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How Adaptive and Maladaptive Perfectionism Affect Psychological Well-Being among University Students: The Mediating Role of Procrastination*

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Abstract

The principal purpose of the present study is to investigate the mediating role of general and academic procrastination in the relationship between adaptive/maladaptive perfectionism and psychological well-being among university students. The sample comprises 335 undergraduate students, selected through a convenient sampling method. The instruments utilized to gather data included the Almost Perfect Scale-Revised, General Procrastination Inventory, Aitken Academic Procrastination Inventory, and Psychological Well-Being Scale. In order to test the hypotheses put forward in the research, two separate parallel mediation analyses were performed. The results revealed that general procrastination fully mediated the relationship between adaptive perfectionism and psychological well-being. Furthermore, general procrastination has a partial mediating effect in the relationship between maladaptive perfectionism and psychological well-being. The mediating role of academic procrastination was not statistically significant in the mediation model for both dimensions of perfectionism. The results also provide robust evidence to confirm the assumption that adaptive and maladaptive perfectionism are distinct constructs and that these constructs affect psychological outcomes differently. The implications for counselors and mental health professionals, as well as future research directions, are discussed in light of the existing literature and the limitations of the study. Recommendations are then made.

Key Words

Adaptive perfectionism • Maladaptive perfectionism • General procrastination • Academic procrastination • Psychological well-being • University students

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Introduction

The concept of perfectionism, as a personality trait, and its consequences have been and continue to be the subject of numerous studies (e.g., Ashby, Rice, & Martin, 2006; Flett & Hewitt, 2014; Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991; Mirzairad, Haydari, Pasha, Ehteshamzadeh, & Makvandi, 2017; Stöber & Joormann, 2001). In the literature, perfectionism is typically conceptualized as a multidimensional construct, rather than as a unidimensional one (Dunkley, Sanislow, Grilo, & McGlashan, 2006; Frost, Lahart, & Rosenblate, 1990; Hamackek, 1978; Hewitt & Flett, 2002; Hewitt & Flett, 1991; Slaney, Ashby, & Trippi, 1995; Stoeber & Otto, 2006). Hewitt and Flett (1991), and Frost and colleagues (1990) are among the researchers who emphasize that perfectionism should be considered multidimensional. Hewitt and Flett (1991) suggested three dimensions of perfectionism: *self-oriented, other-oriented*, and *socially prescribed perfectionism.* Self-oriented perfectionists have extremely high standards and strive to meet them, and this process is adaptive. In contrast, the high standards and expectations of other-oriented perfectionists are directed at others. Finally, socially prescribed perfectionism involves the constant need to meet the demands of others to sustain one's own self-worth. On the other hand, Frost and colleagues (1990, p.449) developed a multidimensional perfectionism scale, which identified the following dimensions of perfectionism: "*excessive concern about making mistakes, high personal standards, perception of high parental expectations, perception of high parental criticism, doubt about the quality of one's actions, and order and organization"*. Upon examination of the existing literature, it becomes evident that some researchers have grouped perfectionism into two or three dimensions in a more inclusive and general manner. For instance, Hamackek (1978) described two types of perfectionists: *normal* and *neurotic.* Normal perfectionists are able to apply their standards flexibly. Conversely, neurotic perfectionists are driven by an unrelenting pursuit of perfection, which is never deemed enough. Even when a task is successfully completed, neurotic perfectionists remain unsatisfied and feel emptied. Similarly, Slaney and colleagues (1995) categorize perfectionism as *"adaptive"* and *"maladaptive"*. This categorization has been supported by numerous empirical studies in the literature (e.g., Hill, McIntire, & Bacharach, 1997; Rice & Mirzadeh, 2000; Stoeber & Otto, 2006). Adaptive perfectionism is identified as a positive effort for success (Dunkley, Sanislow, Grilo, & McGlashan, 2006; Frost, Marten, Lahart, & Rosenblate, 1990; Stoeber & Otto, 2006). By contrast, individuals who exhibit maladaptive perfectionism tend to be overly critical in their self-evaluations. Some researchers have also proposed a three-group classification of perfectionism. They are: *"healthy perfectionists"* (also referred to as "adaptive perfectionists"), *"unhealthy perfectionists"* (also referred to as "maladaptive perfectionists") and "*non-perfectionists"*. Consequently, healthy perfectionists align with the definition of normal perfectionists as proposed by Hamachek (1978), whereas unhealthy perfectionists are classified as neurotic perfectionists. Finally, low levels of perfectionistic striving and ambiguous levels of perfectionistic concerns are observed in the non-perfectionist group (Park & Jeong, 2015; Stoeber & Otto, 2006).

In reviewing the existing literature, it is noticeable that a considerable number of studies have centered on the two-factor model of perfectionism, defined as 'adaptive' and 'maladaptive'. Specifically, research has highlighted the role of maladaptive perfectionism in the development and maintenance of a broad range of psychological symptoms and disorders, including depression, anxiety, and eating disorders (Bieling, Israeli, & Antony, 2004; Flett & Hewitt, 2006; Shafran & Mansell, 2001; Stöber & Jormann, 2001). In contrast, adaptive perfectionism is associated with

positive health indicators and psychological traits, such as psychological well-being, self-efficacy, perceived social support, coping, less vulnerability and fewer self-defeating behaviors (e.g., Bieling, Israeli, & Antony, 2004; Dunkley, Sanislow, Grilo, & McGlashan, 2006; Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Enns, Cox, & Clara, 2002; Frost, Marten, Lahart, & Rosenblate, 1990; Stoeber & Otto, 2006). Therefore, perfectionism is considered to be a determinant not only of negative but also of positive psychological functioning. In addition, the explanations of Kahler (1975), who introduced the concept of "drivers" as a basic concept of Transactional Analysis ─ an approach to counseling and psychotherapy ─ provide substantial evidence that these constructs are distinct. Kahler (1975) defined the concept of "drivers" as an intrinsic motivational force and proposed that when this motivational force is present in excessive amounts, it can lead to dysfunctional behavior. In other words, Kahler emphasizes that drivers have positive aspects as long as they are not overused. One such driver is "Be Perfect!". Researchers other than Kahler have also drawn attention to the positive aspects of drivers (Hazell, 1989; Klein, 1987; Tudor, 2008). For example, Hazell (1989) defines drivers as habits we use to cope with challenges and emphasizes that they are useful and positive when well managed and used to achieve. To emphasize this positive aspect, he renamed the driver "Be Perfect!" to "Be Right!". Furthermore, Klein (1987, p.156) asserted that "*a person with the "Be Perfect!" driver has a better idea of how to live well than the majority of people, that he/she is not concerned with the actions of others while maintaining high standards for himself/herself, and that a perfectionist individual may be the wisest, most stable, warmest, and nicest person we can observe, with the exception of intolerance and autocratic self-righteousness*". Consequently, the aforementioned feature of the "Be Perfect!" driver can be considered to correspond to both adaptive and maladaptive aspects of perfectionism. For this reason, the present study also focused on both the adaptive and maladaptive dimensions of perfectionism.

