

ORIGINAL ARTICLE

The role of perfectionism, procrastination, and self-discipline in depression

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BACKGROUND

The aim of the study was threefold: first, to test the associations between perfectionism (adaptive and maladaptive), procrastination (general and decisional), and depression; second, to examine the mediating role of self-discipline between perfectionism and procrastination; and third, to examine gender differences.

PARTICIPANTS AND PROCEDURE

The participants in the study were 347 individuals aged 16 to 48 ($M = 22.77$, $SD = 6.14$). The following measures were used: the General Procrastination Scale, the Decisional Procrastination Scale, the Brief Self-Control Scale, the Center for Epidemiologic Studies Depression Scale, and the Polish Adaptive and Maladaptive Perfectionism Questionnaire.

RESULTS

As a result, maladaptive perfectionism positively contributed to depression, whereas adaptive perfectionism contributed to it negatively. In both the female and male groups, self-discipline was a mediator between maladaptive perfectionism and general and decisional procrastination. Only in the female group was self-discipline a mediator between adaptive perfectionism and general and decisional procrastination. Decisional procrastination me-

diated the link between perfectionism (adaptive and maladaptive) and depression only in the male group. Likewise, the relationship between maladaptive perfectionism and depression was mediated by self-discipline and decisional procrastination in the male group.

CONCLUSIONS

As a result, maladaptive perfectionism positively contributed to depression, whereas adaptive perfectionism contributed to it negatively. In both the female and male groups, self-discipline was a mediator between maladaptive perfectionism and general and decisional procrastination. Only in the female group was self-discipline a mediator between adaptive perfectionism and general and decisional procrastination. Decisional procrastination mediated the link between perfectionism (adaptive and maladaptive) and depression only in the male group. Likewise, the relationship between maladaptive perfectionism and depression was mediated by self-discipline and decisional procrastination in the male group.

KEY WORDS

depression; adaptive and maladaptive perfectionism; general and decisional procrastination; self-discipline

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BACKGROUND

Despite the great impact that procrastination and perfectionism seem to have on human functioning in different areas, few studies as yet have tried to address whether perfectionism and procrastination predict depression (Bieling et al., 2004). Procrastination, defined as a tendency to delay an earlier intention to start or end an important activity (Lay, 1986), has negative consequences in various domains: physical, social, emotional, and mental health. Its detrimental effects include susceptibility to diseases (Sirois et al., 2003), worse mental condition (Stead et al., 2010), and lower work and academic achievement (Nguyen et al., 2013). Two types of procrastination have been distinguished in the literature: general procrastination, which consists in delaying everyday behavioral tasks and activities in time (Mann, 1982), and decisional procrastination, which consists in postponing decisions (Effert & Ferrari, 1989). The two types were found to be related in different ways to personality traits and behavioral addictions (Przepiorka et al., 2016). Perfectionism was also related to negative aspects of functioning, such as the tendency to procrastinate (Saddler & Buckland, 1995), lower self-esteem (Rice et al., 1998), decreased self-efficacy (Locicero & Ashby, 2000), lower life satisfaction (Chang, 2000), and a stronger experience of negative emotions, including depression (Hamachek, 1978).

In our study, we examined perfectionism and procrastination as possible predictors of depression and attempted to explain the underlying mechanisms within the framework of a complex model where the mediating role of self-discipline was assumed. One of the innovations in the present study is the inclusion of two types of perfectionism: adaptive and maladaptive, together with two types of procrastination: general and decisional. Additionally, the relationships were examined for gender differences.

PERFECTIONISM, PROCRASTINATION, AND DEPRESSION

Perfectionism is a multi-faceted phenomenon, and researchers usually take a two-dimensional approach to it, with different terms for its two basic dimensions. Some authors refer to them as positive and negative (Terry-Short et al., 1995), while others prefer to call them active and passive (Adkins & Parker, 1996), adaptive and maladaptive (Rice et al., 1998), functional and dysfunctional (Rheume et al., 2000), or healthy and unhealthy (Stumpf & Parker, 2000). Research on perfectionism has often focused on its maladaptive aspects, such as the negative impact on mental health and well-being. However, self-actualization theory provides an important counterpoint, suggesting that the pursuit of perfection may also

be driven by more positive and growth-oriented motivations (Willmott et al., 2018). The drive towards perfection can stem from an individual's innate desire to realize their full potential and achieve self-actualization. Perfectionistic tendencies may emerge as a manifestation of an individual's quest for self-fulfillment and as part of the continuous process of becoming their authentic self.

