Among the various instruments used in literature, the Big Three Perfectionism Scale (BTPS) is designed to meet the need for a comprehensive and current tool for the measurement of perfectionism and the assessment of personal tendencies. The present study adapts and examines the psychometric properties of the Turkish versions of both the BTPS-45 and BTPS-16, based on the responses of 427 Turkish community adults who were recruited for the purpose. All of the respondents were assessed with the two popular perfectionism scales, and for dark personality features and psychological problems, while 109 re-completed the BTPS-45 and BTPS-16 scales for the evaluation of test-retest reliability 2 weeks later. The results of the confirmatory factor analysis conducted to test the various models with different factor structures showed that the models comprising the three main and 10 sub-dimensions of the BTPS-45 and three main dimensions of the BTPS-16 showed the best fit. The significant relationships found between the BTPS factors, the scores recorded from the other perfectionism scale, the dark triad and the psychopathology symptoms all supported the validity of both the BTPS-45 and the BTPS-16. The findings further indicated that the structures of these forms had acceptable internal consistency and demonstrated satisfactory test-retest reliability. The reliability and validity of the Turkish versions of the long and short forms of the BTPS were thus established, supporting their use in further empirical studies and psychological interventions.

**Keywords** Big three perfectionism scale · Perfectionism · Reliability · Validity · Psychometric properties

The concept of perfectionism, defined as “the multidimensional personality tendency described by striving for perfection, critically evaluating a person’s behavior and keeping the performance standards excessively high” (Stoeber, 2018, p. 3), has gained popularity in psychology literature in recent years. Although it was first considered to be a unidimensional concept, involving egocentric definitions and standards and cognitive evaluations (e.g. Burns, 1980), perfectionism is today viewed as a multidimensional construct, and is evaluated in studies and clinical applications based mostly on the Multidimensional Perfectionism Scale (F-MPS) developed

by Frost, Marten, Lahart, and Rosenblate (1990) and the Multidimensional Perfectionism Scale (HF-MPS) of Hewitt and Flett (1991b) (Flett & Hewitt, 2015). Aside from these, there are other studies (e.g. Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000) that assess perfectionism according to two higher level factors, being *personal standards perfectionism*, referring to the setting of high standards and goals, and *evaluative concerns perfectionism*, referring to the over-critical evaluation of one’s behavior, the inability to draw satisfaction from successful performance, and the concerns of individuals about the criticisms and expectations of others. It would seem, then, that these two salient features of perfectionism are already represented in these two popular measures, but in a highly disorganized manner. It has been further argued that these measures are limited in their utility in terms of their scope, the inconsistent factor numbers and factor-item distributions, the overlapping of the meanings of some items, and the presence of second-order manifestations in some perfectionism dimensions, such as those on parenting (Flett & Hewitt, 2015; Stoeber & Madigan, 2016). In Smith, Saklofske, Stoeber, and Sherry’s (2016) extensive review of

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literature, a number of common factors in the existing perfectionism instruments were identified that led them to develop the wide-ranging Big Three Perfectionism Scale (BTPS-45). The BTPS-45 is a comprehensive self-reporting tool consisting of 45 items, with three higher-order global factors (rigid perfectionism, self-critical perfectionism and narcissistic perfectionism) and 10 lower-order perfectionism facets (self-oriented perfectionism, self-worth contingencies, concern over mistakes, doubts about actions, self-criticism, socially prescribed perfectionism, hypercriticism, other-oriented perfectionism, entitlement, grandiosity). The scale was subsequently adapted by Feher et al. (2020) into the 16-item short form BTPS-16 – a more practical and time-saving tool. Feher’s study involving a sample of university students in which the three higher order factors in the original form (rigid, self-critical and narcissistic perfectionism) were maintained, confirmed the validity and reliability of the BTPS-16.

In many studies addressing this issue to date, perfectionist personality tendencies have been associated with such psychopathologies as major depressive disorder (Hewitt & Flett, 1991a), obsessive-compulsive disorder (Rhéaume et al. 2000), panic disorder (Antony, Purdon, Huta, & Swinson, 1998), eating disorders (Fairburn, Cooper, & Shafran, 2003) and different personality disorders, particularly narcissistic personality disorder (Smith et al., 2016). In the presence of common overlapping tendencies and critical factors associated with different psychological problems, the transdiagnostic approach in particular has become a more meaningful indicator of comorbidities (Harvey, Watkins, Mansell, & Shafran, 2004). Egan, Wade, and Shafran (2011) suggested that perfectionism was a candidate transdiagnostic risk factor for many mental problems, and that a person’s perfectionist traits could contribute to the continuity of their psychopathology, along with discordant beliefs about the self as a maintaining factor (Bieling, Israeli, & Antony, 2004; Egan et al., 2011). Indeed, beyond the efforts to guide diagnoses, there have been a number of empirical studies analyzing psychological interventions in which the focus is on perfectionism that can be considered particularly effective (e.g., Riley, Lee, Cooper, Fairburn, & Shafran, 2007). In this regard, the development and adaptation of instruments such as the BTPS for the measurement of perfectionism should be considered important in terms of their ability to throw light on the formation and continuation of different psychopathologies. Although developed only recently, the BTPS-45 has attracted considerable attention, with several studies in different languages making use of its psychometric properties (e.g., Persian, Italian and Chinese), and others analyzing its various versions (e.g. Besharat & Atari, 2017, Duan, He, Huang, & Sheng, 2019, Di Fabio et al. 2018). A review of literature revealed that the BTPS-45 – which can be referred to as the long form of the scale – has already been adapted into Turkish by Kilmen and Arikan (2020), although they made only a limited investigation of the

psychometric properties of a direct translation of the scale (i.e. only the original version of the form was tested, for which factor and reliability analyses had been carried out). As such, there has, as yet, been no empirical study aimed at determining the validity and reliability of the Turkish form of the BTPS-16, and it is the main purpose of the present study to adapt both the BTPS-45 and BTPS-16 into Turkish, and to make a comprehensive analysis of their psychometric properties through an examination of their structure and concurrent validity, along with their internal consistency and test-retest reliability. With the confirmation of the reliability and validity of the Turkish versions of these two forms, researchers will have access to an alternative tool for the self-reported measurement of perfectionism that is both more comprehensive and current, and furthermore, unblemished. The findings related to perfectionism in the Turkish context will contribute to international perfectionism literature, while practitioners will be able to make use of these scales with their clients in line with the targeted goal of their clinical applications.

