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Maladaptive Perfectionism at School: Development and Validation of the Study-related Perfectionism Scale

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ABSTRACT

There are many instruments for evaluating perfectionism. However, there are few instruments for evaluating maladaptive perfectionism in the school context specifically, and there is no brief instrument for use across different school levels. Hence, we created the Study-related Perfectionism Scale (SPS), which evaluates the potentially maladaptive combination of high perfectionistic strivings and concerns related to study through five items. We conducted exploratory and confirmatory factor analyses on 804 Italian college students (*M*age = 24.01 ± 4.35) and 310 Italian adolescents (*M*age = 16.15 ± 1.60) from secondary schools of second grade. After evaluating factor structure, we performed convergent validity analyses. We found support for the SPS as a 5-item, one-factor instrument with good psychometric properties. The SPS may be used in future research and to develop preventive interventions for improving students' well-being and academic performance.

El perfeccionismo disfuncional en la escuela: desarrollo y validación de la Escala de Perfeccionismo en el Estudio

RESUMEN

Hay muchos instrumentos para medir el perfeccionismo, aunque haya pocos para evaluar el perfeccionismo disfuncional específicamente en el contexto escolar y no haya ningún instrumento breve para utilizarse en los distintos niveles escolares. Este es el motivo por el que creamos la Escala de Perfeccionismo en el Estudio (EPE), que mide la combinación potencialmente disfuncional de un gran afán perfeccionista y la preocupación en el estudio por medio de cinco ítems. Se llevaron a cabo análisis exploratorio y confirmatorio de factores con 804 estudiantes universitarios italianos (*M* de edad = 24.01 ± 4.35) y 310 adolescentes italianos (*M* de edad = 16.15 ± 1.60) de segundo grado de escuelas de de secundaria. Una vez obtenida la estructura factorial se llevaron a cabo análisis de validez convergente, encontrando apoyo para la EPE como instrumento de 5 elementos y un factor, con buenas características psicométricas. La escala puede utilizarse en la investigación futura y para poner en marcha intervenciones preventivas que mejoren el bienestar y rendimiento de los alumnos.

Perfectionism is an individual differences trait that can be defined as striving to meet high standards and the tendency to be very critical when these standards are not met (Flett & Hewitt, 2002). Thus, perfectionism is not a unitary construct, but a multidimensional construct, with two higher-order factors: perfectionistic strivings and perfectionistic concerns (Stoeber, 2018; Stoeber et al., 2014). More specifically, the strivings factor refers to the high standards set by the person whereas the concerns factor is about the perception of a discrepancy between expectations and performance, as well as having excessive worries about making mistakes (Cox et al., 2002; Stoeber & Otto, 2006).

Concerning outcomes, the literature showed that perfectionistic concerns are associated with negative consequences, including higher psychopathology and lower well-being (Chang, 2000; Dunkley et al., 2003; Shafran & Mansell, 2012). Studies about the outcomes associated with perfectionistic strivings have been less consistent. Some studies found positive consequences – such as higher physical health and life satisfaction (Chang et al., 2004; Molnar et al., 2006) – but others highlighted negative aspects, like a higher risk factor for eating disorders and lower physical health (Bardone-Cone et al., 2007; Molnar et al., 2012). Therefore, Stoeber (2018) proposed that it is the combination of high perfectionistic strivings and concerns to be associated with adverse outcomes.

A somewhat different pattern of results has been observed in educational settings. K. G. Rice et al. (2016) highlighted that, across

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different school levels, perfectionistic strivings are usually associated with higher grade point average. Studies about the relationship between perfectionistic concerns and academic performance have been less consistent and, when the relationship is statistically significant, the (negative) effect size is small (see Madigan, 2019). As suggested by Stoeber (2018), this might be because the factor leading to negative outcomes is the combination of high strivings and high concerns rather than high strivings or concerns alone. Indeed, a potentially adaptive combination of high strivings and low concerns has been associated with higher academic performance (e.g., Bong et al., 2014; Enns et al., 2001). On the other hand, a likely more maladaptive combination of elevated strivings and concerns has been associated with negative outcomes, such as lower academic achievement and academic stress (Arthur & Hayward, 1997; K. G. Rice et al., 2016).

