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Perfectionistic Self-Presentation Scale in Ecuador: psychometric properties and latent mean differences across genders

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Abstract Introduction: This paper aims to examine the psychometric properties, i.e., validity, reliability, factorial invariance, and latent mean differences based on gender, of the Perfectionistic Self-Presentation Scale, PSPS, in the Ecuadorian context. **Method:** A sample consisting of 597 Ecuadorian undergraduates participated in the study. **Results:** Confirmatory Factor Analysis supported a 14-item and three-dimensional model of the scale: Perfectionistic Self-Promotion, Nondisplay of Imperfection, and Nondisclosure of Imperfection. This model presented configural; measurement, i.e., metric, strong, and strict; as well as structural invariance across genders. Discriminant validity was observed by analysing correlations between PSPS factors and perfectionism traits. Males exhibited higher latent means of Perfectionistic Self-Promotion and also Nondisplay of Imperfection than females. **Conclusions:** The Spanish-translated and brief version of the PSPS represents a reliable and valid tool for assessing perfectionistic self-presentation in Ecuador.

Escala de Autopresentación Perfeccionista en Ecuador: propiedades psicométricas y diferencias de medias latentes en función del género

Resumen Introducción: Este artículo tiene como objetivo examinar las propiedades psicométricas, i.e., validez, fiabilidad, invarianza factorial y diferencias de medias latentes en función del género, de la Escala de Autopresentación Perfeccionista, PSPS, en el contexto de Ecuador. **Método:** La muestra se compuso de 597 universitarios ecuatorianos. **Resultados:** El análisis factorial confirmatorio apoyó una estructura de la escala compuesta por 14 ítems y tres dimensiones: autopromoción perfeccionista, no-divulgación de la imperfección, y no-verbalización de la imperfección. Este modelo mostró invarianza configural; de medida, métrica, escalar y estricta; y estructural a través del género. El análisis de correlaciones entre los factores de la PSPS y los rasgos perfeccionistas evidenció la validez discriminante de la escala. Los hombres obtuvieron medias latentes significativamente más altas en comparación con las mujeres en los factores autopromoción perfeccionista y no-divulgación de la imperfección.

Conclusiones: La versión de la PSPS abreviada y traducida al español representa una medida fiable y válida para evaluar la autopresentación perfeccionista en Ecuador.

In accordance with the Comprehensive Model of Perfectionism Behaviour, perfectionistic self-presentation (PSP) is an interpersonal component of the perfectionism construct that reflects the need "to seem perfect, regardless of whether or not they need to be perfect" (Hewitt & Flett, 2022, p. 64). This public expression of perfectionism is distinct from other perfectionist forms, such as the perfectionism traits (i.e., Self-Oriented Perfectionism, Socially Prescribed Perfectionism and Other-Oriented Perfectionism) or the automatic perfectionistic cognitions, and it includes three facets: Perfectionistic Self-Promotion, Nondisplay of Imperfection and Nondisclosure of Imperfection. The first, Perfectionistic Self-Promotion, entails the need to actively display one's own perfection to others. The second, Nondisplay of Imperfection, reflects the need and efforts to avoid seeming or behaving as imperfect or vulnerable to others. And, lastly, Nondisclosure of Imperfection means to not verbally reveal any imperfection or anything that might be negatively interpreted by others (Hewitt et al., 2003).

This huge effort to create an unreal public image of one's perfection is of great interest to research for different reasons. First, because it represents a distinct facet within the perfectionism construct that may be responsible for relevant differences among individuals with equivalent levels of perfectionist traits (Hewitt et al., 2003). Second, because it is related to several forms of psychopathology. As stated by Hewitt et al. (2003, p.49) "a person who projects an image of him- or herself as perfect is prone to many sources of distress and possible health problems". In fact, research has consistently evidenced the association between PSP and self-generated stress (Flett et al., 2020), maladaptive emotion-focused coping (Chen et al., 2022), depression (Rnic et al., 2021), social anxiety (Casale, Fioravanti, Rugai et al., 2020; Kehayes & Mackinnon, 2019), and suicide ideation (Robinson et al., 2021; Shahnaz et al., 2018), among others.

