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How Adaptive and Maladaptive Perfectionism Relate to Positive and Negative Psychological Functioning: Testing a Stress-Mediation Model in Black and White Female College Students

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This study assessed racial variations in how adaptive and maladaptive perfectionism relate to psychological functioning in a sample of 150 Black and 150 White female college students. Comparative results indicated that Black women, as compared with White women, reported less adaptive perfectionism, less life satisfaction, greater stress, and greater negative affect. Correlational results indicated that for both groups, maladaptive perfectionism, but not adaptive perfectionism, was associated with stress. Accordingly, a model in which stress mediates the link between maladaptive perfectionism and psychological functioning was tested. Overall, path-analytic results indicated that stress completely or partially mediated the link between maladaptive perfectionism and psychological functioning for both Black and White women. Potential implications of the present findings for counseling Black and White women are discussed.

In recent decades, there has been growing interest in studying the relationship between perfectionism and psychological functioning in adults (Flett & Hewitt, 2002). Recent reviews of perfectionism studies (e.g., Blatt, 1995; Chang, 2003; Shafran & Mansell, 2001) indicate that perfectionism is a key variable associated with negative psychological functioning, including greater depressive symptomatology, greater anxiety, greater stress, greater suicidal risk, greater eating disturbances, and poorer outcomes in the treatment of clinical depression. However, several key questions have yet to be resolved in studying the relationship between perfectionism and psychological functioning.

On the (Unknown) Generalizability of Perfectionism Theory and Research to Diverse Racial Groups: Most of the Participants Were White, and They Still Are a Decade Later!

Gender, race, and culture have been neglected in mainstream psychological research (Sue, Bingham, Porché-Burke, & Vasquez, 1999). More than a decade ago, Graham (1992) analyzed the trend in research published from 1970 to 1989 reflected in half a dozen leading American Psychological Association (APA) journals. Results from her analyses indicated a steady decline in both the number and the percentage of articles that focused on the experiences of Blacks. Thus, it is not surprising that of the hundreds of studies published on perfectionism over the past decade, less than half a dozen of these looked at perfectionism in Blacks (e.g., Striegel-Moore et al., 2000). Even among those studies that have been conducted, some have used a measure of perfectionism tied to eating disturbances (Garner, Olmstead, & Polivy, 1983) rather than a measure related to general psychological functioning. In fact, few studies have looked at perfectionism, broadly defined, in Black young adults (e.g., Castro & Rice, 2003), and only one study has examined perfectionism comparatively between Black and White, male and female young adults.

In a study involving 118 Black and 299 White college students, Nilsson, Paul, Lupini, and Tatem (1999) found variations between Black and White students on levels of perfectionism. Using Frost, Marten, Lahart, and Rosenblate's (1990) Multidimensional Perfectionism Scale (MPS), these investigators found that Black students, as compared with White students, reported greater parental expectations. In contrast, White students, in comparison with Black students, reported greater concern over mistakes and parental criticism. When the two groups were compared on the basis of gender, Nilsson et al. found that Black female students in comparison with White female students reported greater parental expectations, whereas White female students reported greater concern over mistakes and parental criticism. Among male students, Blacks, in comparison with Whites, reported greater parental expectations only. Thus, racial variations on perfectionism appeared

to be greater for female students than for male students. Although Nilsson et al.'s findings provide a warrant for conducting additional investigations of perfectionism between Black and White female college students, their findings do little more than indicate normative differences on levels of perfectionism across the two groups. To determine whether racial variations on perfectionism between Black and White female college students translate into differences in the function of perfectionism between the two groups, it would be necessary to also examine how perfectionism relates to various indices of psychological functioning in Black and White female students.