A consistent body of literature has highlighted the role of perfectionism in predicting different psychological outcomes. Given that the level of life satisfaction is predictive of depressive symptoms (Headey et al., 1993) it is believed that perfectionism is also positively related to depression. Perfectionists have been found to have high standards and to be afraid of making mistakes; as noted above, they are also less likely to experience high life satisfaction (Chang, 2000), which may be related to the depressive symptoms or even depression found in perfectionists (Koivumaa-Honkanen et al., 2004). Interestingly, the characteristics mentioned above are found in procrastinators as well (Solomon & Rothblum, 1984). Previous studies (Ferrari, 1991) revealed a positive relationship between procrastination and depression. We therefore formulated the following hypotheses:

H1: Perfectionism (adaptive and maladaptive) is positively related to depression.

H2: Procrastination (decisional and general) is positively related to depression.

SELF-DISCIPLINE AS A POSSIBLE MEDIATOR BETWEEN PERFECTIONISM AND PROCRASTINATION

Self-discipline is related to one's ability to control thoughts, emotions, impulses, and performance, and can also be regarded as willpower (Tangney et al., 2004). Unhealthy perfectionism is described as evaluative concerns or a fear of making mistakes, which is often accompanied by self-doubt. Individuals exhibiting this type of perfectionism have a tendency to internalize other peoples' high expectations and blame themselves when failing to meet those expectations (Rice & Ashby, 2007). Such characteristics and related behaviors can foster a failure-avoiding motivation (Ames, 1992), which is closely associated with procrastination. Senécal et al. (1995) found that delaying academic tasks – that is, academic procrastination – involved motivational issues, which were related to a form of self-regulation. Students who regulated themselves procrastinated significantly less, and they were mostly students with intrinsic motivations in academic pursuit. By contrast, students who had less autonomous motivations showed a higher level of procrastination while exhibiting a lower level of self-regulation. The researchers (Senécal et al., 1995) were not sure whether the effect was brought about by the

procrastinators' fear of failure, including negative emotions, or whether it was influenced solely by the type of motivation and the level of self-regulation. For this reason, they later controlled for the "fear of failure" variable and obtained the same results. This shows the very close relationship between self-regulation and procrastination. Similar results were also obtained in a later research study (Çapan, 2010). We therefore hypothesized that self-discipline mediated the effect between the two (H3).

PROCRASTINATION AS A MEDIATOR BETWEEN PERFECTIONISM AND DEPRESSION

Some studies found that perfectionists and procrastinators shared some characteristics; for instance, both groups tended to be afraid of making mistakes (Solomon & Rothblum, 1984), had high standards (Burka & Yuen, 1983), held nonrealistic beliefs (Flett et al., 1991), and valued perpetual success (Flett et al., 1992). Some researchers even tried to draw a causal relationship between the two (Onwuegbuzie, 2000), suggesting that being a perfectionist led to procrastination: people procrastinate because they think they would not be able to meet the ideal standards they set for themselves. A subsequent study (Egan et al., 2011) also yielded a similar conclusion. Because perfectionists generally tend to have high standards, they usually do not have high life satisfaction (Chang, 2000).

Analyzing the relationship between depression and procrastination, Stöber and Joormann (2001) found that the association between the two, in both directions, varied across cases. In some cases, procrastination was related to depression, while in others, negative emotions, including depression, anxiety, and stress, increased procrastination (Steel, 2007). In this light, it becomes evident that, due to their high standards and lower ability to experience life satisfaction, perfectionists have already had larger exposures to stress and negative emotions such as anxiety and emotional drain before tasks (Hamachek, 1978), which means that procrastination only magnifies their negative emotions. On this basis, we formulated hypothesis H4: Procrastination (decisional and general) mediates the relationship between perfectionism (adaptive and maladaptive) and depression.

PARTICIPANTS AND PROCEDURE

PARTICIPANTS

The study initially included 367 participants, but 20 individuals were excluded due to missing data. Consequently, the final sample included 347 participants, aged 16 to 48 years ($M = 22.77$, $SD = 6.14$); 221 of them were female. The mean age of the female

participants was 22.71 years ($SD = 6.46$; range: 16–48), while the mean age of the male participants was 22.89 years ($SD = 5.55$; range: 16–47).

