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Multidimensional perfectionism and procrastination: The mediating role of impostor phenomenon

Xiaoguang Wang[1,*], Feier Deng[1], Yuting Zheng[1] and Yun Wang[2,*]

[1]*Department of Applied Psychology, School of Humanities, Jiangxi University of Chinese Medicine, Nanchang, China*
[2]*Science and Technology College, Jiangxi University of Chinese Medicine, Nanchang, China*

**Correspondence: Xiaoguang Wang,* wangxiaoguang0591@126.com*; Yun Wang,* 20192033@jxutcm.edu.cn
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Abstract: This study examined the mediating role of impostor phenomenon (IP) in the relationship between multidimensional perfectionism and procrastination. A cross-sectional survey of 393 Chinese university students (72.5% women; mean age 19.27 ± 1.26 years) completed standardized measures: the *Frost Multidimensional Perfectionism Scale* (FMPS), *Clance Impostor Phenomenon Scale* (CIPS), and *Pure Procrastination Scale* (PPS). Key findings following PROCESS mediation model testing revealed that adaptive perfectionism was associated with higher IP. Maladaptive perfectionism was associated with both higher IP and higher procrastination levels. IP acted as a significant suppressing mediator in the association between adaptive perfectionism and procrastination. While adaptive perfectionism was lower with procrastination, it was associated with higher IP experiences, and higher procrastination. The indirect weakened the relationship between adaptive perfectionism and procrastination. These findings align with the Self-Regulation Resource Model (SRRM), which proposes that negative emotions and maladaptive cognitive processes potentially impair the ability to resist immediate temptations and prioritize long-term goals. Student counselling and development services should provide maladaptive perfectionism and IP interventions to help reduce procrastination in college students.

Keywords: procrastination; multidimensional perfectionism; impostor phenomenon; self-regulation; college students

Introduction

Procrastination, characterized by the irrational delay of tasks despite potential negative consequences (Steel, 2007, 2010), is a prevalent challenge among university students, at risk for academic under-performance and psychological disorders (Feyzi Behnagh & Ferrari, 2022; Steel & Klingsieck, 2016). Some procrastinators have perfectionist tendencies, although the specific relationships remain under-explored (Sirois et al., 2017). For instance, maladaptive perfectionism tends to increase task delay, whereas adaptive perfectionism may reduce it (Sirois et al., 2017), of which self-perceiving as an academic impostor could deplete cognitive resources by intensifying self-doubt and evaluation anxiety. Conceivably, adaptive perfectionism might protect against procrastination by reducing experiences of IP; however, this potential pathway has not been empirically tested. This study directly examines IP mediation in the relationship between maladaptive/adaptive perfectionism and procrastination in college students.

Perfectionism and procrastination

Perfectionism is multidimensional and comprises two broad dimensions: maladaptive perfectionism (e.g., concern over mistakes, doubts about actions, socially prescribed perfectionism) and adaptive perfectionism (e.g., organization, personal standards, self-oriented perfectionism) (Frost et al., 1993; Stoeber & Otto, 2006).

Maladaptive is associated with high procrastination, psychopathological symptoms and negative affect (Sederlund et al., 2020; Sirois et al., 2017). In contrast, adaptive perfectionism is generally associated with positive psychological characteristics (Frost et al., 1993; Stoeber & Otto, 2006).

However, the association between adaptive perfectionism and procrastination remains unclear and contested. While some studies report a negative correlation (Cheng et al., 1999; Sirois et al., 2017; Stoeber et al., 2008), others find no association or even positive effects (Flett et al., 1992; Mahmood et al., 2023). For instance, Flett et al. (1992) found adaptive perfectionism (self-oriented) was not significantly associated with procrastination. Mahmood et al. (2023) observed that adaptive perfectionism (high standards) showed negligible or even positive correlations with procrastination. More empirical evidence is required to explore the potential underlying mechanisms and boundary conditions that may explain when and why adaptive perfectionism might fail to protect against procrastination or even inadvertently foster it. The present study aims to address this gap.