Hamachek's (1978) Distinction Between Adaptive and Maladaptive Perfectionism

Decades before researchers conducted numerous studies examining the relationship between perfectionism and psychological functioning, Hamachek (1978) made a useful distinction between normal or adaptive and neurotic or maladaptive perfectionism:

> Persons who might fit under the label "normal perfectionists" (whom we could just as easily refer to as skilled artists or careful workers or masters of their craft) are those who derive a very real sense of pleasure from the labors of a painstaking effort and *who feel free to be less precise as the situation permits*. . . . This is not, however, apt to be true for neurotic perfectionists. Here we have the sort of people whose efforts—even their best ones—never seem quite good enough, at least in their own eyes. . . . They are unable to feel satisfaction because in their own eyes they *never seem to do things good enough to warrant that feeling*. (p. 27)

Only recently have efforts been made by researchers to integrate models of perfectionism within Hamachek's (1978) framework (Slade & Owens, 1998). Initially, for example, Frost et al. (1990) argued that perfectionism represents a multidimensional construct involving concern over mistakes, personal standards, parental criticism, parental expectations, doubts about actions, and organization. Respective MPS subscales measure these perfectionist tendencies. More recently, however, Frost, Heimberg, Holt, Mattia, and Neubauer (1993) showed that the MPS subscales, along with those from another multidimensional perfectionism measure, map onto an adaptive dimension (positive strivings) and a maladaptive dimension (maladaptive evaluation concern). According to these investigators, scores on Personal Standards and Organization are aligned with adaptive perfectionism, whereas scores on Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts About Actions are aligned with maladaptive perfectionism. Consistent with this view, Frost et al. (1993) found that adaptive perfectionism was positively related to positive affect but was unrelated to depressive symptoms and negative affect. Alternatively, they found that maladaptive perfectionism was positively related to depressive symptoms and negative affect. Similar findings have been reported by other researchers who have made a conceptual distinction between adaptive and maladaptive perfectionism (e.g., Dunkley, Zuroff, & Blankstein, 2003; Rice, Ashby, & Slaney, 1998; Slaney, Rice, Mobley, & Trippi, 2001; Terry-Short, Owens, Slade, & Dewey, 1995). Unfortunately, relative to the number of studies conducted on perfectionism in the past decade, the number of studies focusing on distinguishing the relations of adaptive versus maladaptive perfectionism with various indices of psychological functioning remains quite small. Clearly, when examining perfectionism in Black and White females, it would be useful to determine how adaptive and maladaptive perfectionism relate to key indices of psychological functioning.

Additional Theoretical Considerations in Studying Black and White Women: Positive and Negative Psychological Functioning and the Role of Stress as a Mediator of the Relationship Between Perfectionism and Psychological Functioning

Most studies have focused on the relationship between perfectionism and negative psychological functioning. Beyond the Frost et al. (1993) study described earlier, only two additional studies have focused on how perfectionism relates to indices of both positive psychological functioning (e.g., life satisfaction, positive affect) and negative psychological functioning (e.g., negative affect, worry). In a study of young and middle-age adults, Chang (2000) found that for both groups, total MPS scores were associated with less life satisfaction but with greater negative affect and worry. For both groups, the total MPS score was found to be unrelated to positive affect. In addition, greater perfectionism was associated with greater stress in both groups. Subsequent path analyses indicated that stress wholly mediated the association of perfectionism with life satisfaction but only partially mediated the associations of perfectionism with negative affect and worry. In a more recent study involving college students, Dunkley et al. (2003) found that maladaptive perfectionism (self-critical perfectionism) was associated with greater negative affect and with less positive affect. Alternatively, these investigators found that adaptive perfectionism (personal standards perfectionism) was associated with greater negative affect but was unrelated to positive affect. Maladaptive perfectionism, but not adaptive perfectionism, was also found to be associated with greater stress, which in turn (along with several other variables) was found to partially mediate the association between maladaptive perfectionism and negative affect. Unfortunately, these studies have notable limitations. For example, in reporting on the total MPS score, Chang's (2000) findings do not clarify the extent to which the associations found involved adaptive perfectionism, maladaptive perfectionism, or both. Likewise, Dunkley et al.'s intriguing finding of a positive association between a measure of adaptive perfectionism and negative affect seems to go against past research and theory on adaptive perfectionism. However, in our view, the greatest limitation across the Frost et al. (1993), Chang (2000), and Dunkley et al. (2003) studies is that the majority of participants were White. Thus, it remains unclear how adaptive and maladaptive perfectionism relate to indices of positive and negative psychological functioning in non-White populations.

