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Multidimensional Perfectionism, Depression, and Satisfaction With Life: Differences Among Perfectionists and Tests of a Stress-Mediation Model

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This study examined the relationship between adaptive and maladaptive perfectionism, stress, depression, and satisfaction with life in a sample of undergraduate women. The authors found that maladaptive perfectionists had lower satisfaction with life and higher stress and depression scores compared with adaptive perfectionists. Results also indicated that stress mediated the relationship between maladaptive perfectionism and depression and between both maladaptive and adaptive perfectionism and satisfaction with life. Implications for college counselors are discussed.

College counseling center professionals have expressed a growing interest in the personality trait of perfectionism. For instance, the Research Consortium of Counseling and Psychological Services to Higher Education (1995) reported that 21% of men and 26% of women seeking counseling at college counseling centers reported that perfectionism was "quite distressing or extremely distressing" to them. More recent studies (e.g., Rice & Ashby, 2007) have identified two categories of perfectionism—adaptive or maladaptive—with maladaptive perfectionism being significantly associated with higher levels of depression and lower levels of self-esteem (Ashby, Rice, & Martin, 2006). In contrast to the problematic nature of maladaptive perfectionism, adaptive perfectionism has been shown to be associated with a number of positive outcomes, including higher self-esteem (e.g., Rice & Dellwo, 2002), positive stress-coping strategies (Rice & Lapsley, 2001), higher levels of assertiveness and life direction (Ward & Ashby, 2008), and greater self-efficacy in career decision making (Ganske & Ashby, 2007).

The identified distinctions between maladaptive and adaptive perfectionism are consistent with the earlier conceptual work of Hamachek (1978) identifying two distinct groups of perfectionists: "normal" and "neurotic." According to Hamachek, neurotic perfectionists are those individuals who hold high personal standards but are incapable of feelings of fulfillment even when those standards are attained. As a result, these perfectionists experience "impaired health, poor self-control, troubled personal relationships, low self-esteem, . . . depression, and anxiety" (Burns, 1980, p. 34). Normal perfectionists, similar to their neurotic counterparts, are also people who hold high

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standards, but they allow themselves to be less exacting in their work as the circumstances allow (Hamachek, 1978). As a result, "normal perfectionists tend to enhance their self-esteem, rejoice in their skills, and appreciate a job well-done" (Hamachek, 1978, p. 27).

Despite the evidence that different types of perfectionism are related to differential psychological outcomes, Chang (2000) noted that "the influence of perfectionism on indices of positive and negative psychological outcomes has yet to be fully examined or understood" (p. 19). However, one promising line of inquiry has identified stress as an important factor in the relationship between perfectionism and psychological outcomes (e.g., Blankstein & Dunkley, 2002). Chang (2000) specifically identified stress as a possible mediator of perfectionism and psychological outcome, positing that perfectionist tendencies result in different levels of stress, which in turn result in unhealthy outcomes.

Several studies have investigated the possible mediational role of stress in the relationship between perfectionism and psychological outcomes. For instance, Chang (2000) used the Frost Multidimensional Perfectionism Scale (Frost MPS; Frost, Marten, Lahart, & Rosenblate, 1990) to yield an overall perfectionism score, the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) to measure level of stress, and several outcome measures to test a stress-mediation model. Chang found that stress fully mediated the relationship between perfectionism and life satisfaction and partially mediated the relationship between perfectionism and worry and between perfectionism and negative affect.