The mediating role of impostor phenomenon

The Impostor Phenomenon (IP) refers to a psychological experience wherein individuals externalize their achievements, persistently doubt their own abilities, believe they have deceived others into believing in their competence, and fear being ultimately exposed as frauds (Clance & Imes, 1978). Conceptually, the core characteristics of IP, such as excessive self-criticism, fear of failure, and attributing success to external factors, closely overlap with the maladaptive perfectionism dimensions. For instance, among the features of IP proposed by Clance (1985), "fear of failure" and "denial of competence" directly correspond to the perfectionism facets of "concern over mistakes" and "doubts about actions" (Dudău, 2014; Pannhausen et al., 2022). Empirical evidence further supports maladaptive perfectionism as a key sustaining factor for IP. A meta-analysis by Hill and Gotwals (2025) revealed a robust

positive association between perfectionistic concerns and IP severity. Pannhausen et al. (2022) explored the relationship between IP and multidimensional perfectionism, their results showed that maladaptive aspects of perfectionism (e.g., doubts about actions, concern over mistakes, and socially prescribed perfectionism) positively predicted IP.

In contrast to maladaptive perfectionism, the relationship between adaptive perfectionism and IP is more complex (Hill & Gotwals, 2025; Pannhausen et al., 2022). Hill and Gotwals (2025) found a small positive relationship between perfectionistic strivings (an adaptive dimension) and IP. Further complexity arises in studies examining specific facets of adaptive perfectionism. Pannhausen et al. (2022) reported that while personal standards, an adaptive facet, showed a positive bivariate correlation with IP, hierarchical regression analyses controlling for maladaptive dimensions (concern over mistakes, doubts about actions) revealed it to be a significant negative predictor of IP. This reversal suggests a suppression effect: When isolated from pathological components, the unique variance of personal standards may exert a protective function against IP experiences.

IP adversely affects psychological well-being (Gadsby & Hohwy, 2024), and procrastination is one of the possible behavioral consequences. In their foundational work, Clance and O'Toole (1987) identified procrastination as part of a cyclical behavioral pattern among individuals experiencing IP, wherein avoidance alternates with periods of overpreparation. Empirical studies consistently link higher levels of IP to increased procrastination. Maftei et al. (2021) reported a significant positive correlation between IP and procrastination in students, with higher impostor tendencies predicting greater procrastination. Similarly, Rohrmann et al. (2016) observed that individuals with an impostor self-concept tended to exhibit both perfectionistic tendencies and procrastination in their work patterns.

Therefore, beyond its potential direct association with procrastination, perfectionism may also relate to procrastination indirectly through its association with IP. We propose distinct mediating roles of IP for adaptive and maladaptive perfectionism. Specifically, we propose that adaptive perfectionism might reduce experiences of IP through promoting structured goal pursuit and organization, thereby decreasing procrastination through more proactive task coping strategies. Conversely, maladaptive perfectionism might increase susceptibility to IP, potentially leading to increased avoidance-oriented coping strategies such as task procrastination. However, we acknowledge that empirical findings regarding these relationships, particularly concerning adaptive perfectionism and IP, remain inconsistent (Hill & Gotwals, 2025; Pannhausen et al., 2022). This inconsistency underscores the maladaptive nature of perfectionism in the context of IP, and highlights the need for further investigation into these complex dynamics.

Theoretical foundations

According to the Self-Regulation Resource Model (SRRM), self-regulatory capacity is a finite resource (Sirois, 2016). Maladaptive perfectionism, characterized by excessive focus on mistakes, self-criticism, rumination, and intense negative emotions (Sirois et al., 2017), is theorized to deplete these resources. This depletion impairs individuals' ability to resist temptations and prioritize long-term goals, thereby increasing vulnerability to procrastination (Feyzi Behnagh & Ferrari, 2022; Eckert et al., 2016; Sirois, 2016; Sirois et al., 2017). Furthermore, chronic self-criticism, a core feature of pronounced maladaptive perfectionism, heightens vulnerability to IP by fostering pervasive self-doubt and an intense fear of failure (Hill & Gotwals, 2025; Pannhausen et al., 2022; Thompson et al., 2000). Deep-seated beliefs about personal inadequacy and low self-efficacy intensify fears of being exposed as frauds, which are associated with significant anxiety and avoidance behaviors like procrastination (Pákozdy et al., 2024; Rohrmann et al., 2016; Thompson et al., 2000; Clance & Imes, 1978).