One of the principal variables under investigation in this study is psychological well-being, which is introduced by positive psychology and is also a multidimensional construct that includes happiness, life satisfaction, mental and emotional health (Diener et al., 2010). Seligman and Csikszentmihalyi (2000) posit that individuals who frequently experience positive affect and actively participate in meaningful activities will exhibit high levels of psychological well-being. It has been emphasised by researchers that merely avoiding mental disorders is not sufficient to talk about the existence of psychological well-being. In addition, it is necessary to possess positive psychological resources, including positive affect, happiness, and life satisfaction (Bartram & Boniwell, 2007; Sin & Lyubomirsky, 2009). The concept of psychological well-being has been extensively researched by researchers through the development of theoretical models and frameworks. Among the various models that have been proposed, the most widely accepted is Ryff's six-factor psychological well-being model. Ryff (1989) defines psychological well-being as an umbrella concept encompassing six components: "*self-acceptance, positive relationships with others, autonomy, mastery of the environment, a sense of purpose and meaning in life,* and *personal growth and development".* A review of the literature indicates that perfectionism has a negative effect on psychological well-being. Despite this, studies have revealed that there may be differences in the effects of adaptive and maladaptive perfectionism on psychological well-being. In other words, while there is a negative relationship between maladaptive perfectionism and psychological well-being, the relationship between adaptive perfectionism and psychological well-being is positive (Bulina, 2014; Fallahchai, Fallahi, & Moazen Jami, 2019; Flett & Hewitt, 2006; Kruger, Jellie, Jarkowski,

Keglevich, & On, 2023; Stoeber & Otto, 2006). The results of these studies suggest that future investigations should consider examining the concepts of adaptive and maladaptive perfectionism as distinct constructs. Given the potential differences in the effects of each, this approach could provide a more deeply understanding of the relationship between perfectionism and psychological well-being.

Another variable in the study is procrastination behaviour, which is considered to be prevalent and affects numerous aspects of life. Procrastination is identified as "*the voluntary postponement of an intended action despite the expectation that the delay will be detrimental"* (Steel, 2007, p.66) and is defined as a self-sabotage behaviour (Ferrari & Tice, 2000). It is estimated that approximately 20% of adults are chronic procrastinators (Ferrari & Tice, 2000), while more than 70% of university students are academic procrastinators who regularly delay completing homework or studying for exams (Schouwenburg, Lay, Pychyl, & Ferrari, 2004). In other words, academic procrastination, a special type of procrastination, is a common behaviour among students (Ferrari, 2001; Rozental & Carlbring, 2014; Schraw, Wadkins, & Olafson, 2007), and is a universal experience (Subotnik, Steiner, & Chakraborty, 1999). Steel and Klingsieck (2016, p.37) define academic procrastination as "*the voluntary postponement of an intended action related to study, despite the expectation of being worse off because of the delay"*. Students who engage in academic procrastination unnecessarily postpone priority activities and spend their time on non-priority, unrelated tasks (Ferrari & Tice, 2000). This situation has been found to negatively affect students' academic achievement (Goroshit, 2018; Kim, Fernandez, & Terrier, 2017; Kim & Seo, 2015; Yurtseven & Akpur, 2018). Researchers have suggested that fear of failure and self-regulation are the main causes of academic procrastination (Rozental & Carlbring, 2014; Zarrin, Gracia, & Paixão, 2020). Some researchers posit that procrastinators determine their own values according to their successes and failures (Balkış & Duru, 2012), and that they activate the fear of failure in order to avoid feelings of worthlessness. Additionally, studies indicate that students with a high tendency towards academic procrastination exhibit low self-regulation skills (Park & Sperling, 2012; Uzun Özer, Demir, & Ferrari, 2009; Zarrin, Gracia, & Paixão, 2020). Consequently, in this study, given that academic procrastination is a common issue among university students, the general procrastination tendency was considered together with the academic procrastination tendency.

A review of the literature reveals that procrastination is associated with low self-esteem and low self-regulation, self-discipline, ineffective learning skills, anxiety, depression, fear of failure and irrational thinking (e.g., Ferrari, 1992; Ferrari & Beck, 1998; Lay, 1986; Stöber & Joormann, 2001; Zarrin, Gracia, & Paixão, 2020). The results of these studies permit the reasonable assumption that procrastination is associated with decreased psychological well-being. Indeed, several studies have indicated that general procrastination is associated with poor well-being and high psychological distress (Jayaraja, Tan, & Ramasamy, 2017; Rice, Richardson, & Clark, 2012; Siriois, 2007; Sirois &Tosti, 2012). In studies on academic procrastination, students who tend to procrastinate are found to be dissatisfied with their academic performance, experience high levels of stress and anxiety (Kim & Seo, 2015; Steel, 2007), furthermore, their psychological well-being levels are low (Ahmad & Munir, 2022; Balkış & Duru, 2016; Krause & Freund, 2014, 2016; Vlachopanou & Karagiannopoulou, 2022). Morover, a comprehensive review of the existing literature suggests that there is a significant relationship between perfectionism and procrastination behaviour. Considering the two-factor structure of perfectionism, which was previously outlined, there are studies that provide

evidence of a positive relationship between procrastination behavior and maladaptive perfectionism rather than adaptive perfectionism. However, research findings have indicated that procrastination behavior is negatively related to adaptive perfectionism (Ahmad & Munir, 2022; Blackler, 2011; Kurtovic, Vrdoljak, & Idzanovic, 2019; Rice, Richardson, & Clark, 2012; Yurtseven & Akpur, 2018). As previously stated, there are research results indicating that adaptive perfectionism also positively affects psychological well-being.

The aforementioned research findings collectively indicate that perfectionism is not an entirely unhealthy structure. However, Stoeber and Otto (2006) highlight that although numerous studies have investigated the relationship between maladaptive perfectionism and negative psychological functioning, it remains unclear whether adaptive perfectionism is related to positive psychological functioning, such as psychological well-being. Furthermore, the specific variables through which this relationship may emerge remain undetermined. In other words, the mechanisms by which adaptive perfectionism supports psychological well-being have not yet been fully elucidated. Upon examination of the literature, it becomes evident that there is a paucity of studies investigating this issue (Ahmad & Munir, 2022; Bieling, Israeli, & Antony, 2004; Bulina, 2014; Chang, Watkins, & Banks, 2004; Kamushadze, Martskvishvili, Mestvirishvili, & Odilavadze, 2021; Kruger, Jellie, Jarkowski, Keglevich, & On, 2023; Rice, Richardson, & Clark, 2012). Therefore, this study attempts to reinforce the evidence that adaptive and maladaptive perfectionism affect psychological well-being in different ways and to examine how these two constructs affect psychological well-being through the mediating effect of general and academic procrastination among university students.