In a follow-up study, Chang, Watkins, and Banks (2004) replicated and extended Chang's (2000) study by testing a stress-mediation model in Black and White female college students. On the basis of several earlier studies (e.g., Rice & Dellwo, 2001), Chang et al. (2004) used aggregate scores composed of Frost MPS subscales that were identified as representing more adaptive and maladaptive dimensions of perfectionism rather than using an overall perfectionism score. With these adaptive and maladaptive measures, Chang et al. tested a stress-mediation model for perfectionism and positive affect, negative affect, life satisfaction, and suicidal ideation for Black and White female college students. The results of the analyses supported a fully mediated model for maladaptive perfectionism and positive affect (i.e., greater maladaptive perfectionism, greater stress, less positive affect) for both Black and White women. In addition, Chang and colleagues found evidence for a partially mediated model for maladaptive perfectionism and negative affect as well as for maladaptive perfectionism and suicidal ideation for both Black and White women. They also found a partially mediated model for maladaptive perfectionism and life satisfaction for White women but not for Black women. Chang et al. noted that their measure of adaptive perfectionism was unrelated to both stress and negative affect for both groups, so no mediational analyses were undertaken.

Chang (2006) further investigated how stress mediates the relationship between perfectionism and psychological well-being through six dimensions

(self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth) in a sample of 256 college students. To measure perfectionism, Chang used scores from Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (Hewitt MPS) representing self-oriented, other-oriented, and socially prescribed perfectionism. The results from this study showed that stress fully mediated the relationship between socially prescribed perfectionism and three of the six dimensions of psychological well-being: autonomy, environmental mastery, and purpose in life. No other mediational analyses were performed, because no relationships were found between self-oriented perfectionism and stress or between other-oriented perfectionism and the six dimensions of psychological well-being.

There is a significant and growing body of evidence that maladaptive perfectionists experience more distress than their adaptive and nonperfectionist peers (e.g., Grzegorek, Slaney, Franze, & Rice, 2004), with significantly higher scores on a variety of negative psychological measures. Additionally, there is also some growing evidence (e.g., Chang, 2006) that, as Hewitt and Flett (2002) noted, maladaptive perfectionism "is associated with psychopathology through its association with and influence on stress" (p. 257). However, there has been little evidence for the role of stress in the association between adaptive perfectionism and positive psychological outcomes. It should be noted that previous researchers investigating a stress-mediation model for perfectionism and psychological outcomes either considered perfectionism from a purely maladaptive or pathological perspective (e.g., Chang, 2000) or were hindered to some extent by their measures of perfectionism that were not designed to differentiate between adaptive and maladaptive perfectionism (e.g., Chang, 2006; Chang et al., 2004).

Although Chang et al. (2004) found no relationship between adaptive perfectionism and stress and negative outcomes, they used an adaptive perfectionism score derived from a perfectionism measure (Frost MPS) designed to assess a variety of pathological dimensions of perfectionism. Similarly, Chang (2006) used scores derived from the Hewitt MPS, a perfectionism measure designed to assess a variety of pathological dimensions of perfectionism. Ashby and Rice (2002) criticized this procedure when used by other researchers as resulting in a "lack of measurement purity" (p. 198) likely to attenuate important connections between adaptive perfectionism and outcomes. In short, the failure to find significant relationships between adaptive perfectionism and a number of variables may be attributable to the use of a measure of perfectionism that assesses adaptive aspects of perfectionism in an indirect manner, as opposed to utilizing a measure of perfectionism that is designed specifically to assess adaptive and maladaptive perfectionism.

The present study was conducted in response to these empirical and theoretical issues. The purpose of this study was to replicate and extend earlier research by examining the levels of perceived stress, depression, and life satisfaction among identified groups of maladaptive perfectionists, adaptive perfectionists, and nonperfectionists. In addition, this study was designed to

replicate and extend Chang et al.'s (2004) study testing a stress-mediation model for adaptive and maladaptive perfectionism and several outcomes by using a measure of perfectionism that is designed specifically to assess adaptive and maladaptive perfectionism. The Almost Perfect Scale–Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) was chosen because it measures both adaptive and maladaptive dimensions of perfectionism and has been used as a reliable measure to identify groups of perfectionists (e.g., Rice & Ashby, 2007). In addition, other researchers (e.g., Slaney, Rice, & Ashby, 2002) have identified significant associations between adaptive perfectionism, as measured by the APS-R, and a variety of outcome measures. Finally, the results of previous research have documented higher levels of perfectionism (e.g., Ashby et al., 2006), perceived stress (Kendler, Myers, & Prescott, 2005), and depression (Gracia & Herrero, 2004) in women compared with men. In addition, we attempted to replicate and extend the work of Chang et al. (2004), who looked exclusively at women in their investigation. We, therefore, also included only women in our sample.