In contrast, adaptive perfectionism involves internalizing high standards as self-motivation, which can potentially reduce procrastination through proactive task engagement (Frost et al., 1990; Closson & Boutilier, 2017; Sirois et al., 2017). However, research suggests this adaptive pattern may shift under specific conditions. When facing significant evaluative pressure or perceiving tasks as impossible to complete perfectly, adaptive perfectionists may experience a rise in maladaptive cognitions, such as heightened self-criticism (Frost et al., 1990; Sirois et al., 2017; Stoeber & Otto, 2006; Stoeber et al., 2008). This shift is often accompanied by negative emotions and cognitive distortions, including self-doubt and apprehension about evaluation. These processes, along with the associated cognitive load, deplete self-regulatory resources more rapidly (Sirois & Pychyl, 2013). Consequently, procrastination may become a more likely coping strategy as individuals seek to avoid the immediate negative affect associated with the task (Eckert et al., 2016; Sirois & Pychyl, 2013).

Goal of the study

This study aimed to examine the relationship between multidimensional perfectionism and procrastination among university students, with a focus on the mediating role of IP. Based on the SRRM, we proposed a mediation model (see Figure 1), and tested the following hypotheses:

H1: Adaptive perfectionism is associated with low procrastination.
H2: Maladaptive perfectionism is associated with high procrastination.
H3: IP mediates the relationship between adaptive perfectionism and procrastination to be weaker.
H4: IP mediates the relationship between maladaptive perfectionism and procrastination to be stronger.

Methods

Participants and setting

A convenience sample of 393 college students from central China participated in the study. The sample consisted of 108 men (27.5%) and 285 women (72.5%). Participants' ages ranged from 17 to 27 years with a mean age of 19.27 years ($SD = 1.26$).

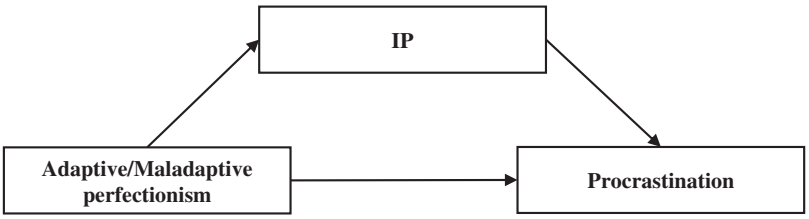

Figure 1. Hypothesized mediation model

Measures

Procrastination

The Pure Procrastination Scale (PPS, Steel, 2010) was used to measure college students' procrastination (as revised by Shen, 2012). The revised scale comprises 10 items, on a 5-point Likert scale ranging from 1 ("completely inconsistent") to 5 ("completely consistent"). A sample item is, "I delay making decisions until it's too late". Higher scores indicate greater procrastination tendencies. In the current study, scores from the PPS achieved an excellent internal consistency ($\alpha = 0.890$).

Impostor phenomenon

The Clance Impostor Phenomenon Scale (CIPS, Clance, 1985) was used to assess impostor feelings. The Chinese version was revised by Jiang et al. (2022), comprises 18 items on three dimensions (Self-Doubt, External Attribution, and Passive Pretense). The items are on a 5-point Likert scale ranging from 1 ("completely inconsistent") to 5 ("completely consistent"). A sample item is, "Sometimes I'm afraid others will discover how much knowledge or ability I really lack". Higher total scores indicate stronger impostor experiences. In the current study, CIPS scores showed excellent internal consistency ($\alpha = 0.921$).

Perfectionism

Perfectionism was measured using the Chinese Frost Multidimensional Perfectionism Scale (FMPS; Zi & Zhou, 2006). The original scale was developed by Frost et al. (1990). The revised scale consists of 27 items across five dimensions: Concern over Mistakes, Doubts about Actions, Organization, Personal Standards, and Parental Expectations. Items are on a 5-point Likert scale in which 1 is "strongly disagree" and 5 is "strongly agree". In this study, the Cronbach's α coefficient for FMPS scores was 0.836 for adaptive perfectionism, and 0.877 for maladaptive perfectionism.