Current Study

This study set out with the intention of conducting further research to clarify the relationship between adaptive and maladaptive perfectionism, general and academic procrastination, and psychological well-being among university students in young adulthood, where procrastination behaviour is commonly observed. The main purpose of this study is to examine the mediating role of general and academic procrastination behaviour in the relationship between adaptive/maladaptive perfectionism and psychological well-being among university students. In other words, the research rationale is to determine the relationship patterns between these variables. It is therefore also expected that evidence will be provided that adaptive and maladaptive perfectionism are distinct constructs, and that they affect psychological well-being in different ways through the mediation of general and academic procrastination. Based on these rationales, the following hypotheses have been put forward.

H1: General procrastination and academic procrastination act as a mediating variable in the relationship between adaptive perfectionism and psychological well-being among university students, controlling for gender.

H2: General procrastination and academic procrastination act as a mediating variable in the relationship between maladaptive perfectionism and psychological well-being among university students, controlling for gender.

Method

Research Design

The study was carried out using the correlational survey model as a quantitative research design to examine the patterns of relationships among adaptive/maladaptive perfectionism, academic and general procrastination, and psychological well-being among university students. The parallel mediation model was used to analyze the relationships among these variables. The model used psychological well-being as the dependent variable, adaptive/maladaptive perfectionism as the independent variable, and general and academic procrastination as mediators. A mediation model suggests that the independent variable influences the mediator variable, which in turn affects the dependent variable, rather than there being direct causal relationship between the dependent and independent variables (Cohen, Cohen, West, & Aiken, 2003; MacKinnon, 2008). In other words, the mediator variable may clarifies the relationship between the independent and dependent variables. Thus, the direct and indirect effects of adaptive and maladaptive perfectionism on psychological well-being were examined in this study.

Participants

The study recruited 340 undergraduate students from different departments of a public university in Istanbul using the convenience sampling method. After excluding the data of five participants with outliers, the remaining 335 students constituted the sample of the study. The age of the participants ranged from 18 to 27 years (M= 21.23 and SD= 1.80). Of the total participants, 199 (52.4%) were female and 136 (40.6%) were male.

Research Instruments

Participants completed the following four different measures in order. They are: Almost Perfect Scale-Revised, Aitken Academic Procrastination Inventory, General Procrastination Inventory, and Psychological Well-Being Scale.

Almost Perfect Scale-Revised (APS-R): The APS-R is a multi-dimensional scale developed by Slaney and colleagues (2001) to distinguish between adaptive and maladaptive aspects of perfectionism. The scale consists of 23 items, each rated on a 7-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). It includes three subscales: *High standards*, *order*, and *discrepancy*. The original form's subscales demonstrated internal consistencies ranging from .85 to .91. Based on theoretical and empirical research, Slaney and colleagues (2001) suggested that the subscales of the APS-R could be grouped into *adaptive* and *maladaptive*, with the high standards and order subscales representing adaptive perfectionists and the discrepancy subscale representing maladaptive perfectionists. Furthermore, studies using the APS-R have also demonstrated that the scale is able to distinguish between adaptive and maladaptive perfectionism (e.g., Ashby, Dickinson, Gnilka, & Noble, 2011; Bulina, 2014; Fallahchai, Fallahi, & Moazen Jami, 2019; Rice & Mirzadeh, 2000; Slaney, Rice, Mobley, Trippi, & Ashby, 2001), and that the discrepancy subscale, in particular, is a good measure of maladaptive perfectionism (Ashby, Rice, & Martin, 2006; Ashby & Rice, 2002). Sapmaz (2006) conducted an adaptation study of the APS-R for Turkish culture, which revealed an additional dimension of the scale called *'dissatisfaction.'* The four subscales of the Turkish version demonstrated internal consistencies ranging from .72 to .83. The Turkish version assesses adaptive perfectionism by summing high standards and order subscales, whereas it assesses maladaptive perfectionism by summing

dissatisfaction and discrepancy subscales. Higher scores on all subscales indicate a higher level of perfectionism. In this sample, the Cronbach alpha (α) and McDonald's omega (ω) reliability coefficients for adaptive and maladaptive perfectionism were found to be 0.77 and 0.84, respectively, indicating acceptable levels of reliability.

Aitken Academic Procrastination Inventory (AAPI): The AAPI is a scale consisting of 16 items, developed by Aitken (1982) and adapted to Turkish culture by Balkış (2006). The items are rated on a 5-point Likert scale ranging from 'absolutely wrong for me' (1) to 'absolutely right for me' (5). A high score on this scale indicates a high level of academic procrastination. The Cronbach alpha (α) coefficient was found to be .82 in the original form, and 0.89 in the Turkish version. (Balkış, 2006). In this study sample, the Cronbach alpha (α) and McDonald's omega (ω) reliability coefficients were .88.

General Procrastination Inventory (GPI): The GPI is a scale consisting of 15 items developed by Lay (1986) and adapted to the Turkish culture by Balkış (2006). Respondents answer all items on a 5-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). High scores on this scale indicate a tendency to procrastinate in daily routines. The Cronbach alpha (α) reliability values for the original form and Turkish version were .82 and .84, respectively (Balkış, 2006). In the current sample, both Cronbach alpha (α) and McDonald's omega (ω) reliability coefficient were determined to be .87.

Psychological Well-Being Scale (PWB): The Psychological Well-Being Scale (PWB) was developed by Ryff (1989) based on a multidimensional model of psychological well-being. Ryff's scales of psychological well-being measure six constructs: *autonomy*, *environmental mastery*, *personal growth*, *positive relationships with others*, *purpose in life*, and *self-acceptance*. The scale consists of 84 items. The items are rated on a 6-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (6). The PWB was adapted to Turkish culture by Cenkseven (2004). The internal consistency of the Turkish version for the subscales ranged from .74 to .83, with a Cronbach alpha (α) of .93 for the total score. A high score on the PWB indicates a high level of psychological well-being. The Cronbach alpha (α) coefficient for the total score in the current study was also .93. Besides, McDonald's omega (ω) reliability coefficient was found to be .94.

Process

Before starting the data collection process, official approval was obtained from the rectorate of the university where the study was conducted. The researcher administered the measurement tools to the students in a face-to-face setting within the classroom environment. The participants were provided with all the necessary verbal and written information about the measures. They also signed an informed consent form confirming that they had received the necessary information about the research and that their participation was voluntary. The measures were administered and completed within 25-30 minutes.