## Method

### Participants

A total of 427 adults (75% female) aged 18–61 (average age 28.69 [*SD*: 10.20]), were enrolled for the study. Most (69%) were single and almost half (45%) were high school graduates. Of the total, 90% reported having no psychiatric disease (psychiatric diagnosis). General information on the participants was garnered via a Personal Information Form prepared by the researchers.

### Measurement Tools

**Big Three Perfectionism Scale (BTPS-45)** Smith et al. (2016) developed the BTPS-45 for the evaluation of different dimensions of perfectionism. The scale uses 45 items to measure three big perfectionism dimensions, with three higher-order global factors (rigid perfectionism, self-critical perfectionism, narcissistic perfectionism) and 10 lower-order facets (self-oriented perfectionism, self-worth contingencies, concern over mistakes, doubts about actions, self-criticism, socially prescribed perfectionism, hypercriticism, other-oriented perfectionism, entitlement, grandiosity). After providing general information about the study and brief instructions, the participants were asked to rate each item on a 5-point Likert-type scale ranging from 1 “strongly disagree” to 5 “strongly agree”. An analysis of the validity and reliability of the findings of the original study revealed Cronbach’s alpha internal consistency coefficients in the .92–.96 range, while the internal consistency coefficients of the sub-dimensions ranged from .79 to .90. In their study, the authors carried out exploratory and

confirmatory factor analyses, as well as validity analyses of separate samples, revealing positive and significant correlation coefficients between the dimensions of the BTPS and the previously developed multidimensional perfectionism dimensions (i.e. F-MPS and HF-MPS). An examination of the relationships with personality traits revealed significant relationships between the neuroticism of the Five-Factor Personality Inventory (Costa & McCrae, 2008) and the 12 dimensions of the BTPS-45, but not grandiosity.

**Big Three Perfectionism Scale-Short Form (BTPS-16)** Feher et al. (2020) revised the long form of the BTPS-45 into the 16-item short form in study involving a student sample. An analysis of the original three-factor model reveals an acceptable fit and confirms the structure validity of the model. The short form has been positively and significantly correlated with several psychological correlates, such as depression, anxiety, stress, some personality traits (e.g., conscientiousness, emotionality, openness to experience, agreeableness, extraversion) and subjective well-being, as expected way. The authors reported satisfactory internal consistency coefficients in the rigid, self-critical and narcissistic factors (i.e., ranging from .78 to .90), as well as high test retest reliability coefficients (i.e., .79, .75 and .71 respectively).

**Frost Multidimensional Perfectionism Scale (F-MPS)** Frost et al. (1990) designed the F-MPS for the multi-dimensional evaluation of perfectionism, comprising 35 items that are assessed on a 5-point scale, based on six factors: organization, concern over mistakes, doubts about actions, parental expectations, parental criticisms and personal standards, with the total perfectionism score being the sum of the scores of these factors. In the original study, the internal consistency coefficients of these factors ranged from .77 to .93, while its relationship with other perfectionism scales was in the expected direction, further indicating the validity of the scale. The scale has been adapted into Turkish by Özbay and Mısırlı-Taşdemir (2003) and Kağan (2011). In the Turkish version of the scale, the six-factor structure was verified with acceptable reliability values (ranging from .61 to .87) that were equivalent to those in the original study. Also, the significant correlation coefficients between the F-MPS scores and anxiety, psychological distress and some faulty schemas were presented for the proof of validity of the scale. In the present study, the F-MPS was used to evaluate the validity of the long and short forms of the BTPS.

**Dark Triad Dirty Dozen (DTDD)** Jonason and Webster (2010) developed the DTDD, which consists of 12 items in three dimensions, namely machiavellianism, psychopathy and narcissism. The original form of the scale allows the calculation of both these three dimensions and the total score. The Turkish validity-reliability study of the scale was carried out by Özsoy,

Rauthmann, Jonason, and Ardiç (2017), who reported that the Turkish form was usable in three dimensions, and that it has satisfactory levels of reliability (internal consistency coefficients ranging from .71 to .87) and validity (e.g., significant relationships with structure validity as well as life satisfaction, narcissistic personality and aggression). Its inclusion in the present study is based on its ability to assess the validity of the Turkish BTPS forms.