Procedure

The Ethics Committee of Jiangxi University of Chinese Medicine approved the study. All participants consented to the study. They were informed of the study purpose and their right to withdraw from the study at any time during the process. In order to control data quality, an attention check item was included in the questionnaire, requiring participants to select a specific option.

Data analyses

All analyses were conducted using SPSS 26.0. Preliminary analyses included: (1) Harman's single-factor test for common method bias, (2) descriptive statistics ($M \pm SD$) for all variables, and (3) Pearson correlation analyses. Harman's single-factor test was used to assess the common method bias of the survey, resulting in a total of 10 factors with eigenvalues greater than one. The first factor explained 26.0% of the variance, which was less than the 40% critical value (Podsakoff et al., 2003), indicating that the data of the present study did not suffer from any obvious common method bias problem. The hypothesized mediation model was tested using PROCESS v4.0 (Hayes, 2022) with 5000 bootstrap resamples and 95% bias-corrected confidence intervals.

In order to explore the mechanism of the effect of perfectionism on procrastination, IP was introduced as a mediating variable to be substituted into the structural equation modeling in the study. Model 4 in the SPSS macro program Process was used to conduct the mediating effect test. Adaptive perfectionism and maladaptive perfectionism were set as independent variables, respectively, procrastination as the dependent variable, and IP as the mediating variable. Demographic variables such as gender, age were used as control variables to test the mediating role of IP between perfectionism and procrastination.

Effects were considered statistically significant when the confidence intervals did not include zero.

Results

Descriptive statistics and correlation analysis

Table 1 presents the results of descriptive statistics and correlation analyses for the study variables. The college students' procrastination, IP and perfectionism were at moderate levels, and the large standard deviations (SDs) indicate that there were large individual differences in these variables. Correlation analyses revealed: (1) Adaptive perfectionism showed a significant positive association with IP ($r = 0.290$, $p < 0.001$) but no significant correlation with procrastination ($r = 0.036$, $p = 0.482$); (2) Maladaptive perfectionism was strongly correlated with both IP ($r = 0.699$, $p < 0.001$) and procrastination ($r = 0.449$, $p < 0.001$); (3) IP demonstrated a significant positive correlation with procrastination ($r = 0.436$, $p < 0.001$).

Perfectionism effects on procrastination

The study assessed whether adaptive perfectionism could negatively predict procrastination (H1) and maladaptive perfectionism could positively predict procrastination (H2). In the model testing for the direct effects (see Table 2), adaptive perfectionism positively predicted college students' procrastination, but the effect was not significant ($\beta = 0.032$, $t = 0.516$, $p > 0.05$), Hypothesis 1 was not supported.

Table 1. Descriptive statistics and correlations for study variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Adaptive perfectionism	39.494	6.211	(0.820)								
2. Personal Standards	17.817	3.879	0.844**	(0.775)							
3. Organization	21.677	3.599	0.816**	0.379**	(0.858)						
4. Maladaptive perfectionism	43.277	8.865	0.461**	0.622**	0.125*	(0.899)					
5. Concern over Mistakes	14.858	4.578	0.386**	0.541**	0.084	0.869**	(0.882)				
6. Doubts about Actions	13.272	2.701	0.410**	0.488**	0.182**	0.741**	0.563**	(0.689)			
7. Parental Expectations	15.148	3.846	0.314**	0.446**	0.061	0.751**	0.416**	0.335**	(0.812)		
8. Impostor Phenomenon	54.781	11.311	0.290**	0.429**	0.038	0.699**	0.686**	0.600**	0.372**	(0.921)	
9. Procrastination	28.286	7.542	0.036	0.217**	−0.173**	0.449**	0.374**	0.451**	0.273**	0.436**	(0.890)

Note. *: $p < 0.05$, **: $p < 0.01$, high significance, two-tailed.