In this study, we hypothesized that maladaptive perfectionists would have higher depression and perceived stress scores compared with adaptive perfectionists and nonperfectionists and that adaptive perfectionists would have higher scores on satisfaction with life. In addition, we hypothesized that perceived stress would mediate the relationship between maladaptive perfectionism and depression and satisfaction with life (i.e., higher maladaptive perfectionism would lead to higher perceived stress, which in turn would lead to higher depression and lower satisfaction with life). Finally, we hypothesized that perceived stress would mediate the relationship between adaptive perfectionism and depression and satisfaction with life (i.e., higher adaptive perfectionism would lead to lower perceived stress, which in turn would lead to lower depression and higher satisfaction with life).

Method

Participants

One hundred and thirty-nine female students were recruited from several large undergraduate introductory psychology courses at a large midwestern university. All participants volunteered to participate in the study and received course research credit or extra credit for their participation at the discretion of the course instructor. The age of the sample ranged from 18 to 50 years (M = 24, SD = 8.34). Because of an oversight, no race or ethnicity data were gathered from participants.

Instruments

Participants completed a demographic sheet, the APS-R (Slaney at al., 2001), the PSS (Cohen et al., 1983), the Kandel Depression Inventory (KDI; Kandel & Davies, 1982), and the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985).

The APS-R (Slaney et al., 2001) is a 23-item inventory designed to measure the multidimensional construct of perfectionism through three subscales: Standards, Order, and Discrepancy. On the basis of Slaney et al.'s (2001) recommendation, we excluded the Order subscale in this study because it does not aid in differentiating adaptive from maladaptive perfectionists. Thus, the scale was cut to 19 items. The Standards subscale is designed to measure personal standards, whereas the Discrepancy subscale is designed to measure distress caused by the discrepancy between performance and standards. Participants respond to the items of these scales using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Slaney et al. described a set of confirmatory factor analyses that supported the structure and independence of the scales. They reported Cronbach's coefficient alphas of .85 (Standards) and .92 (Discrepancy). In the present study, we found Cronbach's coefficient alphas of .81 for the Standards scores and .91 for the Discrepancy scores.

To identify groups of adaptive perfectionists, maladaptive perfectionists, and nonperfectionists, we calculated cutoff scores for the APS-R Standards and Discrepancy subscales. According to Rice and Ashby (2007), the cutoff scores can be reliably used to identify two groups of college student perfectionists consistent with Hamachek's (1978) definitions of normal or adaptive perfectionists (i.e., high standards and low discrepancy) and neurotic or maladaptive perfectionists (i.e., high standards and high discrepancy) as well as a group of nonperfectionists. Participants classified as nonperfectionists have Standards subscale scores less than 42, whereas participants classified as maladaptive perfectionists have Standards and Discrepancy subscale scores greater than or equal to 42. Finally, participants classified as adaptive perfectionists have Standards scores greater than or equal to 42 and Discrepancy scores less than 42.

The PSS (Cohen et al., 1983) measures appraised stress through 14 items. Participants respond to the items of these scales using a 5-point Likert scale from 0 (*never*) to 4 (*very often*). The internal consistency ranged from .84 to .86 across two groups of college-age students and on a group of participants in a community smoking-cessation program. Diener et al. (1985) reported a coefficient alpha of .87 for the scale and a 2-month test–retest reliability coefficient of .82. In the present study, the PSS yielded a Cronbach's coefficient alpha of .86.