Even more concerning, perfectionistic self-presenters tend to conceal their distress from others despite experiencing an unbearable psychological pain (D'agata & Holden, 2018) and their ability to solve personal problems is undermined because of their deficient problem-solving skills (Besser et al., 2010). PSP also plays a negative role in help-seeking processes (Dang et al., 2020; Shannon et al., 2018). Therefore, as Flett and Hewitt (2013, p.12) explain, they are "flying under the radar" because, apart from not showing any sign of flaws, they will not ask for psychological help when they need it because it would be an open acknowledgement of imperfection.

The Perfectionistic Self-Presentation Scale

The Perfectionistic Self-Presentation Scale (PSPS) was developed by Hewitt et al. (2003) using a sample of 661 Canadian university students. The test includes 27 items divided into three dimensions: Perfectionistic Self-Promotion (10 items), Nondisplay of Imperfection (10 items) and Nondisclosure of Imperfection (7 items). The authors also informed of a high degree of congruence of this three-factor solution in a community (*N* = 501) and a clinical sample (*N* = 1041). Acceptable alpha coefficients of the PSPS subscales calculated for several separate samples were obtained, ranging from .86 to .90 for Perfectionistic Self-Promotion, .83 to .91 for Nondisplay of Imperfection, and .76 to .88 for Nondisclosure of Imperfection. Positive and significant intercorrelations between the three subscales calculated for different samples ranged from *r* = .50 - .73. Convergent and discriminant validity was tested by analysing correlations between the three subscales of PSPS and other measures of perfectionism, anxiety, depression, self-esteem, personality, impostorism, etc. Lastly, test-retest coefficients for student and clinical samples demonstrated good levels of stability for Perfectionistic Self-Promotion (.83 and .81), Nondisplay of Imperfection (.84 and .81), and Nondisclosure of Imperfection (.74 and .79).

Apart from the original validation, three studies have tested the psychometric properties of the PSPS. Lee et al. (2011) validated the Korean translation of the scale with two different samples consisting of college students (*N* = 151 and 203). Because the Confirmatory Factor Analyses (CFA) did not support the original structure of the scale, an Exploratory Factor Analysis (EFA) was performed and only 21 items were maintained. Additionally, items 10 and 24 were moved from Nondisplay of Imperfection to Perfectionistic Self-Promotion, and item 16 from Nondisclosure of Imperfection to Nondisplay of Imperfection. A final structure of 20 items (removing item 19) was supported by a CFA conducted on a second sample showing good internal consistency levels (α. = .88, .90, .72, and .70, respectively, for the total score and the three factors). Positive and significant intercorrelations between the subscales of a high and moderate magnitude were obtained. Moreover, positive, and significant correlations between the two first factors of the PSPS and self-presentational motivation were observed. In contrast, Nondisclosure of Imperfection did not significantly correlate with self-presentational motivation. On the other hand, Borroni et al. (2016) evaluated the psychometric properties of the Italian version of the PSPS using 447 nonclinical adults. The CFA did not initially support the original structure of the PSPS. However, subsequent analyses provided additional support for a three-factor model of the PSPS, although four items (12, 15, 16 and 18) reported substantial cross-loadings and two items (1 and 24) showed a different pattern of loadings than the original model. Acceptable Cronbach's Alpha coefficients were obtained for Perfectionistic Self-Promotion (α = .84) and Nondisplay of Imperfection (α = .78), but not for Nondisclosure of Imperfection (α = .67). More recently, Saulnier et al. (2022), with a sample composed of 419 community adults, found empirical evidence for a bifactor model based on 22 items (after removing all reverse-coded items from the original 27-item scale) structured in the original three dimensions as specific factors (Perfectionistic

Self-Promotion, Nondisplay of Imperfection, and Nondisclosure of Imperfection), as well as a general factor (PSP). Longitudinal invariance and invariance across genders of that model was tested, obtaining configural, scalar and strict invariance, and partial metric invariance over time. With respect to gender, results evidenced that item properties were inconsistent among men and women. Reliability H coefficients for latent factors were excellent for the general PSP factor (H = .96), but poor for the specific factors (H = .67 - .70). Further analyses regarding the divergent validity and dimensionality of the scale helped authors to conclude that PSPS is a unidimensional measure.