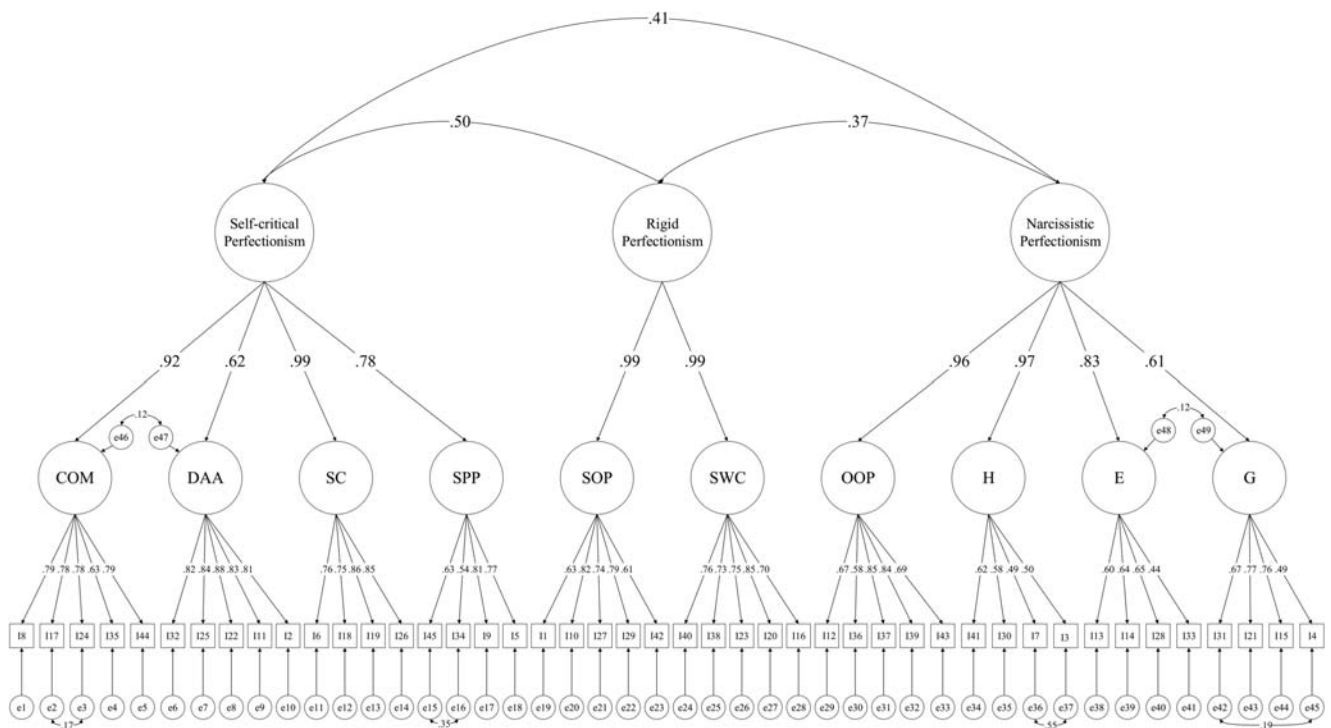
#### **DSM-5 Level 1 Cross-Cutting Symptom Scale (DSM-5 CSS)**

Narrow et al. (2013) developed the DSM-5 CSS for the evaluation of the severity of general psychiatric symptoms based on the DSM-5 criteria. This self-reported 5-point Likert-type scale comprises 23 questions, and the respondents are asked to consider the previous two weeks when recording their symptoms in 13 sub-areas, including depression, anger, mania, anxiety, somatization, suicidal ideation, psychosis, sleep problems, memory, repetitive thoughts and behaviors, dissociation, personality problems and substance use (i.e., in parallel with the diagnostic categories in DSM-5). Çökmüş, Balıkcı, and Aydemir (2017) adapted the scale into Turkish, and assessed the validity and reliability of the new scale, reporting a three-factor structure for scale (i.e., neurosis, psychosis and substance use), and internal consistency for each item of the scale ranging from .45 to .95. Furthermore, the 13 sub-areas targeted by the scale were found to have significant correlations with other symptom screening scales, while the retest correlation coefficients of these scales were at satisfactory levels.

#### **Procedure**

Prior to the adaptation of the BTPS, we first obtained permission from the primary author of the article that originally introduced the scale, and then applied to the ethics committee for permission to carry out the study (Ege University Research and Publication Ethics Committees, *decision date*: 28.02.2019, *protocol no*: 163). Following a translation-back translation approach, we translated the items of the BTPS into Turkish, after which six psychologists who speak both languages evaluated the translated text for clarity and equivalence. Following these evaluations, we reviewed and corrected the items, and two other experts (i.e., a psychologist, who studied for their doctorate in the United Kingdom, and a lecturer of English Language and Literature) back translated the items into the original language. After the back-translation process, we reviewed the similarity of the items to the originals, and after making some adjustments, we arranged the scale into its final form and launched the data collection phase.

For reasons of practicality, general influence, and the area of interest being a very specific concept of perfectionism, we opted for a convenience sampling method for the collection of data in the study. To facilitate participation, both online data



**Fig. 1** Factor Structure of the BTPS-45. *Note.* COM: Concern over mistakes, DAA: Doubts about action, SC: Self-criticism, SPP: Socially-prescribed perfectionism, SOP: Self-oriented perfectionism, SWC: Self-worth contingencies, OOP: Other-oriented perfectionism, H: Hypercriticism, E: Entitlement, G: Grandiosity

collection methods and paper and pencil questionnaires were used for recruitment, and the volunteers who provided their informed consent for their participation in the study filled out the questionnaires, either manually or online, which took around 25 min. For the evaluation of test-retest reliability, 109 volunteers re-completed instruments online once again, 2 weeks after the initial application. It should be stated at this point that the group comparison<sup>1</sup> analyses revealed the main and retest samples to be no different to the main variables in terms of gender distribution, marital status, education level and age distribution, indicating the representativeness of the retest sample.

## Results

### Factor Structure of the BTPS

While evaluating the validity of the 45-item and 16-item long and short forms of the BTPS, the primary intention was to examine the factor structure, for which a series of Confirmatory Factor Analyses (CFA) were carried out using

<sup>1</sup> Chi-square analyses were used for categorical variables, while a Mann Whitney U-test was used to identify the age distribution between the main and the retest samples, since the normality assumption for age in the retest sample was violated. The results revealed no significant difference between the main (*Mdn* = 24.5) and retest samples (*Mdn* = 24) in terms of age distribution (*p* > .05).