The studies of perfectionism in academic settings have been performed using general perfectionism scales. Commonly used scales include two with the same name, the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990; Hewitt et al., 1991) and the Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001) and its recent short version (SAPS; K. G. Rice et al., 2014). Each scale has different subscales representing perfectionistic strivings and concerns as broader individual differences characteristics. Such general perfectionism scales are useful in analyzing the role of perfectionism traits in academic variables; however, it is critical to have an instrument specifically related to perfectionism in academic settings. Previous research showed that domain-specific measures better predict outcomes than domain-general measures, including perfectionism scales (e.g., Busseri & Mise, 2020; Dunn et al., 2005; Levine & Milyavskaya, 2018).

Although some instruments have been developed for evaluating perfectionism in specific areas, such as sport (Performance Perfectionism Scale-Sport; Hill et al., 2016) and narcissistic perfectionism (Big Three Perfectionism Scale [BTPS]; M. M. Smith et al., 2016), an instrument is still lacking that specifically focuses on aspects of perfectionism likely to be maladaptive in the academic setting and that is short and applicable across different school levels. Based on our search of peer-reviewed papers in scientific databases, there are only two instruments developed for evaluating academic perfectionism, namely the Academic Perfectionism Scale (APS; Malik & Ghayas, 2016) and the College Academic Perfectionism Scale (CAPS; Liu & Berzenski, 2022).

The APS is a 41-item self-report comprised of six scales based mainly on Frost et al.'s (1993; Frost et al., 1990) model of perfectionism. The APS subscales are: Parental Expectations, Doubts and Concerns on Performance Quality, Social Prescribed Perfectionism, Personal Standards, Organization, and Parental Criticism. However, there are some issues with this scale from a methodological point of view. The six factors account for only 29.76% of the variance, leaving a considerable amount of unexplained inter-item variability. Moreover, confirmatory factor analyses (CFAs) have not been conducted to confirm and cross-validate the factor structure of the test. Finally, Malik and Ghayas (2016) specified that they created the APS with the aim of having an indigenous instrument developed for Pakistani university students, potentially limiting its external validity. Therefore, the APS may be a good instrument for evaluating academic perfectionism, especially in Pakistan college students. However, besides being a long instrument, Malik and Ghayas (2016) did not conduct CFA to support its factor structure nor did they test it with adolescent students.

The CAPS (Liu & Berzenski, 2022) is a 31-item self-report scale derived from the BTPS (M. M. Smith et al., 2016). The BTPS measures, through three high-order factors, ten facets of perfectionism: Rigid Perfectionism (including self-oriented perfectionism and self-worth contingencies), Self-Critical Perfectionism (comprising concern over mistakes, doubts about actions, self-criticism, and socially prescribed perfectionism), and Narcissistic Perfectionism (made up of other-oriented perfectionism, hypercriticism, entitlement, and grandiosity). In developing the CAPS, Liu and Berzenski (2022) focused on college students and deleted the higher-order factor of narcissistic perfectionism. Using both exploratory and confirmatory factor analyses, they reached a 31-item version consisting of two higher-order factors: i) Self-Oriented Academic Perfectionism and ii) Self-Critical Academic Perfectionism (including three sub-factors, namely, academic self-criticism, doubts about actions, and socially prescribed academic perfectionism). Compared to the APS by Malik and Ghayas (2016), the CAPS has the methodological strength of explaining 57.14% of the variance through its four (first-order) factors and has some CFA support for its factor structure. However, among its limitations, the CFA model fit indices suggested less than desirable fit (e.g., comparative fit index = .83), results were based on a sample of mainly Hispanic underclassmen from introductory psychology courses, and the CAPS is a lengthy scale of many items.