PSP and gender differences

Differences across genders have not been systematically assessed by previous research on PSP (Casale, Fioravanti, Baldi et al., 2020). In fact, whereas it might be hypothesised that girls would manifest higher levels of PSP because appearance is more relevant for females than males (Pliner et al., 1990), the available studies have yielded inconsistent results. For instance, regarding Nondisclosure of Imperfection, whereas males reported higher levels than females in some studies (Besser et al., 2010; Cowie et al., 2018; Craciun & Dudau, 2014), these differences did not reach statistical signification in others (Flett et al., 2012; Flett et al., 2020; Hewitt et al., 2020; Lee et al., 2011). In contrast, in the study of Shannon et al. (2018) the scores on Nondisclosure of Imperfection were higher for females. Similarly, in terms of Perfectionistic Self-Promotion, non-significant differences across gender (Cowie et al., 2018; Flett et al., 2012; Flett, et al., 2020; Hewitt et al., 2020; Lee, 2011; Shannon et al., 2018), or significantly higher levels in the male sample (Besser et al., 2010; Craciun & Dudau, 2014) were described in the scientific literature. Lastly, there seems to be an agreement regarding the existence of non-significant differences in Nondisplay of Imperfection based on gender (Besser et al., 2010; Cowie et al., 2018; Craciun & Dudau, 2014; Flett et al., 2012; Flett et al., 2020; Hewitt et al., 2020; Lee, 2011; Shannon et al., 2018). Unfortunately, these findings preclude making inferences as they all are based on the analysis of observable mean scores which are susceptible to measurement error. In this sense, Brown (2006) recommends examining gender differences based on latent mean scores, as they represent a better indicator of the real differences.

This study

Almost all the accumulated knowledge regarding perfectionism has been obtained from research carried out in the English-speaking population from North America and Europe. Thus, the relationship between culture and PSP has been ignored (Wang et al., 2019). This is an important aspect because conclusions obtained with western samples may not be applicable to other societies. Wang et al. (2019) found evidence for both universal and culturally specific patterns regarding the influence of PSP when they compared Chinese and North American participants. However, to our knowledge, no studies on PSP have been carried out in the Latin American population. This might be because, until now, a Spanish-language version of the PSPS has not

been developed. Finally, as mentioned above, the question regarding gender differences in the three factors of PSPS remains unclear, and new methods based on the analysis of latent mean scores, instead of observable mean scores, ought to be implemented.

This study aims to overcome the limitations mentioned by validating a Spanish-language version of the PSPS in a non-clinical sample of undergraduates from Ecuador. Specifically, we strive to analyse the following psychometric properties: factorial structure, a classic item analysis, reliability, intercorrelations, correlations between PSPS factors and perfectionism traits (i.e., Socially Prescribed Perfectionism, Self-Oriented Perfectionism and Other-Oriented Perfectionism), factorial invariance across genders and latent mean differences based on gender.

Method

Participants and procedure

The participants of this study were 597 university students from an Ecuadorian university (466 were males and 131 were females). The mean age of the participants was 22.08 years (SD = 3.33). The study was performed following all ethical standards of the 1964 Helsinki Declaration and its later amendments and institutional ethical approval was obtained prior to conducting the research from the University of Alicante (UA-2019-12-07). Participants were informed of the purpose and the confidential character of their participation and gave their informed written consent. Measures were administered by a duly trained research team member in a class period.