Table 2. Regression analysis of perfectionism and IP on procrastination

Regression equation		The overall fit index			Significance of regression coefficients	
Dependent variables	**Predictor variables**	***R***	***R*²**	***F***	***β***	**t**
Procrastination		0.132	0.017	0.976		
	Adaptive perfectionism				0.032	0.516
IP		0.301	0.091	5.470***		
	Adaptive perfectionism				0.520	5.781***
Procrastination		0.456	0.208	12.596***		
	IP				0.305	9.608***
	Adaptive perfectionism				−0.127	−2.165*
Procrastination		0.460	0.211	14.740***		
	Maladaptive perfectionism				0.382	9.747***
IP		0.705	0.496	54.202***		
	Maladaptive perfectionism				0.903	19.251***
Procrastination		0.488	0.238	15.011***		
	IP				0.154	3.680***
	Maladaptive perfectionism				0.242	4.492***

Note. *: $p < 0.05$, ***: $p < 0.001$, high significance, two-tailed.

Maladaptive perfectionism positively predicted college students' procrastination ($\beta = 0.382$, $t = 9.747$, $p < 0.001$), Hypothesis 2 was supported.

Impostor phenomenon mediation

Table 3 presents results examining the mediating role of IP in relationships between both adaptive and maladaptive perfectionism and procrastination. Following the mediation analysis procedure outlined by Wen and Ye (2014), we first examined the total effect of adaptive perfectionism on procrastination. The results showed a non-significant total effect (effect value = 0.032, 95% CI [−0.090, 0.155], include 0). According to Wen and Ye's (2014) framework, when the total effect is non-significant, researchers should investigate potential suppressing effects (also termed "masking effects"). A suppressing effect occurs when the indirect effect and direct effect have opposite signs, thereby canceling each other out and resulting in a non-significant total effect (MacKinnon et al., 2000; Wen & Ye, 2014). In this study, the direct effect of adaptive perfectionism on procrastination was significant and negative (effect value = −0.127, 95% CI [−0.241, −0.017], exclude 0), while the indirect effect through IP was also significant but positive (effect value = 0.159, 95% CI [0.083, 0.247], exclude 0). The opposing signs of the indirect and direct effects, coupled with their statistical significance, confirmed the presence of a suppressing effect. Therefore, Hypothesis 3 was not supported, but we found a more complex pattern where IP functions as a suppressor variable that attenuates the observed relationship between adaptive perfectionism and procrastination.

As shown in Table 3, the total effect of maladaptive perfectionism on procrastination was 0.382 (95% CI [0.305, 0.458], excluding 0), indicating a significant total effect. Bootstrapping results indicated that maladaptive perfectionism not only had a significant direct effect on procrastination (effect value = 0.242, 95% CI [0.136, 0.349], excluding 0), but also had a significant indirect effect through IP (effect value = 0.139, 95% CI [0.061, 0.222], excluding 0). As shown in Table 3, the decomposition of total effects revealed that the direct effect accounted for 63.4% of the total impact of maladaptive perfectionism on procrastination, while the indirect effect mediated by IP constituted the remaining 36.6%. This indicates that the relationship between maladaptive perfectionism and procrastination is predominantly driven by direct pathways, with mediation playing a secondary role. These findings suggest that maladaptive perfectionism contributes directly to higher procrastination and further relates to it through its association with elevated IP, supporting Hypothesis 4.

The regression coefficients from the mediation analyses are visualized in Figure 2. Panel (a) displays the paths linking adaptive perfectionism, IP, and procrastination; Panel (b) shows the analogous paths for maladaptive perfectionism.

Table 3. Decomposition of total, direct and mediating effects

		Effect Value	SE	LLCI	UPCI	Effect Size
Adaptive perfectionism	Total effect	0.032	0.062	−0.090	0.155	
	Direct effect	−0.127	0.058	−0.241	−0.017	
	Mediating effects	0.159	0.041	0.083	0.247	
Maladaptive perfectionism	Total effect	0.382	0.039	0.305	0.458	
	Direct effect	0.242	0.054	0.136	0.349	63.4%
	Mediating effects	0.139	0.041	0.061	0.222	36.6%