PROCEDURE

A cross-sectional study was conducted among university students in Poland. A trained research assistant provided a briefing on the objectives of the study. The participants were then informed that their participation was voluntary and no monetary reward would be given to them. After receiving consent, the researcher explained the instructions and distributed the questionnaires. The participants were also informed that their responses would be anonymous and that the study was conducted in compliance with the Declaration of Helsinki. The study received approval from the Research Ethics Board at the authors' institution.

MEASURES

The following validated measures were used in the present study:

The General Procrastination Scale (GP-S; Lay, 1986) is used to measure procrastination and consists of 20-items rated on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) ("When it is time to get up in the morning, I most often get right out of bed"). We used a Polish adaptation of the scale (Przepiórka et al., 2016). In the present study, the Cronbach's α coefficient for general procrastination was .77.

The Decisional Procrastination Scale (DP; Mann, 1982) measures delay in making decisions. It is a self-report scale consisting of 5 items using a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) (e.g., "I don't make a decision unless I really have to"). The Polish adaptation of the scale was used (Przepiórka et al., 2016). Cronbach's α reliability of the scale was .85.

The Brief Self-Control Scale (Tangney et al., 2004) measures dispositional self-control. We administered the Polish version of the scale (Błachnio & Przepiórka, 2016). The measure consists of 13 items rated on a 5-point Likert scale from 1 (*not at all like me*) to 5 (*very much like me*). Example items are: "I am good at resisting temptation". Cronbach's α reliability of the scale was .89.

The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977; Eaton et al., 2004; adapted into Polish by Ziarko et al., 2013) measures the level of depression. It consists of 20 items (e.g., "I had trouble keeping my mind on what I was doing"). Participants are asked how often they have felt in the ways described during the past week, and they are to answer on a 4-point scale: 1 – *rarely or none of the*

time (less than 1 day); 2 – some or a little of the time (1-2 days); 3 – occasionally or a moderate amount of time (3-4 days); 4 – most or all of the time (5-7 days). In the present study, Cronbach's α reliability of the scale was found to be .85.

The Polish Adaptive and Maladaptive Perfectionism Questionnaire (Szcucka, 2010) measures two dimensions of perfectionism, comprising its positive and negative components: adaptive perfectionism (Cronbach's α was .85; "I feel good about setting high standards for myself") and maladaptive perfectionism (Cronbach's α was .87; "What I do never seems good enough to me").

STATISTICAL ANALYSIS

Descriptive statistics, arithmetic means, and standard deviations are presented for the whole sample. We applied Pearson's correlation coefficient to examine the relationships between variables. To assess gender differences, we computed independent samples *t*-tests. Where the variances between the groups were found to be heterogeneous, we applied the Cochran-Cox adjustment (Cochran & Cox, 1957).

To examine the relations between depression, self-discipline, perfectionism (adaptive and maladaptive) and procrastination (general and decisional) in the female and male groups, we performed an analysis of structural equation modeling using the maximum likelihood method. Based on previous research (Abdullah, 2017; Afshar et al., 2011; Beutel et al., 2016; Chai et al., 2020; Constantin et al., 2017; Kawamura et al., 2001; Melrose, 2011), we developed a model with perfectionism (adaptive and maladaptive) and procrastination (general and decisional) as predictors of depression. The following statistics were applied as measures of model fit: χ^2 , χ^2/df , RMSEA, SRMR, GFI, CFI, NFI, and TLI (Byrne, 2016; Kline, 2011). To estimate regression weights, correlations, R^2 values, and indirect effects with 95% confidence intervals, we used bootstrapping (5000 samples) with the bias-corrected percentile method (Byrne, 2016; Kline, 2011).

Bootstrapping procedures were also used to explore the mediation effects (Bollen & Stine, 1990; Shrout & Bolger, 2002).

To examine the potential differences in standardized regression weights and correlations, we performed pairwise parameter comparisons between female ($n = 223$) and male ($n = 127$) participants. The critical ratios for differences between parameters with a *z*-score < 1.96 were considered significant (Arbuckle, 2013). All the statistical calculations were performed using IBM SPSS 25 and AMOS 22.

RESULTS

The correlation analysis revealed positive correlations of depression with general procrastination, decisional procrastination, and maladaptive perfectionism. The associations of adaptive perfectionism and self-discipline with depression were negative. General procrastination was found to correlate positively with decisional procrastination and maladaptive perfectionism, but it correlated negatively with adaptive perfectionism and self-discipline. Decisional procrastination correlated positively with maladaptive perfectionism and negatively with self-discipline. Additionally, a positive relationship was found between maladaptive perfectionism and adaptive perfectionism. Self-discipline correlated negatively with maladaptive perfectionism. Detailed findings are presented in Table 1.