Therefore, we believe that the literature still lacks a *short* instrument to be used for evaluating potentially maladaptive school-related perfectionism *across a broader range of school levels*, as perfectionism may arise earlier than in young adult years (e.g., Parker, 1997). By "maladaptive perfectionism" and consistent with reviews by K. G. Rice et al. (2016) and Stoeber (2018), we refer to the combination of high strivings and concerns that might pose specific difficulties in the academic setting. Thus, we examined the psychometric properties of a new brief instrument we developed for evaluating potentially maladaptive study-related perfectionism, which may be associated with academic impairment (K. G. Rice et al., 2016; Stoeber, 2018), low well-being, and studyholism (or obsession toward study; Loscalzo & Giannini, 2017b, 2018a, 2018b). Loscalzo and Giannini (2017b), in line with their model of workaholism (Loscalzo & Giannini, 2017a), proposed studyholism as a new potential clinical disorder reflecting problematic overstudying that results from both individual and situational antecedents. They listed perfectionism among (potential) individual antecedents, consistent with studies showing an association between workaholism and perfectionism (e.g., Falco et al., 2014; Stoeber et al., 2013; Tziner & Tanami, 2013). Using an instrument specifically developed to evaluate maladaptive perfectionism in the school context along with a general perfectionism scale could help clarify if interventions to improve psychological well-being and academic performance should address general perfectionism or a specific form of maladaptive perfectionism related to academic activities.

The Present Study

The first author developed an initial pool of 20 items based on the following definition of maladaptive study-related perfectionism: the combination of high strivings (i.e., high standards related to the academic performance) and high concerns (i.e., high concerns about making a mistake, as well as the discrepancy between expectations and performance) with a focus on the academic setting. The pool of 20 items covered high perfectionistic strivings (7 items) and high perfectionistic concerns (8 item) with a specific focus on study-related activities, as well as 5 items about social difficulties that might be related with study-related maladaptive perfectionism (i.e., inability to work/study in a group). Item content was informed by definitions of perfectionistic strivings and concerns in the scientific literature (Cox et al., 2002; Stoeber & Otto, 2006). Descriptions of organizational citizenship behavior (C. A. Smith et al., 1983) helped inform item content involving difficulties with working or studying in a group. Focusing on school-related activities, the designed items addressed the deficiency in helping other students or jointly working on a school project. To address a potential limitation of the APS designed for Pakistani students (Malik & Ghayas, 2016) and of the

CAPS (Liu & Berzenski, 2022) for college students, the pool of SPS items was developed to be more general across populations of students. Therefore, the content and phrasing of items has been fashioned to be applicable and understood by students across different ages and countries.

Then, we used exploratory and confirmatory factor analyses to obtain a short scale to evaluate the maladaptive combination of high strivings and concerns. Hence, we hypothesized that: (1) the SPS will have a clear factor structure, as supported by CFAs across different samples; (2) scores on the SPS will have good convergent validity with both the Hewitt et al. (1991) MPS and the SAPS; and (3) the SPS will have good psychometric properties (stable factor structure, good internal reliability, and good convergent validity) in both college-age and adolescent samples.

Study 1

Method

Participants and Procedure

After authorization from the Ethical Committee of the University of Florence, we gathered a sample of 404 Italian college students (75% female) aged between 18 and 58 years (M = 24.69, SD = 5.14). Most participants attended courses at the University of Florence (65.6%). Many majors were represented, and the proportions of students in years 1 to 5 of college were 12.1%, 16.3%, 24.8%, 14.1%, and 32.7%, respectively. The participants completed an online questionnaire containing demographic items (e.g., age and gender), followed by 20 items developed to measure study-related perfectionism, and the Hewitt and Flett (1991) Multidimensional Perfectionism Scale (MPS).

Materials

Study-related Perfectionism Scale (SPS). As noted earlier, the SPS initially contained 20 items designed to measure the maladaptive combination of strivings and concerns, along with problems perfectionists might report in dealing with work/study groups. Items on the SPS are responded to using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Instructions and items for the instrument were phrased to be applicable to both college students and students of lower grades, such as pre-adolescents and adolescents.