The KDI (Kandel & Davies, 1982) measures one's experience of depression and contains seven items. Participants respond to the items of these scales using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). Kandel and Davies (1982) reported a Cronbach's coefficient alpha of .79 for the scale and a 5- and 6-month test–retest reliability coefficient of .76. In the present study, the KDI yielded a Cronbach's coefficient alpha of .79.

The SWLS (Diener et al., 1985) is a five-item measure of global or overall life satisfaction using a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) with higher scores reflecting greater overall satisfaction. The SWLS has been shown to have good convergent validity with other scales that measure subjective well-being (Pavot & Diener, 1993). Test–retest reliability across an 8-week period for the scale was .82 with a

Cronbach coefficient alpha score of .87 (Diener et al., 1985). In the present study, the SWLS yielded a Cronbach's coefficient alpha of .89.

Results

Using Rice and Ashby's (2007) system for classifying perfectionists, we classified 51 participants in the present study as adaptive perfectionists, 42 as maladaptive perfectionists, and 46 as nonperfectionists. The identified clusters of adaptive and maladaptive perfectionists and nonperfectionists were similar to results found in previous studies (e.g., Rice & Ashby, 2007). Means and standard deviations for the APS-R Discrepancy and Standards subscales by perfectionist group are presented in Table 1.

Data were subsequently analyzed using a one-way multivariate analysis of variance. The between-subjects variable was perfectionism (adaptive, maladaptive, and nonperfectionist). The dependent variables were the PSS, SWLS, and KDI. The one-way multivariate test for perfectionism was significant, Pillai-Barlett trace, $F(6, 270) = 2.18$, $p < .045$. Results from Tukey's pairwise comparisons revealed significant differences ($p < .017$) between adaptive and maladaptive perfectionists. Specifically, maladaptive perfectionists had significantly higher perceived stress ($d = .70$) and depression ($d = .51$) scores than did adaptive perfectionists. In contrast, adaptive perfectionists had significantly higher satisfaction with life ($d = .52$) scores. Average PSS, KDI, and SWLS scores by category are presented in Table 1.

A bootstrapping approach (Preacher & Hayes, 2004, 2008) that is an extension of the Sobel test (Baron & Kenny, 1986; Sobel, 1982) was conducted to test the hypothesis that perceived stress mediated the relationship between perfectionism and depression and between perfectionism and satisfaction with life. Bootstrapping is a nonparametric approach that resamples the original sample size from the original data set multiple times. In any particular resample, it is

TABLE 1

Average Scale Scores by Perfectionism Cluster

	Adaptive Perfectionists ($n = 51$)		Maladaptive Perfectionists ($n = 42$)		Nonperfectionists ($n = 46$)	
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***
Almost Perfect Scale–Revised						
Standards subscale	45.10	2.17	45.55	2.67	36.41	4.16
Discrepancy subscale	31.43	7.26	55.17	10.21	40.78	11.34
Perceived Stress Scale	24.57*	8.24	30.14**	7.58	29.24	8.32
Kandel Depression Inventory	14.75*	5.17	17.45**	5.52	16.80	4.60
Satisfaction With Life Scale	25.24*	6.03	21.67**	7.08	22.43	6.71

Note. $N = 139$. Mean scores with different numbers of asterisks differ significantly at $p < .07$ (.05/3).

expected that some data points in the original data will be present two or more times with others possibly absent (see Preacher & Hayes, 2004, 2008, for a detailed discussion of the bootstrapping procedure). In contrast to other tests of mediation (e.g., Baron & Kenny, 1986; Sobel, 1982), this approach does not rely on the assumption that the results are normally distributed (Preacher & Hayes, 2004, 2008). When interpreting the results, one needs to be aware of differences between mediation effects and indirect effects. Mediation may exist if a significant association between the independent variable (adaptive or maladaptive perfectionism) and the dependent variable (depression or satisfaction with life) exists; otherwise, an indirect effects model may be considered (i.e., adaptive or maladaptive perfectionism is significantly related to perceived stress, which is significantly related to depression or satisfaction with life). See Figure 1 for a graphic representation of the path model.