AMOS 21.0 (Arbuckle, 2012) software. The validity of the constructs of the long and short forms of the scale were thus tested. First, the four models tested by Smith et al. (2016) in the original study for the long form were tested using the alternative models strategy. In Model 1, tested as first-order, all of the items were connected to the 10 factors to which they were thought to belong, while the other models were second order. In Model 2, the factors were loaded onto a single factor, and were loaded onto two higher-order factors in Model 3. Model 4 consisted of 10 facets and three higher-order factors for the testing of the original structure of the scale. In this model, the errors of some items were correlated with each other in order to improve the fit indices, while no error correlations were made in the other models. The models tested in the original study (Feher et al., 2020) were then tested for the short-form BTPS-16. These models included 16 items of the scale that were attributed to various factors, and excluded the 10 facets. In Model 5, referred to as the Continuation model, all the items were loaded onto a single factor, while Model 6 was the only two-factor model. Finally, Model 7 was the model in which the long form BTPS was used (Fig. 1).

Before presenting the model test results for the BTPS-45 and BTPS-16, it will be useful to mention briefly the fit indices taken as the basis for the reporting of the CFA results, being Chi-square and degrees of freedom (ratio < 2.5 and below good, < 5 acceptable), RMSEA (Root Mean Square Error of Approximation; < .6 and below good, < .10 acceptable), CFI (Comparative Fit Index; > .95 good, > .90 acceptable), SRMR

(Standardized Root Mean Square Residual, <.08 acceptable) and AIC (Akaike Information Criterion, in which a low value is better in comparison) (Hu & Bentler, 1999; Kline, 2016; Thompson, 2004). As can be seen in Table 1, in which the CFA results are presented, although all models seem acceptable for the long form of the scale, the best model was Model 4, in which the original factor structure was tested. Considering the Chi-square difference test results, the AIC, RMSEA, and the ratio of the Chi-square value to the degrees of freedom, the 10-facet and 3-factor model is the best model for BTPS-45. Furthermore, Model 7 had the best fit indexes for BTPS-16 (see Table 1). In contrast, it can be seen that the single-factor and two-factor models did not fit well. The three-factor model (Model 7) had good fit indices, as was the case with the long form of the scale. Accordingly, based on the Chi-square difference test results, Model 7 can be considered superior to the other models. This model is also presented in Fig. 2.

**Reliability Results of BTPS**

The reliability results of the BTPS-45 and the BTPS-16 scores produced by the CFAs, as well as the test-retest correlation coefficients, were examined, and the results are presented in Table 2. Cronbach’s alpha values of the BTPS facets ranged from .68 to .92, with specific values for rigid, self-critical and narcissistic perfectionisms being .92, .94 and .89, respectively. Pearson’s correlation coefficients obtained from the test-retest results of the 109 individuals in the sample following a 2-week interval also gave satisfactory results supporting the reliability of the scale. The internal consistency and test-retest correlation coefficients calculated for the short form showed

that the reliability of the 16-item version of the scale was sufficient.

**Concurrent and Incremental Validity Results of BTPS**

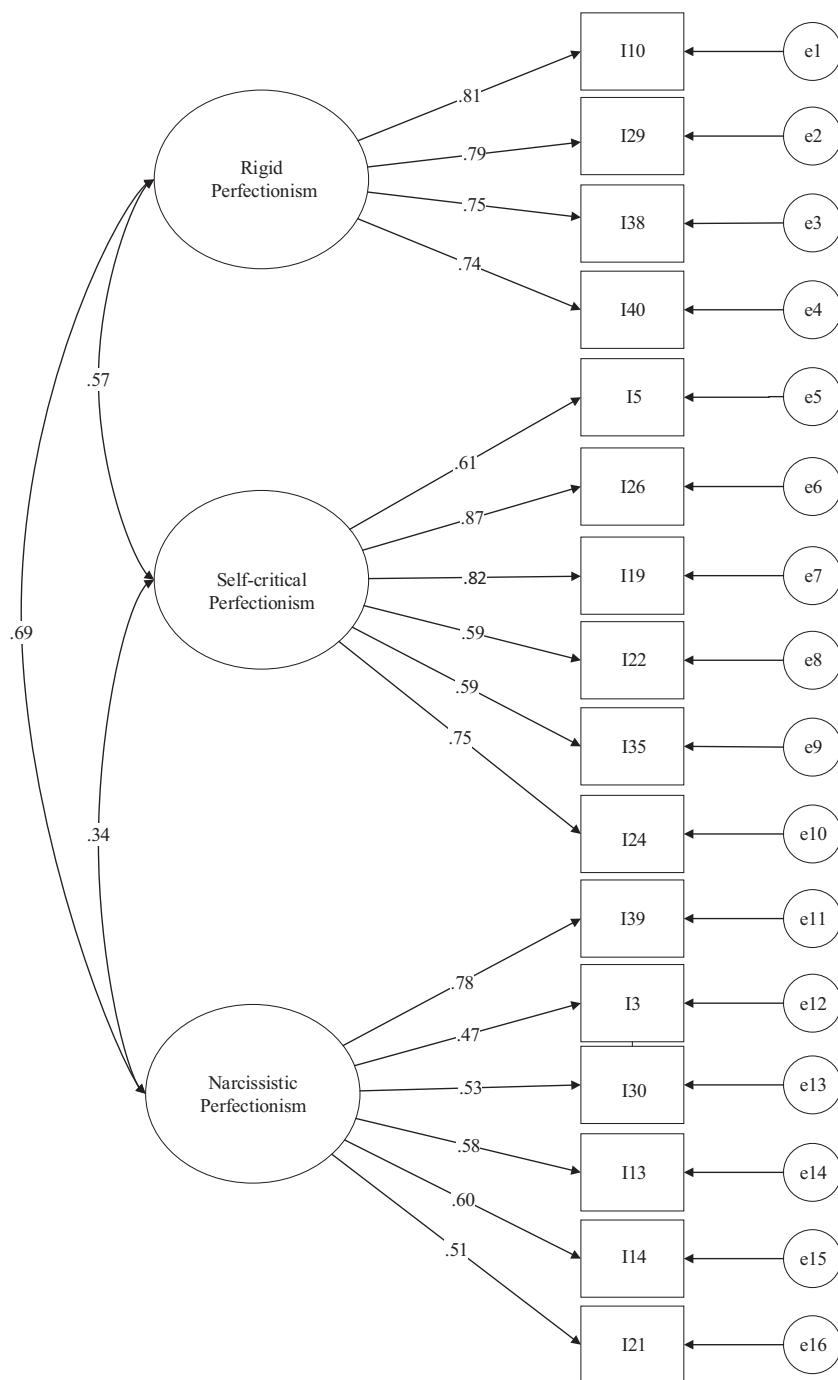
Pearson correlation analyses were performed to test the concurrent validity of the BTPS-45 and BTPS-16, and the relationships among the BTPS factors, the F-MPS and DSM-5 CSS are presented in Table 3. In general, both the 10 facets and the big three of the BTPS-45 were seen to be strongly correlated with F-MPS. For example, rigid perfectionism, self-critical perfectionism and narcissistic perfectionism were positively correlated with the total F-MPS score. The expected relationships between some of the F-MPS factors (concern over mistakes, personal standards and doubts about actions) and the three higher-order factors of the BTPS-45 were remarkable, and similar findings were observed also in the BTPS-16. It was noted that the big three perfectionisms obtained from the short form were significantly correlated with both the total score and the factors of the F-MPS, while a moderate relationship was noted to exist between narcissistic perfectionism and the narcissism factor of DTDD. To assess the relationships between BTPS and mental problems, both the three total scores and the 13 symptoms scores of DSM-5 CSS were investigated. The results revealed the BTPS facets to be closely related to many symptoms, and when examined in more detail, the perfectionism dimensions were relatively correlated with depression, anxiety, OCD and personality problems. It is noted that the single aspect of the big three that was best correlated with psychological symptoms was self-critical perfectionism. In contrast, the BTPS scores displayed no significant relationship with psychotic symptoms and substance use in general.