Positive psychological functioning can be defined by two indices, namely, positive affect and life satisfaction (Ryff & Keyes, 1995). Alternatively, negative psychological functioning can be defined by negative affect, which taps many of the emotional qualities found in most measures of psychological maladjustment, including measures of depression and anxiety (Watson, Clark, & Tellegen, 1988). Because life satisfaction, positive affect, and negative affect are all generally believed to have universal relevance (Keyes, Shmotkin, & Ryff, 2002), they should represent key

measures of positive and negative psychological functioning in both Black and White females. Examining how adaptive and maladaptive perfectionism relate to positive and negative psychological functioning in Black and White females would help clarify past findings and identify any significant racial variations. Moreover, in considering key measures of negative psychological functioning in female college students, there are at least three reasons to also look at suicide ideation. First, women make three times more suicide attempts than men (Canetto & Lester, 1995), and thus suicide ideation is likely to be more pronounced in women than in men. Second, studies have shown that suicide-related behaviors, including suicide ideation, are not uncommon in college populations. For example, Westefeld and Furr (1987) found the prevalence of suicide ideation across three samples of college students to range from 24% to 46%. Third, a link between perfectionism and suicide potential, including suicide ideation, has been identified in several recent studies (e.g., Chang, 1998, 2002; Hewitt, Flett, & Weber, 1994). Yet, it is not known how adaptive and maladaptive perfectionism relate to suicide ideation or whether any associations that exist are similar or different between Black and White females. Resolving this question may be helpful for understanding potential variations regarding which variables may contribute to the greater suicide risk in Black compared with White females and what the mechanisms may be (Jackson, 1990).

Furthermore, it would be useful to test the generalizability of a more complex model, namely, one involving stress as a mediator of the link between perfectionism and psychological functioning among Black and White females. Such a mediation model is illustrated in Figure 1. Although Hewitt, Flett, and Ediger (1996) have tested for stress as a mediator, they have also contended that "perfectionistic behavior can generate stress that stems, in part, from the tendency for perfectionists to evaluate stringently, focus on negative aspects of performance, and experience little satisfaction" (p. 276). In a recent test of stress as a mediator, Chang (2000), for example, did not find stress to fully mediate the associations of perfectionism with psychological functioning, yet a stress-mediation model may still be useful. Recall that Chang (2000) did not distinguish between adaptive and maladaptive perfectionism. However, there is some reason to suspect that stress may be more likely to serve as a mediator of the link between maladaptive perfectionism than between adaptive perfectionism and psychological functioning (Dunkley et al., 2003). Thus, for both Black and White females, the link between maladaptive perfectionism and psychological functioning may be mediated by stress.

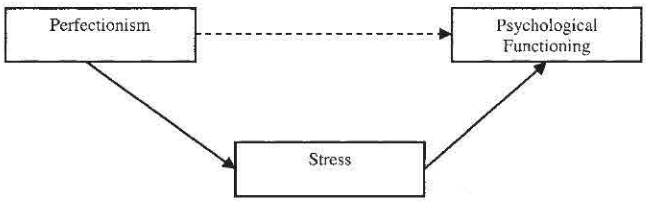

Figure 1. A hypothesized model of how stress may mediate the association between perfectionism and psychological functioning.

Purpose of the Present Research

Given the aforementioned limitations and concerns associated with previous research on perfectionism, the goals of the present study were (a) to examine whether there are mean differences on measures of adaptive and maladaptive perfectionism, stress, and psychological functioning between Black and White females; (b) to examine whether there are differences in how adaptive and maladaptive perfectionism relate to positive psychological functioning (positive affect and life satisfaction) and negative psychological functioning (negative affect and suicide ideation) in Black and White females; and (c) to determine whether stress mediates the associations of adaptive and maladaptive perfectionism with positive and negative psychological functioning differently in Black and White females.

Given the preliminary nature of past comparative findings between Black and White females (Nilsson et al., 1999), and given our emphasis on examining the generalizability of previous findings based on Whites to Blacks, we hypothesized that there would be no normative difference between Black and White women on adaptive perfectionism or on maladaptive perfectionism. In a similar vein, insofar as the distinction between adaptive and maladaptive perfectionism represents a useful theoretical framework that is applicable to all adults (Hamachek, 1978), we also predicted that for both Black and White women, adaptive perfectionism would be positively associated with positive psychological functioning and negatively related to negative psychological functioning. Alternatively, for both Black and White women, we predicted that maladaptive perfectionism would be negatively associated with positive psychological functioning and positively associated with negative psychological functioning. Finally, consistent with a stress-mediation hypothesis (Hewitt et al., 1996), we predicted that for both Black and White females, the associations of maladaptive perfectionism—but not adaptive perfectionism (Dunkley et al., 2003)—with positive and negative psychological functioning would be mediated by stress.