Instruments

Perfectionistic Self-Presentation Scale. The PSPS (Hewitt et al., 2003) is a 27-item self-report measure comprised of three subscales: Perfectionistic Self-Promotion, Nondisplay of Imperfection and Nondisclosure of Imperfection. Items are scored using a 7-point scale ranging from 1= *strongly disagree* to 7 = *strongly agree* (see the Introduction section for a more detailed explanation of the psychometric properties of the scale). The original version of the PSPS was translated into Spanish using a translation and back-translation methodology. First, the scale was independently translated into Spanish by two native Spanish-speaking translators. After reaching agreement, the scale was back-translated into English by two native English-speaking translators. Divergences between the latest version and the English original were discussed by the authors and professional translators after reaching a consensus on the definitive Spanish translation scale. Finally, to ensure not only linguistic correction, but also, the practical suitability of the items to the Ecuadorian culture, two Ecuadorian specialised Psychology professors were asked to evaluate their appropriateness.

Multidimensional Perfectionism Scale. The HMPS is a 45-item self-report scale developed by Hewitt and Flett (1991) for measuring three perfectionism traits: Self-Oriented Perfectionism, i.e., striving persistently to perfectionist personal standards (15 items; "I must work to my full potential at all times"), Socially Prescribed Perfectionism,

i.e., the pressure to be perfect imposed on the self by significant others (15 items; "My family expects me to be perfect"), and Other-Oriented Perfectionism, i.e., the requirement that others must be perfect (15 items; "If I ask someone to do something, I expect it to be done flawlessly"). A direct and back-translation method was employed to adapt that measure into Ecuadorian Spanish. The respective alphas for Self-Oriented, Socially Prescribed, and Other-Oriented Perfectionism were .86, .87 and .82.

Data analysis

Different CFAs were performed to examine the adequacy of the PSPS factorial structure models obtained by way of previous research (see Table 1) as well as a particular model (previously obtained by EFA using the principal axis factoring method with a randomised independent sample composed of 308 participants). To examine the parameters of the various models, the Robust Maximum Likelihood (RML) estimation method was used. Given the non-existence of multivariate normality of the data (Mardia coefficient = 240.79), the Satorra-Bentler scaled χ^2 (S-Bχ^2) was employed. The following goodness-of-fit measures and interpretation criteria were used (Brown, 2006; Hu & Bentler, 1999): the Robust Root Mean Square Error of Approximation (R-RMSEA; < .08 acceptable and < .06 excellent), the Standardised Root Mean Square Residual (*SRMR*; near .08 acceptable and < .05 good fit), the Robust Comparative Fit Index (*R-CFI*; ≥ .90 acceptable and > .95 good fit); and the Tucker Lewis Index (*TLI*; ≥ .90 acceptable).

A classical analysis of the items was also carried out to examine the mean, standard deviation, contribution of each item to the reliability of the scale, item–test correlation (RIT), corrected item–test correlation (RITc), item–subscale correlation (RIE), and the corrected item–subscale correlation (RIEc). Correlation coefficients of each item with its subscale and the total scale were also calculated, considering coefficients as small (.10 - .30), moderate (.30 - .50) and large (> .50) (Cohen, 1988). The reliability of the scale and each subscale was also examined using Cronbach's alpha coefficients, accepting scores > .70 (Nunnally, 1978).

A Multigroup Confirmatory Factor Analysis (MCFA) was carried out to confirm the factorial invariance (configural, measurement, and structural) of model of PSPS across the gender groups. Considering the non-existence of multivariate normality (Mardia's coefficient was 33.85 for females and 70.34 for males), the S-Bχ^2 method was used again. A stepwise hierarchical method was followed consisting in the estimation of the adjustment of series of nested models to which successive restrictions are imposed (Dimitrov, 2010). The abovementioned goodness-of-fit indices and criteria were considered to confirm the fit of the models, as well as the probability level associated with ΔS-Bχ^2 (*p* >.05) and the Comparative Fit Index Difference test ΔR-CFI (ΔR-CFI <.01) to confirm the existence of invariance.

Once the factorial invariance of the scale was confirmed, the latent mean differences between males and females were analysed, setting the latent means of the female group to zero, as it was used as the reference group. The Critical Ratio (CR) statistic was used to quantify the variance of means, considering estimations > 1.96 or < -1.96 an indicator of inequality between groups.