Gender differences found for the analyzed variables (Table S1) are included in the Supplementary materials. Detailed results for the relations between the analyzed variables in the female group are presented in Figure 1 and in the male group in Figure 2.

By following the bootstrapping procedures (Bollen & Stine, 1990; Shrout & Bolger, 2002), we found significant mediation effects of self-discipline in both the female and male groups. More precisely, maladaptive perfectionism was found to have a significant indirect effect on general and decisional procrastination via self-discipline. However, a standardized

Table 1

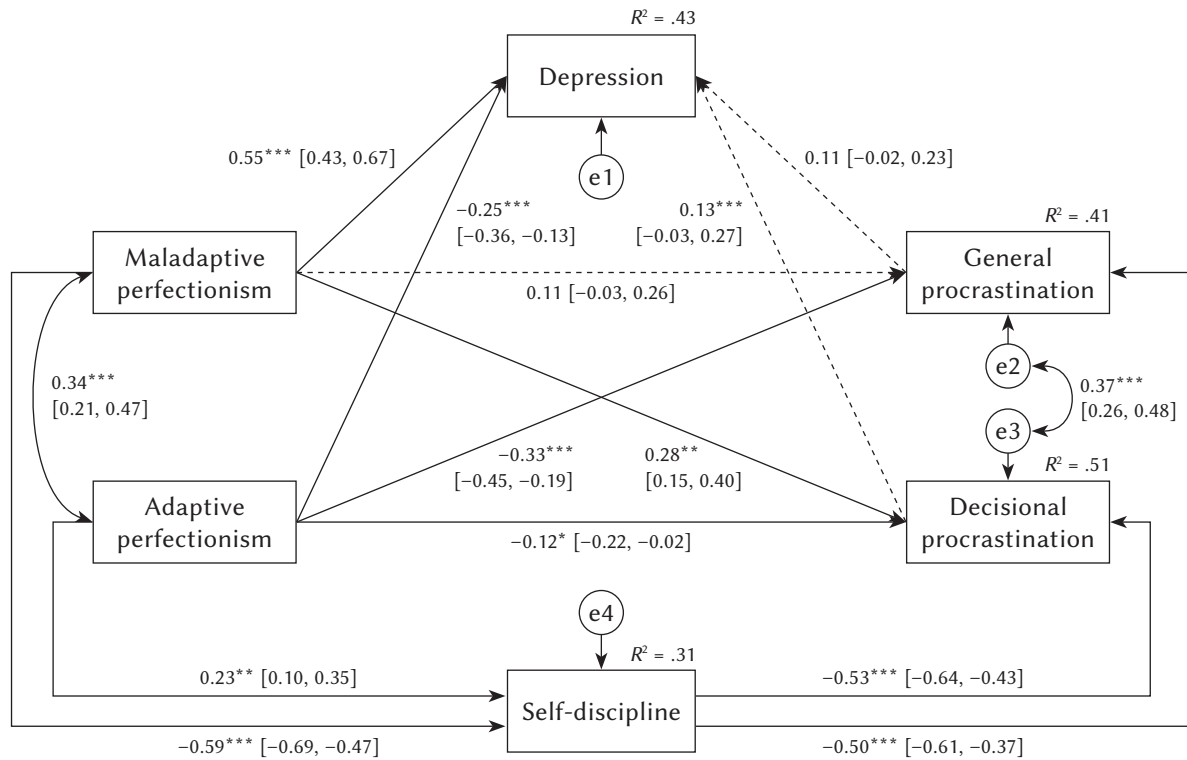
Mean values, standard deviations, and correlations between the analyzed variables in the whole sample ($N = 350$)

Variables	<i>M</i>	<i>SD</i>	[1]	[2]	[3]	[4]	[5]
[1] Depression	2.26	0.58					
[2] General procrastination	2.79	0.53	.36***				
[3] Decisional procrastination	2.83	0.92	.48***	.55***			
[4] Adaptive perfectionism	58.18	16.47	-.12*	-.30***	-.04		
[5] Maladaptive perfectionism	81.03	28.65	.51***	.25***	.48***	.35***	
[6] Self-discipline	2.99	0.55	-.42***	-.50***	-.62***	-.04	-.53***

Note. * $p < .05$, *** $p < .001$.