Data Analysis

Prior to data analysis, it was confirmed that the dataset met the requirements of parametric statistical methods. The skewness and kurtosis coefficients of each variable were calculated to determine whether the data were normally distributed. According to Tabachnick and Fidell (2013), a normal distribution has skewness and kurtosis values

ranging from -1.5 to +1.5. The analysis revealed that the skewness and kurtosis values of all study variables were within the specified limits (-1 to +1) (see Table 1). Next, the standard z-values of the scores obtained from the scales were calculated and the data of the three participants with z-values higher than ±3.29 were excluded (Çokluk, Şekercioğlu, & Büyüköztürk, 2012), as they were considered potential outliers. Based on the calculated Mahalanobis distance value ($p<.001$) for multivariate normality of the dataset, the data of two participants with outlier values were also excluded from the analysis. Finally, the tolerance and VIF values were calculated as a prerequisite for conducting regression-based statistical analyses to determine whether multicollinearity problems existed among independent variables. The tolerance values ranged from .29 to .91 and VIF values ranged from 1.14 to 3.44. A tolerance value lower than 0.10 and a VIF value higher than 10 indicate the presence of multicollinearity among independent variables (Çokluk, Şekercioğlu, & Büyüköztürk, 2012; Hair, Babin, Anderson, & Black, 2019). It can therefore be concluded that there is no multicollinearity problem in this study. Consequently, the research data meets the normality criteria, and there are no multicollinearity problems. Therefore, the use of parametric techniques was deemed appropriate.

Table 1

Means, standard deviations, normality values for the scores of the main study variables (N= 335)

Variables	**M**	**SD**	**Kurtosis**	**$SD_{kurtosis}$**	**Skewness**	**$SD_{skewness}$**
1. APER	5.37	.72	-.04	.27	-.57	.13
2. MAPER	3.66	.98	-.45	.27	.39	.13
3. GPRO	2.52	.73	-.36	.27	.38	.13
4. APRO	2.59	.63	.06	.27	.32	.13
5. PWB	4.47	.52	.76	.27	-.43	.13

Note. APER: Adaptive Perfectionism, MAPER: Maladaptive Perfectionism, GPRO: General Procrastination, APRO: Academic Procrastination, PWB: Psychological Well-Being.

Relationships between variables were examined using Pearson's correlation coefficients before mediation analysis was conducted. The Statistical Package of Social Sciences (SPSS), version 24 for Windows, was used for data analysis. Due to the presence of multiple mediating variables in the study, a parallel mediation model (Model 4) was run using the PROCESS macro, developed by Hayes (2018), for IBM SPSS, using 5.000 bootstrapped sampling. In a parallel mediation model, two or more mediators exist between the independent and dependent variables. In this model, there must be no causal relationship between the mediator variables, and they are entered into the model simultaneously rather than serially, one at a time. The 95% confidence interval was used to evaluate the estimates.

Results

Initial analyses tested the bivariate correlations between all study variables. Then, two parallel mediation analyses were conducted to determine the direct and indirect effects of adaptive and maladaptive perfectionism on psychological well-being. The results are presented below.

Bivariate correlations

Preliminary analyses showing the relationships among adaptive/maladaptive perfectionism, general procrastination, academic procrastination, and psychological well-being are seen in Table 2.

Table 2

Bivariate correlations among study variables (N= 335)

Variables	1	2	3	4	5
1. APER	–				
2. MAPER	.26***	–			
3. GPRO	-.22***	.31***	–		
4. APRO	-.31***	.24***	.83***	–	
5. PWB	.12*	-.43***	-.33***	-.27***	–

Note. APER: Adaptive Perfectionism, MAPER: Maladaptive Perfectionism, GPRO: General Procrastination, APRO: Academic Procrastination, PWB: Psychological Well-Being, *p<.05, ** p<.01 ***p<.001

As seen Table 2, the results revealed that psychological well-being negatively correlated with maladaptive perfectionism (r = -.43, p<.001), general procrastination (r = -.33, p<.001), and academic procrastination (r = -.27, p<.001), but positively correlated with adaptive perfectionism (r = .12, p<.05). Moreover, maladaptive perfectionism was significantly and positively associated with general procrastination (r = .31, p<.001), and academic procrastination (r= .24, p<.001). Finally, adaptive perfectionism was negatively and significantly related to general (r = -.22, p<.001) and academic procrastination (r = -.31, p<.001).

Control (Covariate) Variables

The potential effects of demographic variables on the dependent variable of the study, psychological well-being, was tested. No significant relationship was found between age and psychological well-being (p>.05). Regarding the gender variable, the results of the independent samples t-test showed that there was a significant difference in psychological well-being scores in terms of gender (t= 4.64; p<.001). This finding yielded that psychological well-being levels of women (M= 4.57, SD=.51) were higher than those of men (M= 4.31, SD= .49). The effect size of this difference between genders was tested through Cohen's d technique, and Cohen's d was found to be .51. A Cohen's d value of ≥.50 indicates a moderate effect size (Cohen, 1988). Therefore, gender was included as a covariate variable in the mediation model. Adding a covariate variable to the model allows us to control for its effect on the dependent

variable (Can, 2014). This way, we can see the actual (partial) effects of the independent and mediating variables on the dependent variable.

Parallel Mediation Analyses

Two independent parallel mediation analyses were conducted to test research hypotheses via the regression-based bootstrapping analysis technique, using 5.000 bootstrapped samples. The first parallel mediation analysis was performed to test Hypothesis 1 (H1), which postulates that general procrastination and academic procrastination act as mediators in the relationship between adaptive perfectionism and psychological well-being among university students. Gender was included in the mediation model as a covariate.

Figure 1 illustrates the direct and indirect effects of the proposed mediation model. Upon examination of the direct effects, it is evident that adaptive perfectionism predicts psychological well-being in a positive manner (B_c = .60; p < .001). Additionally, adaptive perfectionism has a significant negative effect on general procrastination (B_{a1}=-.30; p<.001) and academic procrastination behavior (B_{a2}=-.39; p<.001). Moreover, the findings revealed that general procrastination has a negative and significant impact on the psychological well-being of university students (B_{b1}= -1.34; p<.001). Conversely, academic procrastination has no predictive power on psychological well-being (B_{b2}= .29; p>.05).

Upon examination of the indirect effect of adaptive perfectionism on psychological well-being through both general and academic procrastination, controlling for gender, the effect of adaptive perfectionism on psychological well-being becomes statistically insignificant with the inclusion of mediating variables in the model ($B_{c'}$= .32; p>.05). This result indicates the presence of a full mediation effect in the model, as the total indirect effect of adaptive perfectionism on psychological well-being is significant (BootEffect=.28, 95% CI [.040, .562]). In addition, the overall model is found to be significant (R^2 = .15, $F_{(4,330)}$ = 14.30, p< .001) and explaining 15% of the total variance in psychological well-being (see Figure 1).