To create measures of adaptive and maladaptive perfectionism, we followed the strategy used by previous researchers (e.g., Rice, Tucker, & Desmond, 2008) and entered one of the two APS-R subscales as a predictor variable and the other as a covariate. As a result, maladaptive perfectionism was represented by entering the APS-R Discrepancy subscale and controlling for the effects of the APS-R Standards subscale. Similarly, adaptive perfectionism was represented by entering the APS-R Standards subscale and controlling for the effects of the APS-R Discrepancy subscale.

Consistent with the approach of Preacher and Hayes (2004), 5,000 equal-sized resamples of the original data were created by random sampling with replacement. The indirect effect is computed for each sample and is the *ab*

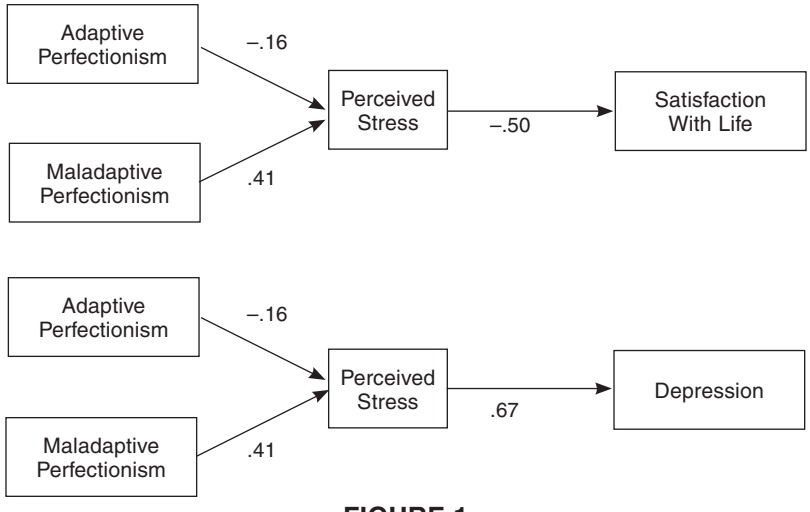


FIGURE 1

Path Model of Adaptive Perfectionism, Maladaptive Perfectionism, Perceived Stress, Depression, and Satisfaction With Life

Note. All standardized path coefficients were significant at $p < .05$.

path, which is the product of the independent variable (adaptive or maladaptive perfectionism while partialing out the effects of the other APS-R scale) → mediator (perceived stress) path (the *a* path) and the mediator (perceived stress) → dependent variable (depression or satisfaction with life) path (the *b* path). The point estimate of the indirect effect is the mean *ab* path value computed over the samples. A 95% confidence interval is calculated; if the upper and lower bounds of these bias-corrected and accelerated (BCA) confidence intervals do not contain zero, the indirect effect is significant.

The results of the analysis indicated that the total effect of maladaptive perfectionism on satisfaction with life was significant (see Table 2), suggesting the possibility of mediation. Results of the bootstrapping analysis showed that maladaptive perfectionism had a significant indirect effect through perceived stress, with a 95% BCA confidence interval of –.16 to –.06. Because zero was