Data were analysed using EQS 6.1 and SPSS 22.

Results

EFA, CFA and reliability

Table 1 shows the results for the CFAs conducted on the four different models of the PSPS considered by previous research (i.e., the original, the Korean, the Italian, and the Bifactor models). Of these four models, the Bifactor model was the only one that obtained satisfactory goodness-of-fit indices. Alternatively, a particular model of the PSPS resulting from the EFA was also tested by means of CFA. That model involved the elimination of items 1, 16, 18 and 22 because of factor loadings less than .30, and items 2, 6, 11, 15, 19, 20, 24, 25 and 26, because of cross-loading over .30. This 14-item version obtained better values in all fit indices analysed than the Bifactor model, so the authors' model was accepted for subsequent analyses.

Cronbach's alpha values exceeded .70 for global PSPS scores (α = 85) as well as for its three dimensions: Perfectionistic Self-promotion (α = 82), Nondisplay of Imperfection (α = 74), and Nondisclosure of Imperfection (α = 72).

Classic item analysis, correlations between factors and discriminant validity

The mean of the items ranged from 3.57 (item 27) to 5.33 (item 14) and no item showed a low standard deviation (< .5) ranging from 1.67 (item 14) to 1.95 (item 8). Item-subscale correlations (.59 - .78), corrected item–subscale correlations (.40 – .68), item–test correlations (.48 - .68), and corrected item–test correlations (.40 - .59) were ≥ .40 for all items. Cronbach's alpha coefficients in case of eliminating an item ranged from .84 to .86.

Results from the correlational analysis are depicted on Table 2. The three PSPS factors showed positive and significant correlations of a large magnitude with the total PSPS score. Additionally, positive, and significant correlations of a moderate magnitude were found between factors. Moreover, the PSPS total score and factors are positively and significantly correlated with Socially Prescribed Perfectionism and Self-Oriented Perfectionism. These differences were of a moderate magnitude in all cases, except for correlations for Nondisclosure, which were small. In contrast, the total PSPS and the two first factors showed significant but negative correlations, of a small effect size, with Other-Oriented Perfectionism.

Factorial invariance

Results of the four degrees of factorial invariance (configural, measurement and structural) across gender are presented on Table 3. First, the data for each group is presented separately. Evidently, although the model fits the male data better than the female data, the data fit is reasonable enough to establish configural invariance across gender (Model 0 or free of constraints), which also reported acceptable goodness-of-fit values. Hence, the three levels of measurement invariance, metric (Model 1 or constraints of the factor loadings of Model 0), scalar (Model 2 or the constraints of the intercepts of the variables of Model 1)

Table 1. Confirmatory Factor Analysis: Goodness-of-fit indices for the models of the PSPS

Models	Total items	Factorial structure	S-Bχ^2	df	R-RMSEA 90% CI	SRMR	R-CFI	TLI
Original model (Hewitt et al., 2003)	27	Self-promotion (items 5, 7, 11, 15, 17, 18, 23, 25, 26, 27) Nondisplay (items 2, 3, 4, 6, 8, 10, 12, 20, 22, 24) Nondisclosure (items 1, 9, 13, 14, 16, 19, 21)	1156.28	32	.07 [.06, .07]	.08	.83	.81
Korean model (Lee et al., 2011)	20	Self-promotion (items 5, 7, 10, 17, 23, 24, 25, 26, 27) Nondisplay (items 2, 3, 4, 8, 12, 16, 20, 22) Nondisclosure (items 9, 13, 14)	596.10	17	.07 [.06, .07]	.07	.88	.86
Italian model (Borroni et al., 2016)	23	Self-promotion (items 1, 5, 7, 11, 17, 23, 24, 25, 26, 27) Nondisplay (items 2, 3, 4, 6, 8, 10, 20, 22) Nondisclosure (items 9, 13, 14, 19, 21)	812.71	21	.07 [.07, .08]	.08	.85	.84
Three-Factor Bifactor model (Saulnier et al., 2022)	22	[General factor] PSP (all items) [Specific factors] Self-promotion (items 5, 7, 15, 17, 23, 25, 26, 27) Nondisplay (items 2, 3, 4, 6, 8, 10, 12, 20, 24) Nondisclosure (items 9, 13, 14, 19, 21)	472.51	187	.05 [.05, .06]	.05	.94	.92
authors' model	14	Self-promotion (items 5, 7, 17, 23, 27) Nondisplay (items 3, 4, 8, 10, 12) Nondisclosure (items 9, 13, 14, 21)	150.16	73	.04 [.03, .05]	.04	.96	.96