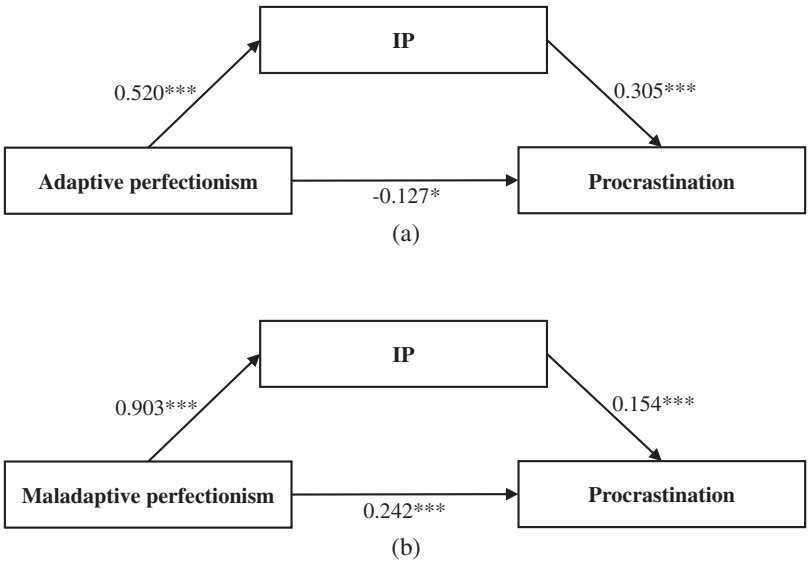

Figure 2. Mediating effect of IP. (**a**) Regression coefficients for the effect of IP on adaptive perfectionism and procrastination; (**b**) Regression coefficients for the effect of IP on maladaptive perfectionism and procrastination. *Note*. *: $p < 0.05$, ***: $p < 0.001$.

Discussion

The result revealed that adaptive perfectionism had a positive but non-significant association with procrastination among college students. This finding contradicts the hypothesis but aligns with some prior research (Flett et al., 1992; Mahmood et al., 2023). On one hand, adaptive perfectionism is associated with high achievement motivation (Stoeber & Otto, 2006). By setting clear personal standards and actively investing effort to achieve goals, adaptive perfectionism may facilitate the conservation or effectively utilize self-regulatory resources (Sirois et al., 2017). This pattern could relate to lower procrastination tendencies, particularly when individuals perceive their capabilities as sufficient to meet their standards and environmental pressures are manageable. On the other hand, when personal abilities are insufficient or environmental pressures make it difficult to meet these standards, the excessive pursuit of high standards may instead be associated with procrastination. This aligns with the SRRM's proposition that such conditions may relate to the emergence of maladaptive cognitive patterns (e.g., self-doubt, fear of failure, self-criticism) and negative emotions (Frost et al., 1990; Sederlund et al., 2020; Sirois et al., 2017). According to the SRRM, these states are theorized to increase cognitive load and contribute to the depletion of self-regulatory resources (Sirois & Pychyl, 2013), potentially increasing susceptibility to procrastination as an avoidance strategy.

The result revealed that maladaptive perfectionism had a significant positive association with procrastination. This finding aligns with the SRRM framework and prior research (Feyzi Behnagh & Ferrari, 2022; Cheng et al., 1999; Sederlund et al., 2020; Sirois, 2016; Sirois et al., 2017), reinforcing the theoretical proposition that maladaptive perfectionism may contribute to the depletion of self-regulatory resources, potentially hindering goal pursuit. Specifically, the current findings align with pathways identified in the literature. First, maladaptive perfectionists tend to exhibit excessive preoccupation with potential mistakes (Frost et al., 1990) and an "all-or-nothing" mindset. These cognitive patterns are associated with task avoidance through heightened perceptions of threat and potential failure, which correlate with increased procrastination (Pychyl & Flett, 2012; Sederlund et al., 2020). The SRRM explains this pattern as resource potentially depletion impairing adaptive cognitive reappraisal. Second, maladaptive perfectionism shows consistent associations with procrastination via its relationship with impaired emotion regulation. Empirical evidence links maladaptive perfectionism to heightened psychological distress, including symptoms of depression, anxiety, and chronic stress (Cheng et al., 1999; Frost et al., 1990; Sederlund et al., 2020). As predicted by the SRRM, the resulting negative affect may contribute to resource depletion (Sirois, 2015). In this context, procrastination often functions as a maladaptive coping strategy, potentially providing

temporary relief from negative affect (Feyzi Behnagh & Ferrari, 2022; Pychyl & Flett, 2012), though at the cost of long-term goal attainment (Steel, 2007).