**Table 1** The CFA results of the long and short forms of the BTPS

	$\chi^2$	df	$\chi^2/df$	RMSEA [% 90 CI]	CFI	SRMR	AIC	$\Delta M$	$\Delta df$	$\Delta \chi^2$
<b>BTPS-45</b>										
Model 1	2368.68	900	2.63	.06 [.059–.065]	.88	.06	2638.68			
Model 2	2911.85	935	3.11	.07 [.068–.073]	.84	.09	3111.85	1–2	35	543.17
Model 3	2890.22	934	3.09	.07 [.067–.073]	.88	.09	3092.22	1–3	34	521.54
								2–3	1	21.63
Model 4	2265.30	926	2.45	.06 [.055–.061]	.89	.06	2483.30	1–4	26	103.38
								2–4	9	646.55
								3–4	8	624.92
<b>BTPS-16</b>										
Model 5	545.11	104	5.24	.10 [.092–.108]	.86	.07	609.11			
Model 6	400.56	103	3.89	.08 [.074–.091]	.90	.06	466.56	5–6	1	144.55
Model 7	297.60	101	2.95	.07 [.059–.077]	.93	.05	367.60	5–7	3	247.51
								6–7	2	102.96

All  $\chi^2$  values are significant at  $p < .001$

**Fig. 2** Factor Structure of the BTPS-16. *Note.* Item numbers mirror those in the BTPS-45



To test the incremental validity of the BTPS above other measures in predicting psychological symptoms, a series of hierarchical linear regression analyses were conducted in which the DSM-5 CSS scores (i.e., neurosis, psychosis and substance use) were treated as separate dependent variables, and the additional value of the BTPS was tested by entering it after the FMPS and DTDD. First, the results indicating the incremental utilities of the big three perfectionism scores from the BTPS beyond the F-MPS total score showed that the F-MPS significantly predicted the neurosis, psychosis and

substance use dimensions of the DSM-5 CSS in the initial steps. More importantly, the BTPS contributed significantly to the variance in the two general symptom categories in the second steps, being rigid perfectionism and self-critical perfectionism for neurosis, and self-critical perfectionism and narcissistic perfectionism for psychosis. The explained variances for the BTPS were 2 and 3% respectively in these regression analyses (see Table 4). In addition, the regression analysis of the additional contributions made by the BTPS beyond the dark triad scores showed that the narcissism

**Table 2** The Cronbach alpha coefficients and test-retest correlation coefficients of the two forms of the BTPS

Sub-scales	$\alpha$ ( $N = 427$ )	Test-retest $r$ ( $N = 109$ )		
1. Self-oriented perfectionism-SOP	.84	.85		
2. Self-worth contingencies-SWC	.87	.81		
3. Concern over mistakes-COM	.88	.83		
4. Doubts about action-DAA	.92	.85		
5. Self-criticism-SC	.88	.85		
6. Socially-prescribed perfectionism-SPP	.81	.85		
7. Other-oriented perfectionism-OOP	.84	.82		
8. Hypercriticism-H	.70	.74		
9. Entitlement-E	.68	.76		
10. Grandiosity-G	.78	.76		
Rigid Perfectionism-RP	.92	<b>.85</b>	.85	<b>.80</b>
Self-critical Perfectionism-SCP	.94	<b>.86</b>	.90	<b>.87</b>
Narcissistic Perfectionism-NC	.89	<b>.75</b>	.83	<b>.79</b>

All test-retest correlation coefficients are significant at  $p < .001$

Bold values represent the coefficients of the BTPS-16

dimension in dark triads significantly predicted three symptom categories, while the BTPS still contributed to the variance of a general symptom score. That is to say, among the different dimensions of the BTPS, self-critical perfectionism was found to be a significant predictor of neurosis. That said, the results of the second steps in the regression analyses gave the impression that although they did not reach statistical significance, some dimensions of the BTPS had potentials also for substance use. In conclusion, these results indicate the incremental utility of the BTPS as a tool for the prediction of psychological symptom levels, over and above the other associated measurements.