TABLE 2

Mediational Bootstrapping Analyses

Outcome Variable and Path/Effect	*B*	*SE*	β	95% CI
Satisfaction with life (SWL)				
ΔR^2 = .24***				
C	.22	.11	.17*	
a (adaptive perfectionism → PSS)	–.26	.12	–.16*	
b (PSS → SWL)	–.41	.07	–.50***	
c´ (adaptive perfectionism → SWL)	.12	.10	.09	
a × *b*	.11	.05	.08*	[.02, .22]
ΔR^2 = .26***				
C	–.12	.04	–.24**	
a (maladaptive perfectionism → PSS)	.25	.05	.41***	
b (PSS → SWL)	–.41	.07	–.50***	
c´ (maladaptive perfectionism → SWL)	–.02	.04	–.03	
a × *b*	–.10	.02	–.21***	[–.16, –.06]
Depression (DEP)				
ΔR^2 = .37***				
C	–.09	.08	–.09	
a (adaptive perfectionism → PSS)	–.26	.12	–.16*	
b (PSS → DEP)	.42	.04	.67***	
c´ (adaptive perfectionism → DEP)	.02	.06	.02	
a × *b*	–.11	.05	–.11*	[–.20, –.02]
ΔR^2 = .26***				
C	.13	.03	.33***	
a (maladaptive perfectionism → PSS)	.25	.05	.41***	
b (PSS → DEP)	.42	.05	.67***	
c´ (maladaptive perfectionism → DEP)	.02	.03	.06	
a × *b*	.10	.02	.27***	[.07, .15]

Note. Almost Perfect Scale–Revised (APS-R) Standards subscale with APS-R Discrepancy subscale as covariate = adaptive perfectionism; APS-R Discrepancy subscale with APS-R Standards subscale as covariate = maladaptive perfectionism; satisfaction with life (SLW) is measured with the Satisfaction With Life Scale; perceived stress (PSS) is measured with the Perceived Stress Scale; depression (DEP) is measured with the Kandel Depression Inventory; CI = confidence interval. For paths, *C* = total effect of independent variable (IV) on dependent variable (DV) with covariate; *a* = IV to mediators; *b* = direct effect of mediator on DV; *c´* = direct effect of IV on DV; *a* × *b* = indirect effect of IV on DV through mediator.

*p < .05. **p < .01. ***p < .001.

not within in the confidence interval range, we concluded that perceived stress mediated the relationship between maladaptive perfectionism and satisfaction with life (Preacher & Hayes, 2008).

The results of the analysis further indicate that the total effect of adaptive perfectionism on satisfaction with life was also significant (see Table 2), suggesting that the possibility of mediation existed. Results of the analysis indicated that perceived stress mediated the relationship between adaptive perfectionism and satisfaction with life, with a 95% BCA confidence interval of .02 to .22.

Similar bootstrapping procedures were conducted with depression as the dependent variable. The results showed that maladaptive perfectionism was significantly associated with depression and that maladaptive perfectionism had a significant indirect effect on depression through perceived stress, with a 95% BCA confidence interval of .07 to .15 (see Table 2). Again, because zero was not within the confidence interval range, we concluded that perceived stress mediated the relationship between maladaptive perfectionism and depression (Preacher & Hayes, 2008).

We conducted similar analyses for adaptive perfectionism. Results indicated that the total effect of adaptive perfectionism on depression was not significant, offering no support for the mediator role of perceived stress. However, in the absence of direct effects between the predictor and outcome variables, it is still possible to have indirect effects (i.e., adaptive perfectionism is significantly related to perceived stress, which is significantly related to satisfaction with life). Results of the bootstrapping analysis indicated that adaptive perfectionism did have a significant indirect effect on depression through perceived stress, with a 95% BCA confidence interval of –.20 to –.02 (see Table 2).

Discussion

Perfectionism has been identified as a common complaint of students who present at college counseling centers (e.g., Chandler & Gallagher, 1996). The results of the present study suggest some potential reasons for these clients' complaints. In our study, maladaptive perfectionists had significantly higher levels of depression and stress and significantly lower satisfaction with life compared with adaptive perfectionists. This is consistent with Barrow and Moore's (1983) early conceptualization of the problematic nature of perfectionism in college students resulting from perfectionism's relationship with stress.