Method

Participants

Participants were 150 Black female college students attending a small historically Black college and 150 White female college students attending a large predominantly White university matched on age and class (freshman, sophomore, etc.). Initially, the Black female sample was composed of 152 college students. However, the responses provided by 1 participant were dropped because of an incomplete survey, and the responses provided by 1 mature adult participant were also dropped because of failure to identify a same-age White participant. All participants were enrolled in a psychology course in their respective schools and received extra credit for participating. For both racial groups, ages ranged from 18 to 23 years (M = 19.66, SD = 0.99).

Measures

Adaptive and maladaptive perfectionism. The Multidimensional Perfectionism Scale (MPS; Frost et al., 1990) is a 35-item multidimensional measure of perfectionism consisting of the following six subscales: Concern Over Mistakes (e.g., "People will probably think less of me if I make a mistake"), Personal Standards (e.g., "I set higher goals than most people"), Parental Expectations (e.g., "My parents have expected excellence

from me"), Parental Criticism (e.g., "I never felt like I could meet my parents' standards"), Doubts About Actions (e.g., "Even when I do something very carefully, I often feel that it is not quite right"), and Organization (e.g., "Neatness is very important to me"). Respondents are asked to rate items across a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). On the basis of the framework proffered by Frost et al. (1993), to obtain a measure of adaptive perfectionism, we aggregated scores from the Personal Standards and Organization subscales to form the MPS Adaptive subscale. Similarly, to obtain a measure of maladaptive perfectionism, we aggregated scores from the Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts About Actions subscales to form the MPS Maladaptive subscale.

Higher scores on the MPS Adaptive subscale reflect greater levels of adaptive perfectionism, whereas higher scores on the MPS Maladaptive subscale reflect greater levels of maladaptive perfectionism. Test–retest reliabilities (10 weeks) for the different MPS subscales have been reported to range from .63 to .88 (Rice & Dellwo, 2001).

Stress. The Perceived Stress Scale (PSS; S. Cohen, Kamarck, & Mermelstein, 1983) is a 14-item measure of self-appraised life stress in the past month (e.g., "In the last month, how often have you been upset because of something that happened unexpectedly?"). We selected the PSS to assess for stress over life events or hassles surveys because the PSS does not constrain respondents to a specific list or number of stressors. In addition, we wanted to build on Chang's (2000) examination of the proposed stress-mediation model, which also relied on the PSS as a stress measure. Respondents are asked to rate the frequency of these items across a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*very often*). Higher scores reflect greater perceived stress in the past month. Evidence for construct validity of the PSS with life events measures has been reported in S. Cohen et al. (1983). Test–retest reliability (6 weeks) for the PSS has been reported to be .55 (S. Cohen et al., 1983).

Positive psychological functioning. For the present study, two measures were used to assess for positive psychological functioning, namely, positive affect and life satisfaction. Positive affect was assessed with the Positive Affect scale of the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). The PANAS is a 20-item self-report measure of positive and negative affect, with 10 items assessing for positive affect (e.g., "enthusiastic") and 10 items assessing for negative affect (e.g., "irritable"). For each item, respondents are asked to rate how they felt "during the past week" across a 5-point Likert-type scale ranging from 1 (*very slightly*) to 5 (*extremely*). Higher scores on the Positive Affect scale reflect greater positive affect. Evidence for the construct validity of the Positive Affect scale has been reported in Watson et al. (1988). Test–retest reliability (8 weeks) for the Positive Affect scale has been reported to be .68 (Watson et al., 1988).

We used the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) to assess life satisfaction. The Satisfaction With Life Scale is a 5-item measure of global life satisfaction (e.g., "I am satisfied with my life"), or a person's satisfaction with life as a whole, rather than with any specific domain (Pavot & Diener, 1993). Respondents are asked to rate the extent of their agreement with these items across a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores on the scale reflect greater life satisfaction. Test–retest reliability (8 weeks) for the scale has been reported to be .82 (Diener et al., 1985).