## Discussion

The multidimensional nature of perfectionism is associated with many psychopathologies, and is considered a transdiagnostic factor, as has been emphasized in many studies in recent years. Smith et al. (2016) brought a new perspective to the most frequently used tools for the multidimensional evaluation of perfectionism, introducing the BTPS-45 as a sufficiently valid and reliable measurement tool for the comprehensive evaluation of perfectionism in three higher-order factors and 10 lower-order facets. The primary aim in the present study was to adapt the BTPS-45 into Turkish and to evaluate its validity and reliability. As a further aim of the study, we examined the psychometric properties of the 16-item short form of the BTPS created by Feher et al. (2020), with a view to including it in Turkish literature. To this end,

several analyses were conducted assessing the structure, concurrent and incremental validity, and test-retest reliability of the scale based on data collected from an adult sample.

We conducted confirmatory factor analyses of the Turkish BTPS-45 and BTPS-16 using an alternative models strategy, considering the original structures of these forms. While three higher-order and 10 lower-order factors were verified in the long form, the model with only three higher-order factors showed the best fit for the short form, as in the original model. While all goodness of fit indices were acceptable for the BTPS-16, the CFI value, which is frequently referenced in literature, was just below the acceptable values for the BTPS-45. Hu and Bentler (1999) recommend the use of CFI and SRMR values for small samples, and the use of the RMSEA value for evaluations of goodness of fit of large samples. In the present study, it can be said that sufficient fit indices were obtained for both forms, without the removal of any items, and comparisons with the results of other models helped reveal the best model.

The reliability analyses revealed the BTPS-45 to have high reliability in all factors, aside from the three facets of hypercriticism, entitlement and grandiosity, which had sufficient reliability. Likewise, there was generally a high level of internal consistency for all of the big three perfectionism dimensions in the BTPS-16. The test-retest reliability was also found to be quite good for both the long and short forms, with values that can be said to be very similar to those in the original studies (Feher et al., 2020; Smith et al., 2016).

The results of a Pearson correlation analysis, based on F-MPS, DTDD and DSM-5 CSS, revealed that the positive relationships between the factors of the two forms of the BTPS supported the concurrent validity of the Turkish version. Furthermore, the findings obtained from the analyses conducted with F-MPS concur with those obtained in other validity studies (Smith et al., 2016; Di Fabio et al. 2018), although the correlation coefficients in the present study were relatively better. In particular, the relationship between the prominent dimensions in various psychopathologies in the F-MPS, such as concern over mistakes, doubts about actions and personal standards (Shafran & Mansell, 2001), and the three main factors of the BTPS can be considered evidence of the validity of the scale. In the Persian adaptation – as one of the several studies in which the BTPS-45 has been adapted into other languages, the authors included a five-factor personality inventory for the evaluation of concurrent validity, while other studies have sought to reveal relationships with the result of different personality evaluation tools, including narcissism scales (Besharat & Atari, 2017). In this regard, we opted for the DTDD in the present study, while the narcissistic dimension was used for narcissistic perfectionism, and the two scores were found to be moderately correlated. When the relationship between DSM-5 CSS (i.e., 3 total scores and 13 symptoms scores) and the BTPS with mental problems was

**Table 3** The Pearson correlation coefficients between the BTPS and other variables, and the means and standard deviations of the BTPS