Multidimensional Perfectionism Scale (MPS). We administered the Italian translation (Sica, 2004) of the MPS (Hewitt et al., 1991), a 45-item self-report instrument that assesses three components of perfectionism: Self-Oriented Perfectionism (SOP), or perfectionistic strivings, Other-Oriented Perfectionism (OOP), and Socially-Prescribed Perfectionism (SPP), or perfectionistic concerns, specifically the concern that others expect perfection from the respondent. Items are responded to using a 7-point scale ranging from 1 (*disagree*) to 7 (*agree*). The Italian version has good psychometric properties (Ghisi et al., 2010). In the current sample, the Cronbach's alpha values were .93 (SOP), .72 (OOP), and .86 (SPP).

Data Analysis

We performed analyses with IBM SPSS version 28. We used exploratory factor analyses (EFAs; principal axis factoring and promax rotation) to evaluate factor structure and to inform the elimination of items because we aimed to create a short and unidimensional scale assessing the maladaptive combination of high strivings and concerns. Items were screened based on communalities (< .25 were dropped) and factor loadings, and parallel analysis was used to help inform the number of factors to consider retaining. Items were expected to be retained if they had loadings > .40 on one factor and no loading on any other factor > .20 (Brown, 2015; Rosellini & Brown, 2021). Following Kline (2015), we also eliminated items if they represented only one or two of the indicators for any factor. Item content and factor interpretability were also considered. Additional EFAs would be conducted after removing items. This process was continued until an EFA reached a distinct factor solution, and one that was conceptually consistent our desire to develop a brief scale to measure perfectionistic, study-related strivings, and concerns. Moreover, after identifying items that could constitute the SPS, we evaluated its internal consistency. Finally, we analyzed convergent validity based on Pearson's correlations between the SPS and the MPS.

Results

First, we conducted exploratory factor analyses (EFAs) to select those items reflecting a stable (and short) one-factor structure that assesses the combination of high strivings and concerns. As a first step, to avoid being too restrictive in the initial stage of item pruning, we removed two items with a communality value below .25. Based on item content, we judged their deletion as appropriate since both were not explicitly related to perfectionistic strivings or concerns. The resulting factor structure identified six factors with eigenvalues > 1.0. However, eigenvalues and the scree plot revealed unambiguous support for a single factor (eigenvalue = 5.17, followed by eigenvalues of 1.94, 1.44, 1.24, 1.12, and 1.03). Parallel analysis suggested retaining four factors and – based on pattern matrix loadings – four of the six factors had only two items with loadings > .40. Following Kline's (2015) recommendation to avoid factors with fewer than two indicators, we considered removing the items loading onto the two-item factors. The content of those items seemed to justify their removal because they reflected workgroup avoidance (which was included as an aspect that might have been related to study-related maladaptive perfectionism but not strictly part of perfectionistic strivings or concerns). Moreover, some of the items tapped intolerance of even the slightest error in performance (which was already covered through other items in the remaining item set). Therefore, we dropped those eight items and performed another EFA on the remaining 10 items. Results revealed three factors with eigenvalues > 1.0, though two of the factors had only two indicators with loadings > .40 and one of the ten items failed to load substantially on any factor. Thus, those five items were dropped and a final EFA supported a single-factor model of five item indicators with loadings that ranged from .55 to .74 (Table 1). The eigenvalue associated with the factor was 2.67 – well distinguished from the second highest eigenvalue of .76 – and it explained 53.38% of the variance. The internal reliability for the 5-item scale suggested by the EFA results was satisfactory (Cronbach's alpha = .78). Moreover, the (corrected) item-total correlations ranged between .48 and .63.

Finally, convergent validity was supported with moderate correlations between the SPS and the MPS scales addressing strivings (MPS-SOP) and concerns (MPS-SPP) (see Table 2).