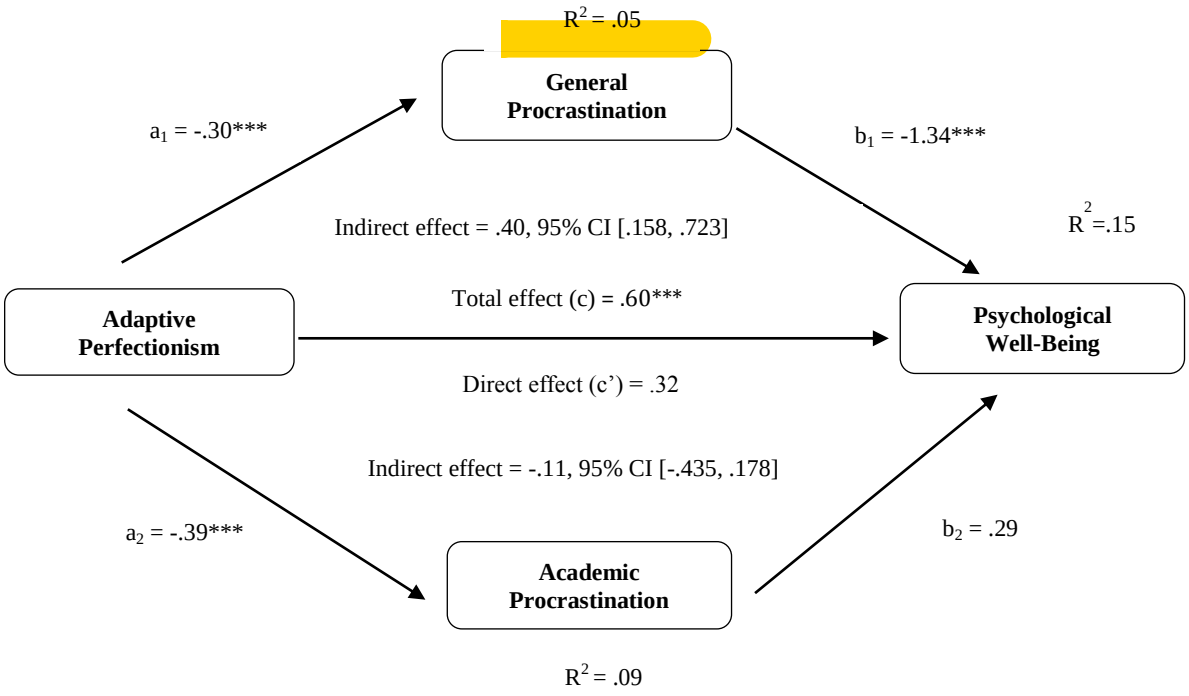

Figure 1. Parallel mediation model for adaptive perfectionism (Unstandardized beta coefficients are reported; *p<.05, **p<.01, *** p<.001)

Table 3

Bootstrapping results regarding the mediating effect of general procrastination and academic procrastination in the relationship between adaptive perfectionism and psychological well-being

	Boot Effect	SE	t	LLCI	ULCI
Total Effect (c: APER→PWB)	.600	.289	2.07*	.030	1.167
Direct Effect (c': APER→PWB)	.316	.293	1.08	-.261	.893
Indirect Effect Total	.283	.134	.	.040	.562
Indirect effect (APER→ GPRO→ PWB)	.396	.142		.158	.723
Indirect effect (APER→ APRO→ PWB)	-.114	.155		-.435	.178

Notes: APER (X: Independent variable); GPRO (M: Mediating variable); PWB (Y: Dependent variable); Covariate variable: Gender (converted to a dummy variable and coded as follows: female=0, male=1); Confidence Level: 95%; Bootstrap sample size: 5000 for percentile bootstrap confidence intervals

A bootstrapping analysis was conducted to test the significance of the full mediation effect of the mediating variables at a 95% confidence interval with a sample size of 5.000. The results indicate that only general procrastination behavior fully mediates the relationship between adaptive perfectionism and psychological well-being (BootEffect= .40, 95% CI [.158, .723]). However, the mediation effect of academic procrastination is not significant (BootEffect= -.11, 95% CI [-.435, .178]). As Hayes (2018) emphasizes that the upper (LLCI) and lower (ULCI) confidence intervals included zero value (0), indicating the insignificance of the mediation effect (see Table 3). Additionally, the completely standardized effect size of the mediation effect is .07, indicating a moderate effect

size. In mediation analysis, an effect size of approximately .01 is considered small, approximately .09 is considered medium, and approximately .25 is considered large (Preacher & Kelley, 2011). These findings yield that adaptive perfectionism has both a direct and indirect effect on psychological well-being through only general procrastination. Therefore, hypothesis H1 was partially confirmed.

To test Hypothesis 2 (H2), proposing that general procrastination and academic procrastination are the significant mediators in the relationship between maladaptive perfectionism and psychological well-being among university students, a second parallel mediation analysis was carried out, controlling for gender.

Upon examination of the direct effects depicted in Figure 2, it becomes evident that maladaptive perfectionism exerts a negative and significant impact on psychological well-being (B_c = -1.47; p<.001). Furthermore, maladaptive perfectionism is a positive and significant predictor of both general procrastination (B_{a1}= .26; p<.001) and academic procrastination behavior (B_{a2}= .18; p<.001). As in Model 1, general procrastination has a negative and significant effect on psychological well-being (B_{b1}= -.83; p<.001). Nevertheless, academic procrastination does not have a significant predictive power on psychological well-being (B_{b2}= .06; p>.05).

The mediation model tested also the indirect effect of maladaptive perfectionism on psychological well-being through general and academic procrastination, controlling for gender. The results revealed that the effect of maladaptive perfectionism on psychological well-being was reduced but remained statistically significant ($B_{c'}$ = -1.26, p < .001), when mediators were included in the model. These results indicate the presence of a partial mediation effect in the model. The total indirect effect of maladaptive perfectionism on psychological well-being was found to be significant (BootEffect = -.21, 95% CI [-.364, -.084]). The overall model is statistically significant (R^2 = .25, $F_{(4,330)}$ = 27.23, p < .001), explaining 25% of the total variance in psychological well-being (see Figure 2).