		SOP	SWC	COM	DAA	SC	SPP	OOP	H	E	G	RP	SCP	NP			
F-MPS	Total Score	.74	.73	.69	.54	.72	.61	.60	.43	.45	.29	.77	.73	.76	.73	.55	.53
	O	.26	.17	.09 <sup>†</sup>	-.02 <sup>†</sup>	.10	.10	.14	.04 <sup>†</sup>	.04 <sup>†</sup>	.18	.22	.22	.07 <sup>†</sup>	.07 <sup>†</sup>	.13	.14
	CM	.70	.72	.69	.53	.73	.53	.53	.45	.46	.24	.72	.70	.75	.73	.53	.52
	D	.54	.55	.64	.69	.59	.38	.41	.32	.37	.07 <sup>†</sup>	.57	.55	.71	.67	.37	.36
	PE	.34	.37	.37	.29	.38	.51	.29	.21	.24	.14	.37	.36	.45	.41	.28	.26
	PC	.24	.31	.35	.31	.33	.38	.26	.26	.25	.06 <sup>†</sup>	.29	.12	.41	.36	.26	.25
	PS	.58	.59	.43	.24	.54	.43	.46	.34	.33	.38	.65	.63	.48	.47	.47	.44
DSM-5 CSS	Neurosis	.26	.29	.31	.41	.32	.19	.20	.27	.29	.01 <sup>†</sup>	.29	.27	.38	.35	.24	.23
	Psychosis	.14	.14	.04 <sup>†</sup>	.08 <sup>†</sup>	.07 <sup>†</sup>	.02 <sup>†</sup>	.12	.18	.19	.11	.14	.12	.07 <sup>†</sup>	.07 <sup>†</sup>	.18	.19
	Substance Use	.14	.15	.15	.25	.19	.05 <sup>†</sup>	.13	.25	.19	-.04 <sup>†</sup>	.15	.12	.20	.19	.16	.17
	1	.18	.23	.24	.36	.27	.12	.10	.20	.16	-.05 <sup>†</sup>	.21	.20	.31	.28	.13	.14
	2	.19	.23	.18	.32	.23	.15	.19	.25	.21	.01 <sup>†</sup>	.22	.19	.27	.25	.21	.21
	3	.12	.12	.01 <sup>†</sup>	.03	.02 <sup>†</sup>	-.01	.12	.10	.14	.15	.13	.12	.02 <sup>†</sup>	.03 <sup>†</sup>	.16	.15
	4	.28	.30	.34	.38	.32	.18	.21	.25	.32	.04 <sup>†</sup>	.30	.30	.38	.37	.25	.24
	5	.22	.26	.21	.22	.22	.17	.18	.15	.22	.10	.25	.24	.25	.23	.20	.18
	6	.10	.11	.11	.15	.14	.08 <sup>†</sup>	.07	.18	.17	-.02 <sup>†</sup>	.11	.09 <sup>†</sup>	.15	.13	.12	.14
	7	.11	.11	.07 <sup>†</sup>	.11	.09 <sup>†</sup>	.08 <sup>†</sup>	.09 <sup>†</sup>	.17	.17	.06 <sup>†</sup>	.12	.10 <sup>†</sup>	.11	.10 <sup>†</sup>	.15	.15
	8	.18	.19	.22	.24	.19	.16	.13	.12	.17	.04 <sup>†</sup>	.19	.18	.25	.22	.15	.11
	9	.14	.15	.22	.27	.21	.15	.09 <sup>†</sup>	.12	.18	-.03 <sup>†</sup>	.15	.14	.26	.25	.12	.11
	10	.18	.21	.24	.32	.24	.18	.15	.25	.27	.01 <sup>†</sup>	.20	.19	.30	.27	.21	.20
	11	.15	.22	.17	.26	.22	.10	.20	.20	.20	-.03 <sup>†</sup>	.19	.17	.23	.21	.18	.16
12	.23	.25	.27	.44	.31	.15	.19	.29	.23	-.06 <sup>†</sup>	.25	.24	.36	.32	.20	.19	
13	.07 <sup>†</sup>	.07 <sup>†</sup>	.04 <sup>†</sup>	.06 <sup>†</sup>	.08 <sup>†</sup>	-.02 <sup>†</sup>	.07 <sup>†</sup>	.18	.12	.01 <sup>†</sup>	.07 <sup>†</sup>	.04 <sup>†</sup>	.06 <sup>†</sup>	.07 <sup>†</sup>	.12	.12	
DTDD	Machiavellianism	.18	.19	.11	.16	.13	.10	.23	.39	.33	.15	.20	.20	.16	.14	.34	.34
	Psychopathy	.09 <sup>†</sup>	.08 <sup>†</sup>	-.02 <sup>†</sup>	.09 <sup>†</sup>	.01 <sup>†</sup>	-.04 <sup>†</sup>	.07 <sup>†</sup>	.28	.20	.13	.09 <sup>†</sup>	.09 <sup>†</sup>	.01 <sup>†</sup>	-.01 <sup>†</sup>	.20	.22
	Narcissism	.42	.40	.35	.34	.36	.27	.40	.44	.60	.30	.43	.45	.41	.37	.50	.46
	Mean	13.97	12.78	15.73	13.75	11.84	10.08	11.90	9.96	10.10	9.55	26.75	11.20	51.40	17.26	41.52	14.64
	SD	4.32	4.56	4.70	5.02	3.99	3.35	3.99	3.10	3.01	3.12	8.52	3.85	14.19	5.17	10.70	4.19

All correlation coefficients are significant at  $p < .05$  except for the values represented with “<sup>†</sup>”

Bold values represent the coefficients of the BTPS-16

SOP: Self-oriented perfectionism, SWC: Self-worth contingencies, COM: Concern over mistakes, DAA: Doubts about action, SC: Self-criticism, SPP: Socially-prescribed perfectionism, OOP: Other-oriented perfectionism, H: Hypercriticism, E: Entitlement, G: Grandiosity, RP: Rigid Perfectionism, SCP: Self-critical Perfectionism, NP: Narcissistic Perfectionism

F-MPS: Frost multidimensional perfectionism scale, O: Organization, CM: Concern over mistakes, D: Doubts about actions, PE: Parental expectations, PC: Parental criticism, PS: Personal standards

DSM-5 CSS: DSM-5 Level 1 Cross-Cutting Symptom Scale. 1: Depression, 2: Anger, 3: Mania, 4: Anxiety, 5: Somatization, 6: Suicide, 7: Psychosis, 8: Sleep problems, 9: Memory problems, 10: Repetitive thoughts, 11: Dissociation, 12: Personality problems, 13: Substance use

DTDD: Dark triad dirty dozen

examined, the BTPS factors showed higher correlations especially with depression, anxiety, OCD and personality problems, than with other symptoms. Generally speaking, studies conducted in recent years tend to support these findings (e.g. Dimaggio et al., 2018; Pinto et al., 2017; Smith, Saklofske, Yan, & Sherry, 2017). Self-critical perfectionism (Egan et al., 2011), which is also considered a risk factor for the above diagnoses, was found in the study to be the component of perfectionism that shows the highest relationship with mental

problems, and this finding was supported by a comprehensive meta-analysis study conducted by Limburg, Watson, Hagger, and Egan (2017). According to the findings of the present study, the dimensions of perfectionism lack any significant relationships with psychotic symptoms and substance use. While different explanations can be put forward to explain this situation (e.g. low number of problem-specific items, perfectionism and lack of repeated findings and/or explanations between perfectionism and psychotic problems), the fact that