Note: S-Bχ^2 = Satorra-Bentler scaled χ^2; *df* = degrees of freedom; *R-RMSEA* = Robust Root Mean Square Error of Approximation; *CI* = Confidence Interval; *SRMR* = Standardised Root Mean Square Residual; *R-CFI* = Robust Comparative Fit Index; *TLI* = Tucker Lewis Index.
p < .001 for S-Bχ^2 in all cases.

Table 2. Correlations between the factors of PSPS and perfectionism traits

		Total PSPS	Self-promotion	Nondisplay	Nondisclosure	*M*	*SD*
PSPS	Total PSPS	---	---	---	---	60.03	14.73
	Self-promotion	.80**	---	---	---	19.60	6.48
	Nondisplay	86**	.55**	---	---	20.68	6.55
	Nondisclosure	.72**	.34**	.48**	---	19.75	5.30
	Socially prescribed	.37**	.32**	.34**	.20**	60.58	9.15
HMPS	Self-Oriented	.38**	.37**	.30**	.20**	65.37	11.80
	Other-Oriented	-.12**	-.11**	-.12**	-.04	62.16	7.65

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

Table 3. Factorial invariance of the PSPS as a function of gender

	χ^2	S-Bχ^2	*df*	TLI	R-CFI	R-RMSEA	SRMR	ΔS-Bχ^2 (Δ*df*, *p*)	ΔR-CFI
Females	136.35	110.29	73	.90	.92	.06 [.04, .08]	.07		
Males	171.48	118.05	73	.97	.97	.04 [.02, .05]	.04		
Model 0	307.83	228.96	146	.95	.96	.03 [.02, .04]	.06		
Model 1	312.72	236.94	157	.96	.96	.02 [.02, .02]	.06	4.93 (11, .93)	.001
Model 2	334.34	258.00	171	.95	.96	.03 [.02, .04]	.06	21.03 (14, .10)	-.001
Model 3	347.40	264.12	186	.96	.97	.03 [.02, .04]	.07	8.50 (15, .90)	.005
Model 4	340.59	262.62	177	.95	.96	.03 [.02, .04]	.07	4.72 (6, .58)	.001

Note. Model 0 = Free model; Model 1 = Model 0 with factor loadings; Model 2 = Model 1 with intercepts; Model 3 = Model 2 with error variances; Model 4 = Model 2 with variances and covariance factors; S-Bχ^2 = Satorra-Bentler χ^2 scaled; *df* = degrees of freedom; *TLI* = Tucker-Lewis Index; *R-CFI* = Robust Comparative Fit Index; *R-RMSEA* = Robust Root Mean Square Error of Approximation; *SRMR* = Standardised Root Mean Square Residual; ΔS-Bχ^2 = χ^2 difference model comparison test; Δ*df* = difference between degrees of freedom; ΔR-CFI = Robust comparative Fit Index Difference test.

Table 4. Latent mean differences across the groups of gender for the PSPS

	PSPS Factors		
	Self-promotion	Nondisplay	Nondisclosure
Females (reference, *N* = 131)			
Males (*N* = 466)			
ME	.87	.42	.09
SE	.15	.12	.12
CR	5.84*	3.41*	.74

Note. ME = Mean Estimation; SE = Standard Error; CR = Critical Ratio. *Statistically significant difference (> 1.96 or < -1.96).

and strict (Model 3 or the constraints of the variances and covariances of errors in Model 2) were tested, obtaining again acceptable fit. Subsequently, structural invariance (Model 4 or the constraints of the variances and covariances of the factors in Model 2) was tested, which also fits the data. Additionally, the equivalence between the five tested models was evidenced, given the non-significant *p* associated with ΔS-Bχ^2 and the levels of ΔR-CFI < .01.