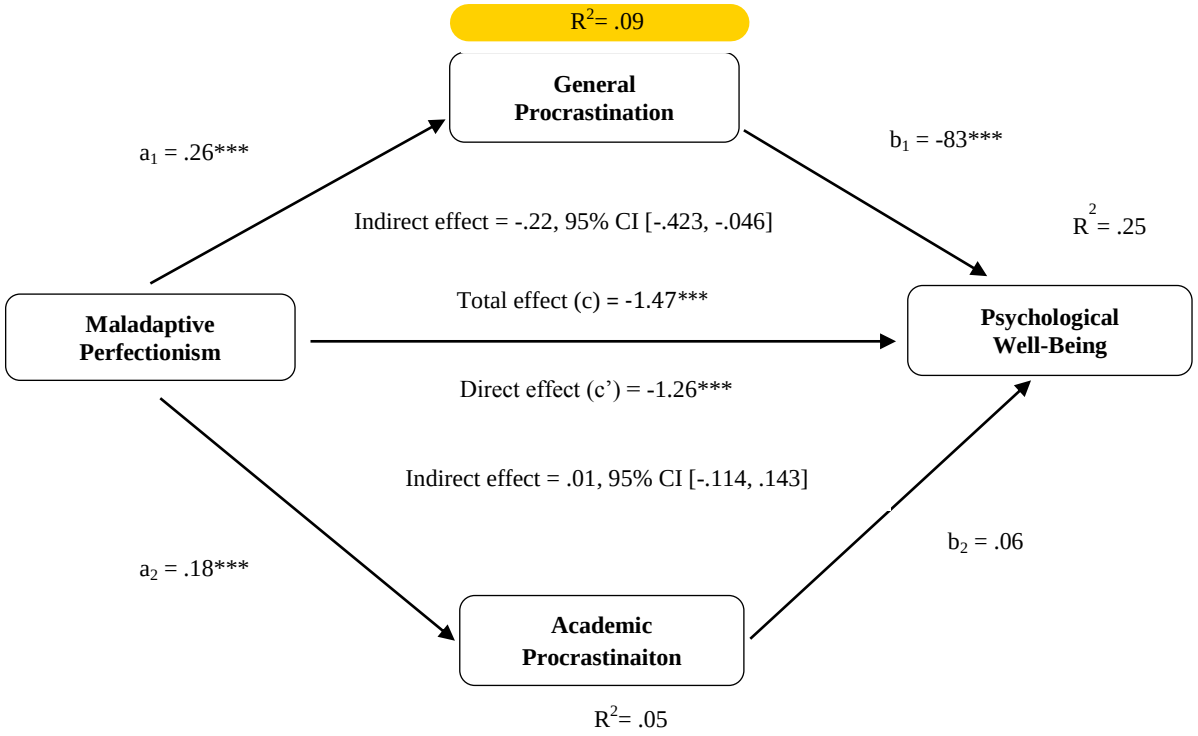

Figure 2. Parallel mediation model for maladaptive perfectionism (Unstandardized beta coefficients are reported;*p<.05, **p<.01, *** p<.001)

Table 4

Bootstrapping results regarding the mediating effect of general procrastination and academic procrastination in the relationship between maladaptive perfectionism and psychological well-being (N= 335)

	Boot Effect	SE	t	LLCI	ULCI
Total Effect (c: MAPER→PWB)	-1.470	.183	-8.02***	-1.830	-1.110
Direct Effect (c': MAPER→PWB)	-1.263	.188	-6.74***	-1.632	-.894
Indirect Effect Total	-.207	.072		-.364	-.084
Indirect effect (MAPER→ GPRO→ PWB)	-.218	.097		-.423	-.046
Indirect effect (MAPER→ APRO→ PWB)	.010	.065		-.114	.143

Notes: MAPER (X: Independent variable); GPRO (M: Mediating variable); PWB (Y: Dependent variable); Covariate variable: Gender (converted to a dummy variable and coded as follows: female=0, male=1); Confidence Level: 95%; Bootstrap sample size: 5000 for percentile bootstrap confidence intervals

A bootstrapping analysis was performed to ascertain the significance of the partial mediator effect within the model, at the 95% confidence interval, utilising a 5.000 bootstrap sample. The findings indicate that only general procrastination behaviour (BootEffect= -.22, 95% CI [-.423, -.046]) plays a partial mediator role in the relationship between maladaptive perfectionism and psychological well-being. This is evidenced by the fact that the lower (LLCI) and upper (ULCI) confidence intervals did not cover zero (see Table 3). Furthermore, the completely

standardized effect size of the mediation effect was found to be .06, indicating a moderate effect size. This implies that maladaptive perfectionism affects psychological well-being only through general procrastination among university students. Therefore, hypothesis H2 was also partially confirmed.

Discussion and Conclusion

The main purpose of this study is to investigate the mediating effect of general and academic procrastination on the relationship between adaptive/maladaptive perfectionism and psychological well-being among university students. The study tested two parallel mediation models to examine the mediating role of general and academic procrastination in relation to the hypotheses. The results of the direct and indirect effects are discussed below.

Direct Effects

The research initially examined the direct effects of adaptive and maladaptive perfectionism on psychological well-being. The results demonstrated that adaptive perfectionism positively and significantly predicted psychological well-being, whereas maladaptive perfectionism exhibited a negative and significant effect on psychological well-being. That is, as adaptive perfectionism increased, the psychological well-being of university students also increased. In contrast, an increase in maladaptive perfectionism has been associated with a decrease in psychological well-being. These findings are consistent with those of prior studies (Ahmad & Munir, 2022; Bulina, 2014; Chang, Watkins, & Banks, 2004; Fallahchai, Fallahi, & Moazen Jami, 2019; Jarayaja, Tan, & Ramasamy, 2017; Kamushadze, Martskvishvili, Mestvirishvili, & Odilavadze, 2021; Kruger, Jellie, Jarkowski, Keglevich, & On, 2023; Mirzairad, Haydari, Pasha, Ehteshamzadeh, & Makvandi, 2017; Sapmaz, 2006; Stöber & Joormann, 2001; Stoeber & Otto, 2006). Maladaptive perfectionism is defined as an individual setting high standards for themselves and feeling that they are not "good" or "successful" enough through excessive self-criticism while attempting to meet these standards. Maladaptive perfectionists are characterised by a tendency to worry about making mistakes and being negatively judged, as well as a lack of satisfaction even when a task is successfully completed (Hamachek, 1978; Stoeber & Otto, 2006). All these characteristics are associated with low self-efficacy perceptions (Bulina, 2014; Kruger, Jellie, Jarkowski, Keglevich, & On, 2023) and cause negative affect and anxiety (Dunkley, Sanislow, Grilo, & McGlashan, 2006; Flett, Hewitt, & De Rosa, 1996), which is likely to reduce psychological well-being. Indeed, there are many studies in the literature showing that maladaptive perfectionism is associated with negative psychological functioning such as psychological distress, negative affect, depression and anxiety (e.g., Ashby, Rice, & Martin, 2006; Bieling, Israeli, & Antony, 2004; Chang, Watkins, & Banks, 2004; Dunkley, Sanislow, Grilo, & McGlashan, 2006; Gnilka, Ashby, & Noble, 2013; Stoeber & Otto, 2006). On the other hand, the standards of adaptive perfectionists are high but realistic. When they encounter an obstacle or failure to achieve them, they can continue their efforts steadily and willingly without being affected by the situation and without destructive self-criticism, and they can feel satisfied when they reach the end point (Hamachek, 1978; Stoeber & Otto, 2006). This indicates that their self-efficacy perceptions are high (Bulina, 2014; Stoeber, Hutchfield, & Wood, 2008). Additionally, it has been demonstrated that adaptive perfectionists have higher academic achievement (Enns, Cox, Sareen, & Freeman, 2001; Kruger, Jellie, Jarkowski, Keglevich, & On, 2023). It can be posited that academic success may reinforce self-efficacy beliefs, which in turn may lead to higher levels of psychological well-being. The

results indicated that adaptive and maladaptive perfectionism represent distinct constructs that influence psychological well-being in disparate ways. Furthermore, the results reinforce the assumption that perfectionism has a positive aspect.