Negative psychological functioning. For the present study, two measures were used to assess for negative psychological functioning, namely, negative affect and suicide ideation. As noted above, the PANAS is a 20-item self-report measure of affect. The 10-item Negative Affect scale of the PANAS was used to assess for negative affect (Watson et al., 1988). Respondents are asked to rate how they felt for each item "during the past week" across a 5-point Likert-type scale ranging from 1 (*very slightly*) to 5 (*extremely*). Higher scores on the Negative Affect scale reflect greater negative affect. Evidence for the construct validity of the scale has been reported in Watson et al. (1988). Test–retest reliability (8 weeks) for the Negative Affect scale has been reported to be .71 (Watson et al., 1988).

The Adult Suicide Ideation Questionnaire (ASIQ; Reynolds, 1991a) is a 25-item measure designed to assess for thoughts related to suicide in adult populations. Each item measures a specific suicidal thought or behavior (e.g., "I thought about killing myself"). Respondents are asked to rate the presence and frequency of experiencing a specific suicidal thought in the past month across a 7-point scale ranging from 0 ("*I have never had this thought*") to 6 ("*Almost every day*"). In support of its validity, ASIQ scores have been found to be positively correlated with prior suicide attempts among college students (Reynolds, 1991a). In general, higher scores on the ASIQ are indicative of greater severity and frequency of suicidal thinking (Reynolds, 1991a). Test–retest reliability (2 weeks) for the ASIQ in a college student sample has been reported to be .86 (Reynolds, 1991b).

Procedure

Surveys given to Black female participants were administered and collected by a Black female experimenter. Surveys given to White female participants taking a large class were administered and collected by an Asian American male experimenter. The responses provided by all 150 Black female participants were matched on age and college class standing with those obtained from 150 White female participants randomly drawn from a larger pool of 214 White female participants. We used this matching procedure to control for variations between Black and White female participants on these two developmental variables. As past findings have indicated, levels of perfectionism, stress, and psychological functioning can all be strongly influenced by developmental factors (Chang, 2000).

All study measures were administered to participants in the form of a take-home survey that was to be returned the next day of class. For our Black female sample, 153 surveys were initially distributed to Black female students attending one of two psychology classes at the historically Black college, resulting in a response rate of 99%. For our White female sample, 306 surveys were initially distributed to students attending a large psychology class at a predominantly White university. Two hundred seventy-five responses were returned, resulting in a general response rate of 90%. Because we were unable to identify the gender or race of the 31 nonrespondents from the initial participant pool, we assumed that all were White women in calculating response rate for this group. Thus, we obtained a very conservative response rate estimate of 87% for White women. Participants were not made aware of the purpose of the study until after the study was completed. To protect the participants' anonymity, only participant identification numbers were placed on the instruments. In addition, all participants signed consent forms indicating that all test data would be kept strictly confidential.

Results

First we conducted a multivariate analysis of variance (MANOVA) between Black and White women on the present set of measures. A significant multivariate difference was found between Black and White women on the present measures, $\Lambda(7, 292) = .85$, $p < .001$. Accordingly, we conducted univariate analyses between Black and White women for each of the present measures to determine where significant differences existed.

Do Black and White Women Differ on Measures of Adaptive and Maladaptive Perfectionism, Stress, and Positive and Negative Psychological Functioning?

Before analyzing the results of our univariate analyses, we assessed whether our operationalization of adaptive and maladaptive perfectionism was empirically valid for both Black and White

women. We conducted an exploratory factor analysis on the six MPS subscales, using principal-axis factoring with varimax rotation (Frost et al., 1993). Results of this analysis are presented in Table 1. As shown in the table, results for Black women indicated two clear factors with eigenvalues greater than 1. Factor 1 was composed of Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts About Actions (factor loadings ranged from .68 to .79), which accounted for 42% of the variance. Factor 2 was composed of Personal Standards and Organization (factor loadings were .78 and .81, respectively), which accounted for an additional 23% of the variance. Results for White women also indicated two clear factors with eigenvalues greater than 1. Again, Factor 1 was composed of the Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts About Actions (factor loadings ranged from .57 to .83), which accounted for 36% of the variance. Similarly, Factor 2 was composed of Personal Standards and Organization (factor loadings were .79 and .83, respectively), which accounted for an additional 29% of the variance. However, unlike the case for Black women, Parental Expectations and Parental Criticism for White women were found to have modest loadings of .38 and .36, respectively, on Factor 2. It is worth noting that these results not only support the validity of our operationalization of adaptive and maladaptive perfectionism for both Black and White women, but they also join Stumpf and Parker's (2000) factor-analytic results to suggest that the MPS, without the inclusion of other measures, can be used to assess for adaptive and maladaptive dimensions of perfectionism.