Discussion

The results of this study confirmed our first hypothesis that the SPS has a clear factor structure. Indeed, we found a clear one-factor solution that explains a large amount of variance and that corresponds to the maladaptive combination of high strivings and concerns. Likewise, the reliability estimate was satisfactory for the SPS, as reaching the cut-off for new scales (Nunnally & Bernstein, 1994). Our second hypothesis also was confirmed with the SPS having positive correlations with the MPS subscales, especially with the two MPS subscales evaluating perfectionistic strivings

Table 1. Exploratory Factor Analysis (EFA) of the Study-related Perfectionism Scale (SPS) on College Students (N = 404)

SPS item	Maladaptive Perfectionism
1.Trovo molto difficile accettare anche il più piccolo errore *I find it very difficult to accept even the smallest mistake on an exam*	.61
2. Non saper rispondere a una domanda è umiliante *It is humiliating not to know how to answer to a question*	.55
3. Se un mio compagno prende un voto più alto del mio mi sento sconfitto *If one of my classmates gets a grade higher than me, I feel defeated*	.69
4. Io voglio essere il più bravo della classe/del mio corso *I want to be the best in my class/course*	.63
5. Anche se ho commesso un solo errore, sento di aver fallito completamente *Even if I only had one incorrect answer on an exam, I would feel like I failed completely in my studying*	.74

Note. Principal Axis Factoring.

Table 2. Correlations between the Study-related Perfectionism Scale (SPS), the Short Almost Perfect Scale (SAPS; n = 400 college students and n = 310 adolescents), and the Multidimensional Perfectionism Scale (MPS; n = 404 college students)

		Study-related Perfectionism Scale
Strivings	MPS-Self Oriented Perfectionism	.58
	SAPS-Standards	.39
		(.26)
Concerns	MPS-Socially Prescribed Perfectionism	.43
	SAPS- Discrepancy	.40
		(.37)
MPS – Other Oriented Perfectionism		.23

Note. Values in parentheses are based on the adolescent sample. Correlations with MPS were from Study 1, correlations with SAPS (3 items per each scale) were from Study 2, and correlations for adolescents were from Study 3 (6-item SAPS).
p < .001 for all the values.

and concerns (MPS-SOP and MPS-SPP). In sum, results from Study 1 supported a reduced 5-item set for the SPS, with correlations generally consistent with expectations.

Study 2

Study 1 provided preliminary support for the psychometric properties of the 1-factor, 5-item version of the SPS. To extend evaluation of the SPS, we analyzed its factor structure and psychometric properties using another sample of college students. We were especially interested in examining associations between the SPS and another measure of perfectionism.

Method

Participants and Procedure

The sample for the second study included 400 Italian college students aged between 19 and 36 years (M = 23.33, SD = 3.22), and balanced for gender (52% women). Most of the participants attended their courses in Florence (40.3%). Many majors were represented, and the proportions of students in years 1 to 6 of college study were 14.5%, 23%, 25%, 12.5%, 16.8%, and 8.3% respectively. These students completed an online questionnaire containing the same personal data sheet used for the first study, the SPS, and the Short Almost Perfect Scale (SAPS).

Materials

Study-related Perfectionism Scale (SPS). We administered the SPS items from Study 1 that represented both perfectionistic strivings and concerns. The items were followed by a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Short Almost Perfect Scale (SAPS; K. G. Rice et al., 2014). The SAPS is the short form of the Almost Perfect Scale-Revised (Slaney et al., 2001). By means of 8 items, it allows measuring perfectionistic strivings (Standards subscale) and perfectionistic concerns (Discrepancy subscale). Each item is rated on a 7-point scale ranging from *strongly disagree* to *strongly agree*. Although all 8 items were administered, a recent Italian version of the SAPS (Loscalzo et al., 2019) recommended using three items per each scale and those were used for the convergent validity analyses in the current study. The SAPS has good psychometric support in other research on Italian college students (Loscalzo et al., 2019; S. P. M. Rice et al., 2020). In the current sample, Cronbach's alpha was .72 for the Standards scale and .82 for the Discrepancy scale.