In addition, while adaptive perfectionism has a negative and significant effect on general and academic procrastination, maladaptive perfectionism has a positive and significant predictive power on these variables. This implies that as adaptive perfectionism increases, the tendency to general and academic procrastination decreases. Conversely, as maladaptive perfectionism increases, the tendency for general and academic procrastination also increases. These findings are also consistent with previous research findings (Ahmad & Munir, 2022; Blackler, 2011; Kurtovic, Vrdoljak, & Idzanovic, 2019; Rice, Richardson, & Clark, 2012; Yurtseven & Akpur, 2018). Researchers posit that the observed increase in procrastination tendency among maladaptive perfectionists is a consequence of a lack of self-regulation skills and an excessive fear of failure (Ferrari, 1994; Steel, 2007). Maladaptive perfectionists may be more prone to procrastinate in order to avoid unpleasant and disturbing situations and thoughts when they are unable to regulate their emotions, thoughts and behaviours (Rice, Richardson, & Clark, 2012). Conversely, even if adaptive perfectionists have high expectations of themselves, the fact that these expectations are realistic, that they have cognitive flexibility instead of destructive self-criticism, that they have self-regulation skills (i.e., organisation, goal setting and time management), that they enjoy the effort they make in achieving their goals (Park & Jeong, 2015), and that they are willing and determined no matter what, may lead them to procrastinate less. This finding, which demonstrates the divergent effects of adaptive and maladaptive perfectionism on general and academic procrastination, serves to reinforce the assumption that perfectionism is a multidimensional construct.

The data from the study demonstrated that general procrastination had a negative and significant impact on psychological well-being. This finding implies that students who are more prone to general procrastination tend to have poorer psychological well-being. Similar research findings can be found in the literature (Balkış & Duru, 2016; Krause & Freund, 2014, 2016; Sirois & Tosti, 2012; Vlachopanou & Karagiannopoulou, 2022). As previously stated, one of the primary reasons for procrastination is a lack of self-regulation skills (Steel, 2007; Yang, 2021). The weakness of these skills can lead to stress and anxiety (Sirois, 2007), which may in turn weaken the psychological well-being of the students. In addition, another reason for procrastination is the fear of failure (Danne, Gers, & Altgassen, 2023; Steel, 2007; Zarrin, Gracia, & Paixão, 2020). Those who perceive any failure experience or the possibility of facing such an experience, even if it is not concrete and real, as an attack on their self-worth tend to postpone and stop making positive and active efforts to achieve their goals (Balkış & Duru, 2012). This probably results in the feeling that they will not be able to reach their standards. It is possible that this self-created impasse may have an adverse effect on their psychological well-being, potentially leading to feelings of anxiety. However, surprisingly, academic procrastination did not demonstrate a significant predictive power on psychological well-being. This finding is not consistent with previous research findings in the literature (e.g., Ahmad & Munir; 2022; Grunschel, Schwinger, Steinmayr, & Fries, 2016; Assur, 2002; Balkış, 2013; Balkış & Duru, 2016). It can be explained by the fact that academic procrastination behaviour is situational, and limited to academic tasks and does not concern activities of daily routine. In some studies, a relationship was identified between the two variables, although the effect size was quite small. However, the effect varied according to the level of the moderator variable

added to the model. For instance, the findings of Yang's (2023) study indicate that individuals with low self-regulation abilities tend to procrastinate more frequently and experience a decrease in their psychological well-being. Moreover, in the aforementioned study, which compared two distinct cultural contexts, it was emphasized that the effects of procrastination may diverge across cultures and may be influenced by other variables, such as self-regulation and academic achievement. Consequently, examining the effect of academic procrastination on psychological well-being together with mediator and moderator variables can assist in elucidating the ambiguities in previously observed results.

On the other hand, some research findings indicated that students with low academic procrastination exhibited higher academic achievement (Basith, Rahman, & Moseki, 2021; Goroshit, 2018; Grunschel, Schwinger, Steinmayr, & Fries, 2016; Kim & Seo, 2015). This may have enhanced their sense of efficacy and confidence, which may have resulted in heightened motivation. The sense of having a purpose and determination to achieve it is one of the key components of psychological well-being (Ryff, 1989). Furthermore, since academic procrastination represents a specific form of procrastination, it may be beneficial to examine it in conjunction with academic achievement in order to elucidate its relationship with psychological well-being. It is also worth noting that the literature classifies procrastination behaviour as a multidimensional structure, such as perfectionism. Recent research has focused on the phenomena of active and passive procrastination. Active procrastinators are more likely to be motivated to work when faced with a deadline. Even if they deliberately postpone the tasks, they can meet the deadline because they focus on working (Choi & Moran, 2009). In contrast, passive procrastinators do not procrastinate deliberately; rather, they procrastinate because they are unable to make prompt and effective decisions or because they are under time pressure (Chu & Choi, 2005). The findings of the studies indicate that active procrastination is positively correlated with psychological well-being, whereas passive procrastination, as traditionally defined, is negatively correlated with it (Habelrih & Hicks, 2015; İsmail, 2023). Consequently, an investigation of academic procrastination from a multidimensional viewpoint could provide further clarification on the contradictory findings in the existing literature.

Indirect Effects

The results of the mediation analysis indicated that general procrastination fully mediates the relationship between adaptive perfectionism and psychological well-being. Unexpectedly, the mediating role of academic procrastination was found to be insignificant, thereby partially confirming the H1 hypothesis. Furthermore, the results of another mediation analysis provided evidence supporting the partial mediational effect of general procrastination on the relationship between maladaptive perfectionism and psychological well-being. The results yielded that academic procrastination does not act as a mediator in the relationship between maladaptive perfectionism and psychological well-being; thus the hypothesis (H2) was also partially met.