Results of our univariate analyses are presented in Table 2. As the table shows, Black women, as compared with White women, were found to report significantly greater stress and negative affect. Alternatively, White women in comparison with Black women were found to report significantly greater adaptive perfectionism and life satisfaction. However, because statistical values do not directly convey the magnitude of the differences found, we computed effect sizes using Cohen's *d* (J. Cohen, 1977). For these analyses, sigma was adjusted given the unequal standard deviations underlying the two samples. The results of these analyses are presented in Table 1. Using J. Cohen's convention for small (d = .20), medium (d = .50), and large effects (d = .80), we found that the difference in the mean MPS Adaptive subscale score between Black and White women reflected a small effect (d = .29). The difference in the mean PSS score between Black and White women was also found to reflect a small effect (d = .38). Similarly, the difference in the mean Satisfaction With Life Scale scores between Black and White women was found to reflect a small effect (d = .48). The difference in the mean Negative Affect scores between Black and White women was found to reflect a medium effect (d = .52). Finally, the difference in the mean ASIQ scores between Black and White women reflected a small effect (d = .21).

Table 1
Results of Principal-Axis Factor Analysis (Varimax Rotation) Conducted on the Subscales of the Multidimensional Perfectionism Scale for Black and White Female Students

	Factor 1		Factor 2	
Perfectionism	Black	White	Black	White
Maladaptive perfectionism				
Concern Over Mistakes	**.79**	**.83**	−.20	−.11
Parental Expectations	**.68**	**.57**	.12	.38
Parental Criticism	**.79**	**.68**	−.14	.36
Doubts About Actions	**.75**	**.58**	.03	.20
Adaptive perfectionism				
Personal Standards	.15	.26	**.78**	**.79**
Organization	.20	.13	**.81**	**.83**
Eigenvalue	2.50	2.31	1.37	1.46
Percentage of variance	41.6	35.9	22.9	29.0

Note. n = 150 Black female students; n = 150 White female students. Significant factor loadings (≥ .57) are in boldface type.

How Do Adaptive and Maladaptive Perfectionism Relate to Stress and to Positive and Negative Psychological Functioning in Black and White Women?

To examine how adaptive and maladaptive perfectionism relates to stress and psychological functioning, we computed correlations between the present set of variables for Black and White women (see Table 3). As the table shows, for Black women, adaptive perfectionism was associated with less suicide ideation. For White women, adaptive perfectionism was associated with greater positive affect and life satisfaction. For both Black and White women, maladaptive perfectionism was associated with greater stress, negative affect, and suicide ideation and with less positive affect. In addition, for White women, maladaptive perfectionism was also associated with less life satisfaction. Consistent with past research (e.g., Frost et al., 1993), adaptive and maladaptive perfectionism in both Black and White women were not found to be strongly redundant with each other. Thus, Hamachek's (1978) notion of adaptive and maladaptive perfectionism may serve not only to distinguish between individuals but also to distinguish perfectionistic attributes within the individual.

Does Stress Account for the Relations of Adaptive and Maladaptive Perfectionism With Positive and Negative Psychological Functioning in Black and White Women? Examining a Stress-Mediation Model

Because maladaptive perfectionism, but not adaptive perfectionism, was found to be associated with stress and psychological functioning in both Black and White women, we tested a model involving stress as a mediator of the associations of maladaptive perfectionism with psychological functioning. Following the general guidelines of Baron and Kenny (1986), to establish evidence for the proposed mediation model by conducting a series of regression analyses, it would be necessary to meet three conditions. First, results of regressing stress on maladaptive perfectionism must show that maladaptive perfectionism is significantly associated with stress. Second, results of regressing psychological functioning on maladaptive perfectionism must show that maladaptive perfectionism is significantly associated with psychological functioning. Third, results of regressing psychological functioning on both maladaptive perfectionism and stress should result in a weaker association between maladaptive perfectionism and psychological functioning. Complete mediation would be indicated if the association between maladaptive perfectionism and stress and the association between stress and psychological functioning were