Data Analysis

We performed the analyses with SPSS Version 28 and AMOS. First, we conducted confirmatory factor analyses (CFAs, maximum likelihood). We used the following goodness of fit indexes and cut-off scores: the comparative fit index (CFI), which has the following cut-off values: <.90 lack of fit, .90-.95 good fit, >.95 excellent fit (Hu & Bentler, 1999); and the root mean square error of approximation (RMSEA), whose cut-off values are: < .05 excellent fit and .05-.08 acceptable fit (Reeve et al., 2007). Next, we evaluated the internal consistency of the SPS score and convergent validity (correlations) with the SAPS.

Results

We conducted CFAs to evaluate further the factor structure of the SPS. The 1-factor, 5-item model supported in Study 1 showed an unsatisfactory fit to the data based on the RMSEA: .141, 90% CI [.105, .180], although fit was reasonable based on CFI = .92. Fit improved by allowing the correlation between errors associated with the item "If one of my classmates gets a grade higher than me, I feel defeated" and the item "I want to be the best in my class/course." The correlation between these errors was justified because both related to the social

comparison with classmates, whereas the other three items did not. The fit indexes for this model were: CFI = .99; RMSEA = .049, 90% CI [.000, .040]. The standardized factor loadings were good, ranging between .47 and .7 (see Figure 1 for the graphical representation of the model).

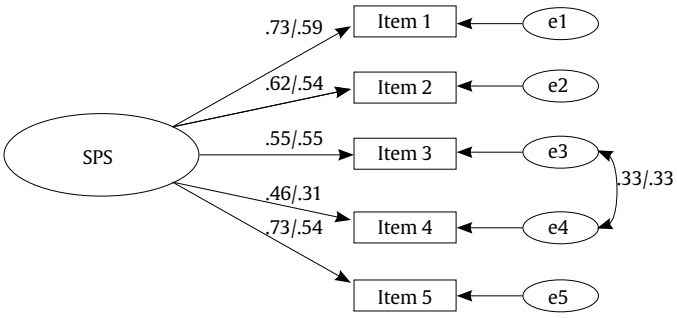

Figure 1. Study-Related Perfectionism Scale (SPS). College students, n = 400; Adolescents, n = 310.
Note. Standardized factor loadings in italics are related to the adolescent sample.

Cronbach's alpha was .77, consistent with Study 1, and (corrected) item-total correlations ranged between .47 and .59. Correlations between the SPS and SAPS relevant to convergent validity are displayed in Table 2.

Consistent with expectations, we found moderate correlations between the SPS and both the SAPS subscales, in line with the SPS reflecting the combination of perfectionistic strivings and concerns.

Discussion

The results of this study provide further support for the good psychometric properties of the scale on college students. Moreover, convergent validity was supported in that the SPS correlated positively with both the SAPS subscales, thus further supporting the SPS utility in addressing both the components of perfectionism.

Study 3

Studies 1 and 2 provided reasonable support for internal structure, reliability, and convergent validity of the 1-factor, 5-item SPS. In Study 3, we analyzed the psychometric properties of the SPS on a sample of Italian adolescents, to evaluate if this scale might be used with this younger population as well.

Method

Participants and Procedure

After authorization from the Ethical Committee of the University of Florence, we obtained approval from the administrators of secondary schools who authorized gathering data in their schools. Next, we obtained informed consent signed by both the parents and the students before administering the online questionnaire during school lessons.