Figure 1

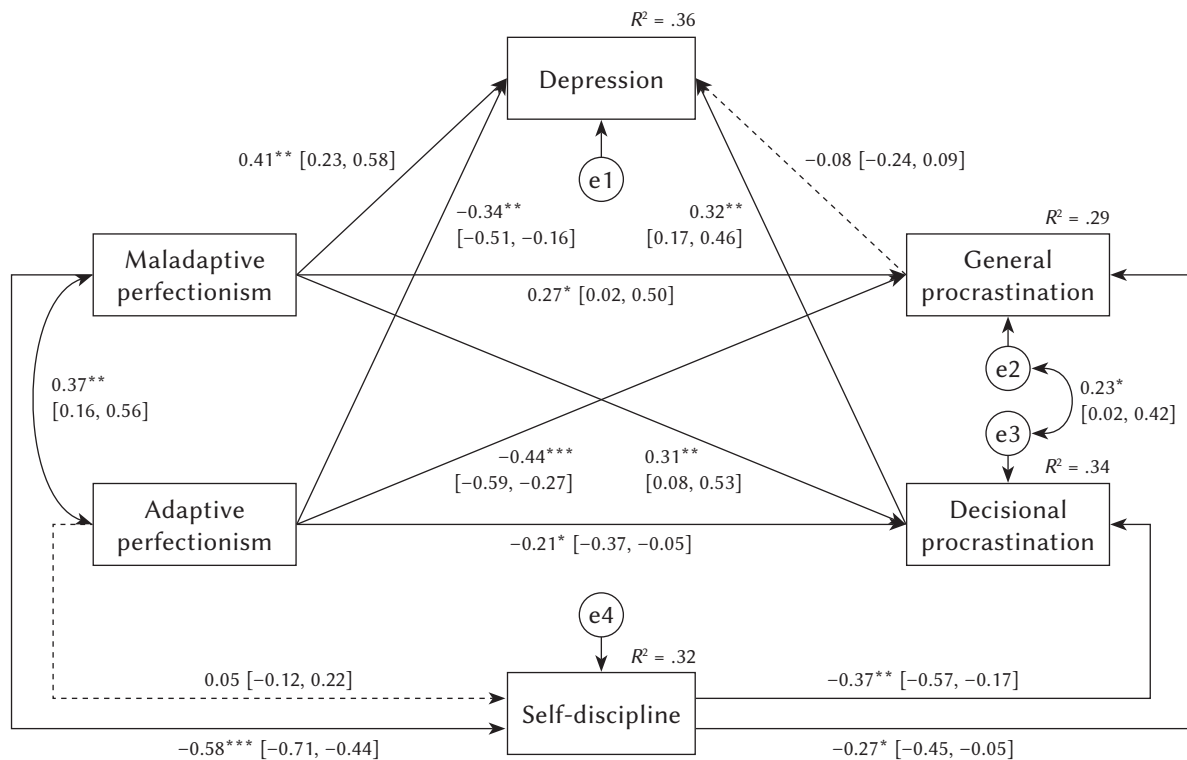
Structural model of relations between the analyzed variables in the female group



Note. $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Figure 2

Structural model of relations between the analyzed variables in the male group



Note. $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

indirect effect of adaptive perfectionism on general and decisional procrastination mediated by self-discipline was found only in the female group. Apart from the above, we found a significant standardized indirect effect between perfectionism (adaptive and maladaptive) and depression via decisional procrastination, but this indirect effect was present in the male group only. Likewise, a standardized indirect effect between maladaptive perfectionism and depression via self-discipline and decisional procrastination was present only in the male group. The bootstrapped standardized indirect effects with 95% confidence intervals in the female and male groups (Table S2) are included in the Supplementary materials.

DISCUSSION

The present study aimed, firstly, to verify how perfectionism and procrastination were related to depression and, secondly, to assess self-discipline as a mediator in the relationship between perfectionism and procrastination. To our knowledge, no previous study has examined the relations among all these variables.

As predicted in H1, our study showed that perfectionism played a significant role in depression, which is in line with previous research showing a relationship between these two phenomena (Afshar et al., 2011). Distinguishing two types of perfectionism, adaptive and maladaptive, the study confirmed that they played different roles in human functioning. Different patterns of the relationship between procrastination and self-discipline were observed. Maladaptive perfectionism positively contributed to depression, which is consistent with the findings reported by Koivumaa-Honkanen et al. (2004), whereas adaptive perfectionism negatively contributed to depression, which can be explained by the difference in the level of satisfaction experienced by the two kinds of perfectionists. Adaptive perfectionists usually gain satisfaction from completing a task (Hamachek, 1978), while maladaptive perfectionists are less likely to experience satisfaction (Chang, 2000). What is more, maladaptive perfectionism was related to decisional procrastination. In the group of men, maladaptive perfectionism was positively related to general procrastination as well.