Latent mean differences

Acceptable goodness-of-fit values were obtained for the structures of the latent means based on gender: SBχ^2= 264.50, *df* = 168, *p* < .001, *R-CFI* = .97, *TLI* = .95, *R-RMSEA* = .03 (.02 – .04), and *SRMR* = .06. As shown on Table 4, females obtained lower latent means than males in Perfectionistic

Self-Promotion and Nondisplay of Imperfection, whereas non-significant differences across gender were observed for Nondisclosure of Imperfection.

Discussion

This study aimed to evaluate the psychometric properties of a Spanish version of the PSPS in a sample of Ecuadorian adolescents as well as to explore the latent mean differences in the dimensions of the scale across genders. CFA provided support for the three-factor solution of the measure (i.e., Self-Promotion, Nondisplay of Imperfection and Nondisclosure of Imperfection) in line with the original structure of the scale (Hewitt et al., 2003), and its later versions adapted to Italian and Korean populations (Borroni et al., 2016; Lee et al., 2011). However, the total number

of items was reduced, which is also in line with previous research (Borroni et al., 2016; Lee et al., 2011; Saulnier et al., 2022). Specifically, only 14 of the original 27 items were maintained (Self-promotion and Nondisplay factors were composed of five items each, whereas Nondisclosure of Imperfection entailed four items) thus providing a shortened version. Additionally, it is important to mention that no item was relocated in a different factor to that established by the original validation of the scale, in contrast to what occurred in the Italian and Korean adaptations, which moved some items to other factors. In this way, the Spanish translation of the PSPS represents a shorter version of the scale but preserves the original conceptualisation of each factor. Furthermore, all factors and the total scale reach acceptable internal consistency levels (Nunnally, 1978).

Positive and significant intercorrelations of the three subscales, ranging from .34 to .55, were obtained, whereas positive and significant correlations of a larger magnitude, ranging from .72 to .86, were found for the association between each factor and the total score of the scale. Discriminant validity was tested assessing correlations between the PSPS factors, and the perfectionism traits assessed using the HMPS (Hewitt & Flett, 1991). In accordance with previous research (e.g., Hewitt et al., 2003; Hewitt et al., 2019; Hewitt et al., 2022; Shahnaz et al., 2018), PSPS factors were more highly associated with Self-Oriented and Socially Prescribed Perfectionism than Other-Oriented Perfectionism. In fact, correlations with Other-Oriented Perfectionism were small, in a negative sense, and, in the case of Nondisclosure, even insignificant. In accordance with Hewitt et al. (2003), this is because Other-Oriented Perfectionists are more focused on the imperfections and weaknesses of others than on their own. Overall, these results evidence that PSP facets are associated with perfectionism traits, Self-Oriented and Socially Prescribed Perfectionism, but representing a clearly different component of perfectionism.

Analysing the factorial invariance of the Ecuadorian and brief version of the PSPS across genders was another objective of this study. As a result, the 14-item and three-factor structure of the PSPS emerged as invariant across genders. Firstly, the configural invariance of the scale was supported, evidencing that the factor structure of the PSPS was equivalent in both males and females. Secondly, the three levels of measurement invariance (metric, strong and strict) were achieved, which indicate that the factor loadings of each item (i.e., metric invariance), the intercepts of each item on the latent factors (strong invariance) and the variances and covariances of the errors (i.e., strict invariance) were equal for both genders. Lastly, the results proved the existence of structural invariance for the Spanish translation and brief version of the PSPS, which indicates that all variables have the same relationship in both genders. Thus, this study provides the first evidence of measurement and structural invariance of the PSPS across genders.