Our results were generally consistent with previous research in the area and with our initial hypotheses. As in numerous other studies (e.g., Grzegorek et al., 2004, Rice & Ashby, 2007), we found significant differences among groups of adaptive perfectionists, maladaptive perfectionists, and nonperfectionists. As hypothesized, these groups differed significantly on measures of depression, stress, and satisfaction with life. Maladaptive perfectionists fared least well, with higher stress and depression scores than adaptive perfectionists. These results are consistent with other studies that found higher depression scores for maladaptive perfectionists (e.g., Rice & Dellwo, 2002; Rice &

Slaney, 2002) and with the conceptual literature suggesting that maladaptive perfectionists are likely to "become trapped by non-productive, self-critical ruminations that lead to depression" (Burns, 1980, p. 38). In addition, maladaptive perfectionists in our study had higher perceived stress scores than adaptive perfectionists. This result seems to support Blankstein and Dunkley's (2002) statement that "perfectionists play an active role in causing personally stressful events" (p. 291), but only as it relates to maladaptive perfectionists.

In contrast to the negative outcomes associated with maladaptive perfectionism, adaptive perfectionists had higher satisfaction with life scores than their maladaptive peers and lower perceived stress scores than both maladaptive perfectionists and nonperfectionists. This result is consistent with Gilman and Ashby's (2003) finding that adaptive perfectionists had significantly higher personal life satisfaction than maladaptive perfectionists or nonperfectionists in a sample of middle school adolescents. This result is also consistent with earlier theoretical work suggesting that adaptive perfectionists' striving for high standards "brings them a deep sense of satisfaction" (Hamachek, 1978, p. 27).

The results of this study also replicated and extended the findings of earlier research investigating the association between perfectionism, stress, and psychological outcomes (e.g., Chang, 2000; Chang et al., 2004). These findings are consistent with Chang et al.'s (2004) assertion of "the usefulness of considering stress as a mechanism that may account for the association between perfectionism and psychological functioning" (p. 101). As in earlier studies, stress mediated the relationship between maladaptive perfectionism and a negative psychological outcome, in this case, depression. In contrast to earlier studies, stress also fully mediated the relationship between both adaptive and maladaptive perfectionism and satisfaction with life, as well as an indirect effect between adaptive perfectionism and depression through stress. The statistically and practically significant association between maladaptive perfectionism and stress in this study is consistent with the conceptual literature suggesting this connection. Hewitt and Flett (2002) noted that maladaptive perfectionism influences "the generation of stressful failures, the perpetuation of the negative effects of stressors or failures, and the anticipation of future stressors and failures" (p. 258). The results of this study suggest that this generation, perpetuation, and anticipation of stress inherent in maladaptive perfectionism results in increased depression and decreased satisfaction with life. This is generally consistent with Chang's (2000) study, which also found a fully stress-mediated relationship between perfectionism and satisfaction with life, as well as Chang et al.'s (2004) study, although those researchers found support for a partially mediated model between maladaptive perfectionism and satisfaction with life. The results of the present study are also generally consistent with other studies that found support for partially stress-mediated models of perfectionism and negative psychological outcome associations.

Although no previous researchers have investigated a stress-mediation model for perfectionism and depression, Chang (2000) found support for a partially mediated model of both perfectionism and worry and perfectionism

and negative affect. Similarly, Chang et al. (2004) found support for partially stress-mediated models for maladaptive perfectionism and negative affect as well as maladaptive perfectionism and suicide ideation.

An important contribution of this article was the investigation of a stress-mediation model for adaptive perfectionism and both depression and satisfaction with life using a measure of perfectionism that is designed specifically to differentiate between adaptive and maladaptive perfectionism. Using a measure designed to assess adaptive perfectionism, as per Ashby and Rice's (2002) suggestion, our study revealed a clear inverse relationship between adaptive perfectionism and stress. This finding is consistent with Hamachek's (1978) notion that, in contrast to the stress-producing nature of maladaptive perfectionism, adaptive perfectionism results in "a very real sense of pleasure from the labors of painstaking effort" (p. 27) that may actually reduce or attenuate the generation and perpetuation of stress.