**Table 4** Results of hierarchical regression analyses predicting neurosis, psychosis and substance use

Predictors	NEUROSIS			PSYCHOSIS			SUBSTANCE USE		
	$\Delta R^2$	<i>F</i>	$\beta$	$\Delta R^2$	<i>F</i>	$\beta$	$\Delta R^2$	<i>F</i>	$\beta$
Step I	.13	<i>F</i> (1, 425) = 64.94***		.03	<i>F</i> (1, 424) = 14.41***		.047	<i>F</i> (1, 424) = 21.81***	
F-MPS_Total			.36***			.18***			.22*
Step II	.03	<i>F</i> (3, 422) = 5.92*		.02	<i>F</i> (3, 421) = 4.51*		.004	<i>F</i> (3, 421) = 1.75	
F-MPS_Total			.22*			.26*			.20*
BTPS-45: RP			-.19*			.02			-.18
BTPS-45: SCP			.32***			-.23*			.13
BTPS-45: NP			.07			.16*			.10
Total <i>R</i> <sup>2</sup>	.16	<i>F</i> (4, 422) = 21.24***		.05	<i>F</i> (4, 421) = 2.63***		.052	<i>F</i> (4, 421) = 6.79***	
Step I	.13	<i>F</i> (3, 422) = 22.26***		.04	<i>F</i> (3, 421) = 7.28***		.09	<i>F</i> (3, 421) = 14.54***	
Machiavellianism			.05			.08			.03
Psychopathy			.05			.05			.10
Narcissism			.32***			.14*			.24***
Step II	.08	<i>F</i> (3, 419) = 14.18***		.01	<i>F</i> (3, 418) = 2.46		.01	<i>F</i> (3, 418) = 2.38	
Machiavellianism			.06			.07			.04
Psychopathy			.10			.04			.11*
Narcissism			.20*			.11			.20*
BTPS-45: RP			-.09			.14			-.09
BTPS-45: SCP			.39***			-.14			.19*
BTPS-45: NP			-.05			.09			-.01
Total <i>R</i> <sup>2</sup>	.21	<i>F</i> (6, 419) = 19.26***		.05	<i>F</i> (6, 418) = 4.91***		.10	<i>F</i> (6, 418) = 8.53***	

\* *p* < .05 \*\*\* *p* < .001

F-MPS: Frost Multidimensional Perfectionism Scale, BTPS: Big Three Perfectionism Scale, RP: Rigid perfectionism, SCP: Self-critical perfectionism, NP: Narcissistic perfectionism

most of our sample had not been diagnosed made it unnecessary to elaborate on this issue at this stage. In addition, it is worthy of note that in the results of the regression analyses carried out to identify the incremental validity of the BTPS, this new measurement of perfectionism is successful in predicting neurotic and psychotic symptoms by going beyond another perfectionism scale and the dark triads. Indeed, although it did not reach statistical significance, the potential for substance abuse is also considerable.

Self-critical perfectionism in particular, as one of the BTPS dimensions, emerged as a salient and significant factor in these analyses, while rigid perfectionism can be considered a promising construct. The finding related to self-critical perfectionism actually concurs with the results of Caselle et al. (2019), in which it was suggested to be a critical factor in the prediction of social anxiety and depression. Similarly, in the study by Feher et al. (2020), depression, anxiety, and positive and negative effects appear to have the strongest relationships with this dimension of perfectionism.

In conclusion, the present study aimed to adapt to the Turkish context both the 16-item short form and the original 45-item form of the BTPS, as measurement tools that are in current use for the evaluation of perfectionism in both clinical

and non-clinical settings, and to make a comprehensive evaluation of their psychometric properties. The results of the analysis of the Turkish version of the scale, which was developed to overcome the deficiencies inherent in other popular tools used for the evaluation of perfectionism, indicated that these forms are sufficiently valid and reliable for application in Turkey. In testing their concurrent validity with various measurements, and including also test-retest reliability results, the strengths of this study over other adaptation studies are revealed. Furthermore, the incremental validity of the BTPS was supported for the first time in the present study. Besides, the adaptation into Turkish of the BTPS provide usage of a perfectionism measurements in 3 global factors and 10 facets in the long form or as 3 global factors in the short form in this culture. In this way, researchers and practitioners can benefit from this tool when evaluating perfectionism, not only in scientific and empirical studies, but also in psychological assessments and interventions. The most obvious limitations of the present study are that the sample was predominantly female and nonclinical, and so further studies are needed involving different groups to further examine or confirm the relationship between perfectionism and psychological problems. Furthermore, more detailed information

may be obtained through the application of these study findings to different clinical samples, and by ensuring gender, age and education balance with the control group. While the findings of the present study are very similar to many other studies analyzing the BTPS-45 (i.e., Casale, Fioravanti, Rugai, Flett, & Hewitt, 2019; Kilmen & Arikan, 2020; Smith et al., 2016; Smith et al., 2017), the factor loading distribution of first order factors on the higher factors (as in the case of self-oriented perfectionism and self-worth contingencies to rigid perfectionism) in the model tests were worthy of particular note, and can be considered another matter of curiosity. The results of future studies testing the factor structure of the long form on different samples would provide a deeper understanding of this point. Finally, it can be suggested that more specific findings may be obtained through the use of multidimensional perfectionism in psychotherapy efficacy studies.

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

## Compliance with Ethical Standards

**Conflicts of Interest/Competing Interests** The authors declare that they have no conflict of interest.

**Ethics Approval** Ege University Scientific Research and Publication Ethics Committees. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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

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