Findings regarding latent mean differences across genders indicated that Perfectionistic Self-Promotion and Nondisplay of Imperfection were higher in males in comparison with females. Conversely, non-significant differences were observed for Nondisclosure of Imperfection. Results suggest that males tend to experience a greater need to proclaim one's own perfection to others as well as to adopt a disguising interpersonal stance entailing the avoidance or concealing of any behaviour that might be interpreted by other people as imperfect or as a reflection of one's own imperfections. In contrast, both males and females manifest at the same level the need to not verbally divulge any imperfection or flaw. These findings are partially supported by previous literature that has provided data regarding gender differences in terms of PSP facets (Besser et al., 2010; Cowie et al., 2018; Craciun & Dudau, 2014; Flett et al., 2012; Flett et al., 2020; Hewitt et al., 2020; Lee et al., 2011; Shannon et al., 2018). However, it should be considered that comparison between our results and those from previous literature is hindered for three reasons. First, as mentioned above, preliminary results from these studies are contradictory not reaching an agreement regarding the sense of these differences and even their statistical signification. Second, because different types of statistical analysis have been used; this study compares latent means derived from MCFA, whereas all previous studies analysed observable scores performed by t-tests. In this sense, it is worth mentioning that examining gender differences based on latent mean scores, instead of raw or observable scores, allows to state less ambiguous inferences and conclusions (Brown, 2006). Third, we must not forget the possible influence of cultural factors that explain part of the differences found between our study (the only one carried out to date with a Latin American population) and previous research.

This study has several limitations. First, results should be generalised with caution to other Spanish-speaking societies different from the Ecuadorian culture. In this sense, future studies should test whether the Spanish version of the PSPS validated in Ecuador would be also a valid and a reliable measure to assess perfectionistic self-presentation in other Spanish-speaking Latin American countries and in Spain. In addition, as a cross-sectional study, this research could not answer the question of whether there is a causal relationship between PSP facets and perfectionism traits. Employing longitudinal data could help to overcome that limitation. Furthermore, subsequent investigations of the PSPS might benefit from analysing the temporal stability of the scale as well as including the analysis of its discriminant validity with other measures of adjustment and maladjustment different from MPS. Similarly, the lack of measures to evaluate PSP has prevented measuring the convergent validity of the PSPS. Lastly, there was no data on the clinical status of the participants of the study. Future studies might explore factorial invariance of PSPS across clinical and non-clinical samples.

Conclusions

The current study contributes to enhancing the empirical research of PSPS in several ways. First, this work has succeeded in replicating the three-dimensional structure proposed by Hewitt et al. (2003) with an independent representative sample of Ecuadorian undergraduates. Second, we provide the first evidence for factorial invariance of the three-dimensional structure of the PSPS across genders. Thirdly, this is the only study to date that has analysed differences between males and females in the PSPS based on latent mean scores. Accordingly, this study has important practical implications as it provides the scientific

community and professional psychologists with a brief, reliable and valid instrument for assessing PSP facets in Ecuador, being the first validated, Spanish-translated version of the PSPS. Hence, it is expected that it will contribute to increase the number of studies on PSP in Ecuador and in other Spanish-speaking countries, an issue that has been under-researched. On the other hand, our study helps to clarify the question regarding gender differences in terms of PSP, providing robust statistical evidence (since latent means are not influenced by measurement error) that Perfectionistic Self-Promotion and Nondisplay of Imperfection are higher in males than in females, and that there are no differences in Nondisclosure of Imperfection.

PSP is associated with a wide range of psychopathologies and maladaptive patterns (e.g., Chen et al., 2022; Casale, Fioravanti, Rugai et al., 2020; D'Agata & Holden, 2018; Flett et al., 2020; Rnic et al., 2021; Robinson et al., 2021), and perfectionistic self-presenters tend to hide their vulnerabilities and problems, being less susceptible to receiving psychological help (Flett & Hewitt, 2013). Keeping in mind the considerable traumatic impact of the pandemic on the Latin-American population (Palomera et al., 2021), it seems essential, in these times, to have an appropriate instrument for also identifying potential risk perfectionistic self-presenters in Spanish-speaking communities.

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