Adaptive perfectionism was negatively related to procrastination: both general and decisional. Hamachek (1978) identified perfectionism as either “normal” or “neurotic,” which seems to correspond to the concepts of adaptive and maladaptive perfectionism. He asserted that normal perfectionists, later referred to as adaptive perfectionists, valued self-esteem and self-worth highly and that perfectionism brought them satisfaction, leading to a sense of accomplishment and a boost in self-esteem. This could explain

the negative relationship between adaptive perfectionism and procrastination: As procrastination may result in foreseeable negative consequences, adaptive perfectionists would not experience the satisfaction or boost in self-esteem of “being perfect” if they procrastinated.

Apart from distinguishing between adaptive and maladaptive types of perfectionism, Willmott et al. (2018) examined modern perspectives on human motivation, focusing on innate desires and self-actualization tendencies. Their work considered how individuals strive to reduce the discrepancy between their real and ideal selves, and these observations pointed to the underlying psychological mechanism of perfectionism. While striving to reduce the gap between the real and ideal self can be healthy, perfectionism often involves setting unrealistically high standards for the ideal self and employing rigid or inflexible approaches in a person’s quest for excellence (Hryniewicz & Borchet, 2019). The potentially maladaptive nature of these strategies in perfectionists sheds light on the negative relationship between motivation and well-being.

Contrary to H2, only decisional procrastination was positively related to depression in the male group. This could be explained by the gender difference in procrastination. According to previous studies, men procrastinate more than women (Duru & Balkis, 2017), while women experience a higher level of anxiety caused by procrastination (Rothblum et al., 1986). To view the previous and current findings in the context of the whole picture, we can conclude that women are more likely to experience anxiety in the early stage of procrastination as compared to men. They are less likely to procrastinate as much as men do; without such early perception of anxiety, men tend to procrastinate more and experience a higher level of depression, which may be a possible explanation of the positive relationship found between procrastination and depression in the male group.

We found support for H3 in our study. Self-discipline played a mediating role between maladaptive perfectionism and procrastination (general and decisional) in both females and males, which is in line with the related previous findings (Çapan, 2010; Senécal et al., 1995). The relations between adaptive perfectionism and general and decisional procrastination were mediated by self-discipline only in the female group, which may be explained by the cultural differences in the perfectionism pattern between genders: Beck et al. (2004) suggested that men’s perfectionism acted as an expression of authority, while women paid more attention to their physical appearance, because they were more willing to conform to social expectations. In this case, adaptive perfectionism is more likely to correspond to the female perfectionism pattern as described by Beck et al.

(2004), who argued that women were more aware of the social expectations about them (related to self-discipline), which left a mark on their adaptive perfectionism.

Partly in line with H4, decisional procrastination was found to mediate the relationship between perfectionism (adaptive and maladaptive) and depression in the male group. We found that self-discipline and decisional procrastination mediated the link between maladaptive perfectionism and depression only in the male group as well. This is consistent with other studies showing that procrastination is more prevalent among males (Duru & Balkis, 2017; Naveed & Ishtiaq, 2015). In other studies, the patterns of perfectionism and self-discipline were also observed to differ between genders (Masson et al., 2003).

LIMITATIONS

The present study has some limitations. First, due to its cross-sectional nature, causality among the variables investigated cannot be assumed without further rigorous study. The study also adopted self-report measures, and there is a possibility that the prevalence of procrastination or depression was underestimated due to the social desirability effect. Finally, it is possible that other psychological traits, such as negative affect, may also affect the relationship of the investigated variables. Future studies should further examine whether and how these variables affect perfectionism and procrastination in other age groups, especially among adolescents.

CONCLUSIONS

In conclusion, the present study is the first to empirically explore the relations between perfectionism, procrastination, and depression, with self-discipline as a possible mediator. The study supports the positive association between procrastination and perfectionism in young adults. Its results suggest the importance of reducing maladaptive perfectionism and fostering adaptive perfectionism in preventing depression in this age group.

Supplementary materials are available on the journal's website.

DISCLOSURES

This research received no external funding. The study was approved by the Bioethics Committee of the John Paul II Catholic University of Lublin (Approval No. KEBN 10_2020). The authors declare no conflict of interest.

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