A total of 310 secondary school students participated. Students ranged in age between 13 and 19 years (M = 16.15, SD = 1.60, 51.3% boys). The Italian system designates students between 13 and 14 years as at "first class" (or year 1) and students between 17 and 18 as at the "fifth class" (or year 5). However, some students may have to repeat a grade and as a result there could be students older than 18 in Italian secondary schools. Students in the sample attended one of three kinds of school in Central Italy, professional school (12.6%), technical school (51.3%), and high school (36.1%). The proportions of students in years 1 to 5 of school were 24.2%, 32.6%, 9.4%, 8.7%, and 25.2%, respectively. The students completed an online questionnaire containing a personal data sheet, the reduced SPS item set, and the Short Almost Perfect Scale (SAPS).

Materials

Study-related Perfectionism Scale (SPS). We administered the SPS items to measure the maladaptive combination of perfectionistic strivings and concerns. Item responses are based on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Short Almost Perfect Scale (SAPS; K. G. Rice et al., 2014). The SAPS measures perfectionistic strivings (Standards subscale) and perfectionistic concerns (Discrepancy subscale). Item responses are based on a 7-point scale ranging from *strongly disagree* to *strongly agree*. Because this instrument has not been evaluated on adolescents, we conducted a preliminary CFA for both the recommended 6-item SAPS (Loscalzo et al., 2019) and the original 8-item version (K. G. Rice et al., 2014). Fit results for the 6-item version, 2-factor SAPS were: CFI = .94, RMSEA = .088 [.053, .126]. Fit results based on the original 8-item, 2-factor SAPS were: CFI = .87, RMSEA = .106 [.084, .129]. Thus, we used the alternative 6-item model . We used Raykov's (2009) guidelines for calculating scale reliability with latent variables based on the 6-item SAPS. For Standards, the reliability estimate was .76 (95% CI: .71-.81). For Discrepancy, scale reliability was .70 (95% CI [.63, .77].

Data Analysis

We performed the analyses with SPSS Version 28, AMOS, and Mplus version 8.4 (Muthén & Muthén, 1998-2019). First, we conducted CFAs to evaluate the goodness of fit of the 1-factor SPS. Next, we evaluated the internal reliability of the SPS and convergent validity based on correlations with the SAPS.

Results

In line with the college student sample (Study 2), we found that the 1-factor, 5-item model had a less than satisfactory fit to the data: CFI = .89 and RMSEA = .117 [.075, .163]. Fit improved by allowing the correlation between the errors of the same items correlated on college students (as indicated by the modification indices): CFI = .99, RMSEA = .032 [.000, .096]. Moreover, the factor loadings were good (standardized values ranged between .48 and .69). Figure 1 shows the graphical representation of this model. The Cronbach's alpha for this sample was .66 (corrected item-total correlations ranging between .35 and .52).

Finally, we analyzed the convergent validity of the SPS based on correlations with the SAPS scores (see Table 2). The SPS moderately correlated with both the SAPS Discrepancy and Standards scores.

Discussion

The results of this study give support to our last hypothesis, namely the SPS has good psychometric properties on both college and adolescent students. We found that the 1-factor, 5-item structure of the SPS fits the adolescents' data well. Moreover, internal consistency was slightly lower than desired for the adolescent sample and lower than what was observed for the college student samples, although a 95% confidence interval for that estimate ranged from .60 to .72, which was within the zone of adequate reliability according to Nunnally and Berstein (1994) for new scales. Hence we conclude that the SPS could represent an efficient screener for maladaptive study-related perfectionism in adolescents, but more research seems warranted.

Regarding convergent validity, we found positive and statistically significant correlations between the SPS and the SAPS subscales. Of note is that the correlations were significant and somewhat lower but generally consistent with those observed in the college student samples. Those results might partly be due to more error in the SPS scores for the adolescents, thus somewhat attenuating correlations. It is interesting to note that the results suggest that there may be some developmental-related differences in maladaptive study-related perfectionism and that the SPS in adolescents covers the perfectionistic concerns component to a greater degree than is the case with college students. We could speculate that some of study-related perfectionism dimensions are more blended in adolescents, then as identity develops perhaps they become more differentiated.