The mediation model analysis revealed a dual pattern in the association between adaptive perfectionism and procrastination, consistent with propositions from the SRRM. First, adaptive perfectionism exhibited a significant negative direct association with procrastination. This direct effect aligns with its characterization as involving high personal standards and need for order (Locicero & Ashby, 2000), which theoretically correlated with goal commitment and active engagement in tasks, potentially reducing the likelihood of delay. Adaptive perfectionists, driven by internalized high standards rather than fear of failure, may possess greater self-efficacy and tend to utilize more effective self-regulation strategies to initiate and complete tasks, which correlates with lower procrastination (Locicero & Ashby, 2000; Sirois et al., 2017). However, the indirect effect analysis demonstrated a more complex pathway: adaptive perfectionism was associated with higher levels of the impostor phenomenon (IP), which in turn was associated with higher procrastination, resulting in a significant positive indirect effect. This finding can be understood through the core dynamics of IP, characterized by intellectual phoniness, fear of exposure as a "fraud", and attribution of success to external factors or luck (Clance & Imes, 1978; Pannhausen et al., 2022). Individuals with high adaptive perfectionism, despite their striving, may paradoxically experience heightened self-doubt and fear of not sustaining their perceived competence when faced with challenging tasks or evaluations (Dudău, 2014; Sagar & Stoeber, 2009; Yosopov et al., 2024). This internal experience of IP is associated with negative self-evaluation and fear of failure, factors theorized to be precursors to procrastination within the self-regulation framework (Sirois et al., 2017). Importantly, as empirically demonstrated by Brauer and Proyer (2022), the IP experience stems from distorted self-perception (e.g., external attribution of success to luck) rather than reflecting objective performance deficits. This cognitive-attributional mismatch triggers an avoidance motivation, with procrastination becomes a maladaptive short-term strategy to regulate the negative affect (anxiety, dread) associated with this fear and the threat to self-worth (Blunt & Pychyl, 2000; Klingsieck, 2013; Sirois et al., 2017). The opposing signs of the direct and indirect effects confirmed a suppressing effect (MacKinnon et al., 2000; Wen & Ye, 2014), wherein IP masked the true negative relationship between adaptive perfectionism and procrastination. This suppression effect underscores the theoretical complexity highlighted by Sederlund et al. (2020): while the intrinsic motivation and standards of adaptive perfectionism can be protective against procrastination, the co-occurrence of IP—characterized by its disconnect from actual competence (Brauer & Proyer, 2022)—introduces a potent countervailing force. The self-doubt, fear of exposure, and attributional style central to IP (Pannhausen et al., 2022) effectively undermine the positive self-regulatory potential of adaptive perfectionism. Thus, the presence of IP transforms the motivational landscape, where the drive for high standards appears intertwined with the fear of falling short and being discovered, which is strongly associated with the avoidance behavior characteristic of procrastination.

The mediation model analysis indicated that maladaptive perfectionism not only demonstrates a direct association with procrastination but also relates to procrastination through the mediating role of IP. Similarly, the SRRM provides a theoretical framework for understanding these associations. Within this model, self-regulation is conceptualized as a resource. Maladaptive perfectionism, characterized by core features such as excessive concern over mistakes, socially prescribed perfectionism, as well as self-criticism and rumination, is theorized to deplete cognitive and emotional regulatory resources (Sirois, 2016). According to the SRRM, resource depletion may reduce the capacity to resist distractions and temptations, potentially increasing susceptibility to goal disengagement behaviors such as procrastination (Sirois et al., 2017). Critically, IP appears to function as a mediator that may intensify resource depletion within this process. Previous research has identified maladaptive perfectionism as consistently associated with IP experiences (Pannhausen et al., 2022; Sakulku & Alexander, 2011; Thompson et al., 2000). Individuals high in IP often exhibit maladaptive perfectionism traits, such as setting unrealistically high standards and experiencing an extreme fear of failure or mistakes (Dudău, 2014; Pannhausen et al., 2022). This perfectionist tendency prevents the internalization of success, instead leading to attributing achievements to luck or external factors (Thompson et al., 2000). Furthermore, the core elements of IP (self-doubt, fear of exposure, external attribution of success) are linked to heightened anxiety and cognitive load (Caselman et al., 2006; Clance & Imes, 1978), which may further contribute to resource depletion and, consequently, increased procrastination.