Our hypothesis that stress would mediate the relationship between adaptive perfectionism and depression was not supported; however, an indirect effects model was supported. In our study, as in earlier studies (e.g., Chang et al., 2004), adaptive perfectionism was unrelated to negative psychological outcomes. However, our use of a measure of perfectionism that is designed specifically to differentiate between adaptive and maladaptive perfectionism, the APS-R, revealed an indirect relationship, suggesting that adaptive perfectionism results in decreased stress, which further results in decreased depression. Our hypothesis that stress would mediate the association between adaptive perfectionism and satisfaction with life was supported. The use of a "purer" measure of adaptive perfectionism appears to have revealed a relationship that Chang et al. (2004) did not find. Our result suggests that adaptive perfectionism results in decreased stress, which further results in increased satisfaction with life and decreased depression.

This study has several clinical implications for college counselors. First, counselors should recognize the important distinction between adaptive and maladaptive perfectionism (e.g., Slaney & Ashby, 1996). College counselors may want to guard against the natural inclination to view perfectionism as wholly pathological and negative (Rice & Slaney, 2002), because the results of this study suggest that adaptive perfectionism may result in decreased stress, decreased depression, and increased satisfaction with life. Therefore, college counselors may want to encourage clients to pursue the flexibility of thought and positive striving (Hamachek, 1978) that characterize adaptive perfectionists.

This study suggests that college counselors who identify their clients as maladaptive perfectionists may want to anticipate the possibility of increased stress as well as the resultant depressive symptoms and decreased satisfaction with life. Hewitt and Flett (2002) noted that maladaptive perfectionists "are exposed to a greater number of stressful or failure events simply as a result of their unrealistic approach to life" (p. 259). College counselors may want to use interventions that target the alleviation of stress (Meichenbaum,

1985) or enhance coping resources (Matheny & McCarthy, 2000). Hewitt and Flett (2002) suggested that maladaptive perfectionism results in stress because of the maladaptive perfectionists' "tendencies to stringently evaluate themselves and others, focus on negative aspects of performance, and experience little satisfaction" (p. 259). College counselors may want to use cognitive behavior techniques (e.g., Ferguson & Rodway, 1994) to address these stress-producing tendencies.

Finally, Hamachek (1978) suggested several ways college counselors might help maladaptive perfectionist clients to address their unrealistic expectations and approach to life that may lead to increased stress and higher levels of depression. These suggestions included (a) helping clients to be selective in tasks that they feel warrant perfectionistic standards, (b) challenging clients to give themselves permission to be imperfect, (c) assisting clients to set reachable and reasonable goals, and (d) encouraging clients to choose one activity in which to act without self-criticism.

Limitations of the Study

Although this study included relatively careful and conservative data-analytic techniques, there were several limitations suggesting avenues for additional inquiry. For example, given the sample composition, any conclusions or implications of the study must be limited to women. Although the sample was of adequate size, generalizability is limited because no race/ethnicity data were available. This is pertinent, given that Chang et al. (2004) found slightly different models for Black versus White women. Also, although causal inferences can be derived from path modeling, it must be remembered that the design of the study was correlational. In addition, because data collection occurred in freshman psychology classes at a large university in the midwestern United States, the results of this study may not be generalizable to college populations in general. Further research should be conducted to determine the applicability of these findings to a broader demographic of students. Finally, it should be noted that our models were not intended to predict major depressive disorder but instead were used to predict a range of depression scores on the KDI in a nonclinical sample.

Summary

This study provided evidence for a reexamination of the association between adaptive perfectionism, stress, and possible related outcomes. The study also provided additional support for the mediating role of stress in the association of maladaptive perfectionism with decreased positive (i.e., satisfaction with life) and increased negative (i.e., depression) outcomes. In addition, this study supported the suggestion that, during assessments of adaptive perfectionism, it is important to use measures of perfectionism, such as the APS-R (Slaney et al., 2001), that directly assess adaptive perfectionism.

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