General Discussion

The present study proposed and evaluated the Study-related Perfectionism Scale (SPS), a short new instrument for measuring potentially maladaptive perfectionism (i.e., the combination of high strivings and concerns usually associated with negative outcomes; Stoeber, 2018) in the school context, across different school levels.

We began with an initial pool of 20 items phrased to be applicable for a range of ages and school contexts. Based on EFAs and CFAs with 804 Italian college students, we reduced the SPS to 5 items and one factor. Besides the clear factor structure and internal reliability, the SPS also had good convergent validity, as highlighted by the correlations between the SPS and two other frequently used perfectionism scales (MPS, Hewitt et al., 1991; SAPS, K. G. Rice et al., 2014). The SPS also showed potentially promising psychometric properties based on the adolescent sample. However, as often is the case (see, for example, Roberts & DelVecchio, 2000), reliability estimates were lower for the younger sample compared with those obtained from the older samples. We speculate that there may be some developmental-related differences in study-related perfectionism and that some of the perfectionism dimensions could be more blended or less differentiated in adolescents than in older college students.

The main limitations of this study are due to the samples, which were predominantly students attending courses in Florence for college students (even if many majors are represented), and adolescents attending different schools all located in the same geographic area (Central Italy). Hence, the samples may not be representative of all Italian college and adolescent students. Moreover, the SPS is designed for students from pre-adolescence through young adulthood, but we did not evaluate the scale on early adolescent students (i.e., pre-adolescents aged between 11 and 12 years). Hence, we suggest that future studies should analyze the psychometric properties of the SPS on a younger sample of students. Even better would be longitudinal psychometric studies to examine the stability of the SPS factor structure from early adolescence into young adulthood. Finally, we did not evaluate discriminant validity and we did not include indexes of school-related impairment. We relied instead only on general perfectionism scales as validation criteria.

A main contribution of the present study is support for a short new instrument with good psychometric properties for evaluating maladaptive perfectionism in the academic context and across different school levels. The maladaptive combination of high strivings and concerns (Stoeber, 2018) measured by the SPS may lead to academic impairment and low well-being. Given its brevity and support for its factor structure, the SPS seems suitable for research in academic settings to examine links between (maladaptive) study-related perfectionism, student psychological well-being, and academic performance. Moreover, future studies using both the SPS and general perfectionism scales could help clarify if preventive interventions aiming to improve students' psychological well-being and academic performance should address general perfectionism or/and a specific form of perfectionism related to study, also considering previous studies highlighting that domain-specific measures better predict outcomes than domain-general measures (e.g., Busseri & Mise, 2020; Dunn et al., 2005; Levine & Milyavskaya, 2018). In addition, the SPS could be used for charting the development of maladaptive study-related perfectionism over time, from early adolescence, when academics begin to become much more important than they were in primary school, through the college years. The present cross-sectional studies show the promise of the scale for such work. Charting different trajectories of risk for maladaptive study-related perfectionism would be of particular interest for scholars studying distinctions between states and traits, and for those who work in preventive or tertiary intervention contexts with adolescents and young adults. Due to its brevity compared to the other two scales to measure academic perfectionism currently available in the scientific literature (i.e., APS and CAPS), the SPS might be useful in longer-term longitudinal or shorter-term daily diary studies requiring multiple administrations over different time points. Longitudinal research may also be valuable to examine the relative stability of the factor structure that was suggested based on our samples of adolescents and college students.

Finally, the SPS may be used by practitioners (e.g., school psychologists, counselors, and teachers) for preventive purposes. The SPS may allow detecting students at-risk of maladaptive perfectionism who might then benefit from interventions aimed at supporting their academic success and well-being. Indeed, perfectionism could lead to high impairment not only in academic functioning but also in other aspects linked to the well-being of the person, such as mental health difficulties, studyholism, workaholism, and burnout (Loscalzo & Giannini, 2017a, 2017b). Hence, we believe that addressing the effects of general and maladaptive study-related perfectionism will be valuable to support students' current and future well-being.

Conflict of Interest

The authors of this article declare no conflict of interest.

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