Implications for research and practice

This study makes several significant theoretical and methodological contributions. First, integrating these findings with the Self-Regulation Resource Model (SRRM) and prior research, we extend SRRM theory predictions to adaptive perfectionism associations with procrastination. Methodologically, the uncovering of the suppressing mediator role of IP in the relationship between adaptive perfectionism and procrastination clarifies the reasons behind inconsistent findings regarding the association between adaptive perfectionism and procrastination in prior research (Mahmood et al., 2023; Sirois et al., 2017). Furthermore, the finding that IP mediates the pathway between perfectionism and procrastination contributes to expanding the application of the SRRM (Sirois, 2015, 2016) for a more nuanced understanding of how perfectionism relates to procrastination.

The findings of this study also hold significant practical value. First, the established strong association between maladaptive perfectionism and procrastination suggests potential value in student counselling and development interventions targeting its dysfunctional components (e.g., excessive concern over mistakes, doubts about actions). Given IP's role as a central mediating mechanism, interventions could benefit from directly addressing IP

experiences to potentially reduce the observed negative relationship between perfectionism and procrastination. Such tailored strategies may enhance the precision and effectiveness of interventions aimed at reducing procrastination.

Limitations and future directions

This study has several limitations. First, the single-university sample limits generalizability. Second, the use of self-report measures carries unknown social desirability effects. Third, the FMPS employed a dichotomous categorization (adaptive/maladaptive) for parsimony; however, this approach may obscure the differential effects of specific perfectionism subdimensions. Finally, a significant limitation lies in the cross-sectional research design. Extensive methodological research (e.g., Maxwell & Cole, 2007; Maxwell et al., 2011; Mitchell & Maxwell, 2013) indicates that mediation analyses based on cross-sectional data may yield biased estimates and prevent definitive causal conclusions.

Future research should address these limitations through several key improvements. First, sampling should be expanded to enhance generalizability. Second, future studies should combine multi-method assessments (e.g., behavioral tasks) with statistical controls to reduce common method bias. Third, future analyses should examine individual FMPS subscales or use person-centered techniques (e.g., Latent Profile Analysis) to better capture the multidimensional nature of perfectionism. Fourth, the bifactor model for the Chinese CIPS should be validated, as recommended by Brauer and Proyer, 2025. Finally, future studies should employ longitudinal or experimental designs to examine causality and dynamic processes within these mediating pathways. Additionally, exploring additional mediators (e.g., social pressure) would further clarify the complex mechanisms.

Conclusions

Grounded in the SRRM, this study examined the mediating role of IP in the relation between perfectionism and procrastination. The study results indicated a suppressor effect of IP on the association between adaptive perfectionism and procrastination. Although adaptive perfectionism showed a significant negative association with procrastination, it was simultaneously associated with higher levels of IP. This association with IP was, in turn, linked to higher procrastination. This pattern aligns with the SRRM proposition that experiences like IP (characterized by self-doubt and fear of exposure) may relate to the depletion of self-regulatory resources, potentially hindering the pursuit of long-term goals. Consequently, this interplay reveals a potential vulnerability within adaptive perfectionism: the presence of IP may attenuate its otherwise negative association with procrastination. Conversely, for maladaptive perfectionism, IP functioned as a partial mediator, accounting for part of its consistent positive association with procrastination. These distinct mediating roles of IP help clarify the differential psychological pathways linking the dimensions of perfectionism to procrastination. Practically, these insights suggest the potential value for student counselling and development from targeting core components of maladaptive perfectionism while also working to address IP experiences.

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