The findings indicate that only general procrastination plays a mediating role in the relationship between adaptive/maladaptive perfectionism and psychological well-being. This finding is consistent with expectations. Although not directly, the results of similar and limited number of studies also support the findings (Ahmad & Munir, 2022; Rice, Richardson, & Clark, 2012). According to the results, as the level of adaptive perfectionism of university students increases, their general procrastination tendency decreases, which leads to an increase in their

psychological well-being levels. Conversely, as the level of maladaptive perfectionism among students increases, their general procrastination tendency also increases, which in turn leads to a decrease in their psychological well-being levels. Both perfectionism and procrastination behaviour are related to self-regulation and fear of failure (Pychyl & Sirois, 2016; Rozental & Carlbring, 2014; Steel, 2007; Uzun Özer, O'Callaghan, Bokszczanin, Ederer, & Essau, 2014; Zarrin, Gracia, & Paixão, 2020). As previously stated, individuals with maladaptive perfectionism exhibit low self-regulation skills and a high fear of failure. These individuals engage in self-criticism and experience a rapid decrease in motivation when faced with negative experiences, which may result in procrastination as a means of avoiding the perceived threat to their self-worth. When individuals procrastinate, the perception that they will never fully achieve the high but unrealistic goals they set for themselves may lead to negative affect and a decrease in life satisfaction, which in turn may negatively impact their psychological well-being. In contrast, adaptive perfectionists, despite having high standards, are able to regulate their negative emotions in the face of obstacles, have high self-efficacy beliefs, and are realistic about their standards. This enables them to continue striving to achieve the standards they set for themselves without losing their perseverance and motivation. Consequently, they are less inclined to procrastinate. In contrast to maladaptive perfectionists, adaptive perfectionists experience a sense of satisfaction when they finalise a task. Therefore, achieving this sense of satisfaction may foster their psychological well-being.

However, as previously stated, academic procrastination does not have a significant direct effect on psychological well-being. Therefore, it does not serve as a mediating factor. Although general procrastination is a personality trait, academic procrastination is situational. Given that academic procrastination emerges in a specific context, it is possible that other variables may also be effective in its emergence. Indeed, in some studies, the effect of academic procrastination on psychological well-being has been examined together with variables that play a mediating or moderating role (Grunschel, Schwinger, Steinmayr, & Fries, 2016; Sirois & Tosti, 2012; Yang, 2023). Consequently, the study can be replicated by establishing more complex models, such as moderated mediation, which would include other variables (e.g. academic achievement, self-regulation, motivational regulation strategies, mindfulness, etc.) that would regulate the relationship between academic procrastination and psychological well-being in the mediation model. This would enable clearer observation of the role of academic procrastination in the effect of maladaptive and adaptive perfectionism on well-being. Furthermore, in this study, procrastination behaviour was examined within a traditional context. As previously stated, recent studies have examined procrastination behaviour as both active and passive (Chu & Choi, 2005; Choi & Moran, 2009; Habelrih & Hicks, 2015; İsmail, 2023). Examining procrastination behaviour with these dimensions may clarify the contradiction between the existing research findings on the relationship in question.

To sum up, students with high levels of adaptive perfectionism tend to engage in general procrastination behaviour to a lesser extent, which may contribute to their higher levels of psychological well-being than students with high levels of maladaptive perfectionism. In other words, it can be stated that the fact that maladaptive perfectionists exhibit more general procrastination behaviour reduces their psychological well-being levels. It can be posited that perfectionism is not merely an unhealthy psychological construct as previously thought, but also contributes to the emergence and strengthening of positive psychological characteristics by motivating individuals,

provided that it is not excessive. "Be Perfect!" driver, which is one of the fundamental concepts of Transactional Analysis, counseling approach, proposed by Taibi Kahler (1975), encompasses both functional and non-functional aspects. This theoretical framework also provides support for the existence of two different dimensions of perfectionism and clarifies the findings on how adaptive perfectionism can affect psychological well-being, both directly and through procrastination behaviour.

In conclusion, the results of the study highlight that maladaptive perfectionism and adaptive perfectionism are two distinct concepts. Furthermore, the results provide strong evidence that adaptive perfectionism increases psychological well-being via a reduction in general procrastination.

Limitations of the Study and Recommendations

It is important to consider the limitations of this study when interpreting the empirical results. Firstly, the study only included university students in young adulthood, which means that the findings can only be generalized to this specific group. Future studies could include individuals in different developmental stages. Secondly, procrastination behaviour is addressed in a general and academic dimension, which means that the results may not be applicable to other contexts. Procrastination can be analysed in various domains of life (e.g., the postponement of job search or taking responsibility in a relationship), in specific situations or in the context of active and passive procrastination. Active and passive forms of the procrastination have been the subject of extensive research in recent years (Habelrih and Hicks, 2015; İsmail, 2016; Kim, Fernandez, & Terrier, 2017; Kooren, Van Nooijen, & Paas, 2024). A further limitation of the study is that the concept of psychological well-being was considered as a whole. Given that psychological well-being is a multidimensional construct, future studies should address these dimensions in order to provide a more comprehensive understanding of the relationship between the variables of the present study.

Another result of the study showed that academic procrastination did not significantly affect psychological well-being. In order to elucidate the conditions under which the relationship between these variables emerges, future studies should consider the potential influence of mediating or moderating variables, such as students' academic achievement and intrinsic motivation. This could be achieved using complex research models such as moderated mediation or sequential mediation models. Qualitative research based on individual or focus group interviews could be conducted to further examine how individuals experience adaptive perfectionism, maladaptive perfectionism, and procrastination and how these are related to psychological well-being.

In addition, suggestions can be made for practitioners. Those working as psychological counselors or other mental health professionals in university counseling centers can prepare and implement psychoeducation or individual/group counseling intervention programs that raise awareness about the adaptive and maladaptive aspects of perfectionism within the framework of primary and secondary preventive and protective counseling services. Thus, students' psychological well-being can be improved. Interventions to reduce procrastination can also be integrated into these programs. Furthermore, these programmes should include activities designed to enhance skills such as time management, organisation, self-regulation, setting priorities, goal-setting, and determination, with the aim of assisting young adults in reducing their procrastination behaviour. In fact, researchers have suggested that interventions based on cognitive-behavioral (Dionne, 2016; Toker & Avcı, 2015; Uzun Özer, Demir, & Ferrari,

2013; Wang et al., 2017), acceptance and commitment-based therapy approaches (Dionne, 2016; Wang et al., 2017), and coherence therapy (Rice, Neimeyer, & Taylor, 2011) may be particularly effective in overcoming perfectionism and procrastination. Furthermore, both relational and experimental studies have demonstrated that mindfulness reduces procrastination and thus increases psychological well-being (Dionne, 2016; Sirois & Tosti, 2012). At this point, it is recommended that mindfulness-based studies that encourage focusing on the moment and the process be employed in order to reduce procrastination and the negative emotions (anxiety, stress, etc.) that arise as a result of procrastination.

Ethic

I declare that the research was conducted in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study. The study approved by Social and Humanities Research and Publication Ethics Committee of Necmettin Erbakan University.

Author Contributions

The manuscript is single-authored and every step (Introduction, Method, Results, Conclusion, Limitations and Reccommendations) has been carried out by the researcher herself.

Conflict of Interest

The author declare that they have no conflict of interest.

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