Table 2
Racial Variations in Adaptive and Maladaptive Perfectionism, Stress, and Positive and Negative Psychological Functioning Among Black and White Female Students

	Black (n = 150)			White (n = 150)				
Scale	*M*	*SD*	α	*M*	*SD*	α	$t(1, 298)$	Cohen's *d*
MPS-AS	47.92	7.55	.86	50.01	7.13	.88	−2.46*	.29
MPS-MS	55.51	12.93	.90	54.89	12.40	.90	0.42	.05
PSS	26.91	7.93	.89	24.19	6.38	.86	3.27**	.38
PA	35.36	5.77	.84	35.09	5.17	.83	0.27	.05
SWLS	24.21	6.49	.93	27.09	5.27	.94	−4.22***	.48
NA	21.71	6.53	.85	18.65	5.13	.84	4.52***	.52
ASIQ	12.08	19.36	.97	8.10	19.39	.98	1.78	.21

Note. MPS-A = Multidimensional Perfectionism Scale—Adaptive subscale; MPS-M = Multidimensional Perfectionism Scale—Maladaptive subscale; PSS = Perceived Stress Scale; PA = Positive Affect; SWLS = Satisfaction With Life Scale; NA = Negative Affect; ASIQ = Adult Suicide Ideation Questionnaire.
* $p < .05$. ** $p < .01$. *** $p < .001$.

significant, but the previously significant association between maladaptive perfectionism and psychological functioning became nonsignificant after controlling for stress. Alternatively, partial mediation would be indicated if the association between maladaptive perfectionism and psychological functioning became significantly reduced, but not nonsignificant, after controlling for stress. As suggested by Baron and Kenny, we used Sobel's statistic to test the magnitude and significance of the reduction in variance resulting from the inclusion of stress as a mediator in our analyses. Because maladaptive perfectionism was not related to life satisfaction for Black women, we did not test a mediation model for life satisfaction for this group.

Results of our analyses for Black and White women for each of the two indices of positive and negative psychological functioning are presented in Figures 2A through 2D. As Figure 2A shows, the previously significant link between maladaptive perfectionism and positive affect for Black women ($\beta = -.23$) became nonsignificant ($\beta = -.06$) and was found to be completely mediated by stress ($\Delta\beta = .17$), indicating a reduction of 73.9% of the variance in positive affect (Sobel's statistic = −5.06, $p < .001$). For this group, the resulting model involving maladaptive perfectionism and stress accounted for 34.9% of the variance in positive affect, $F(2, 147) = 39.36$, $p < .001$. Similarly, the previously significant link between maladaptive perfectionism and positive affect for White women ($\beta = -.31$) became nonsignificant ($\beta = -.03$) and was also found to be mediated by stress ($\Delta\beta = .28$), indicating a reduction of 90.3% of the variance in positive affect (Sobel's statistic = −5.05, $p < .001$). For this group, the resulting model involving maladaptive perfectionism and stress accounted for 35.3% of the variance in positive affect, $F(2, 147) = 40.09$, $p < .001$. For life satisfaction, as Figure 2B shows, the previously significant link between maladaptive perfectionism and life satisfaction for Whites ($\beta = -.42$) was not completely mediated by stress ($\Delta\beta = .22$). However, evidence supporting partial mediation was found, indicating a reduction of 52.4% of the variance in life satisfaction (Sobel's statistic = −4.50, $p < .001$). For this group, the resulting model involving maladaptive perfectionism and stress accounted for 34.2% of the variance in life satisfaction, $F(2, 147) = 38.18$, $p < .001$.

As shown in Figure 2C, the previously significant link between maladaptive perfectionism and negative affect for Black women ($\beta = .27$) became nonsignificant ($\beta = .04$) and was found to be completely mediated by stress ($\Delta\beta = .23$), indicating a reduction of 85.2% of the variance in negative affect (Sobel's statistic = 4.43, $p < .001$). For this group, the resulting model involving maladaptive perfectionism and stress accounted for 26.2% of the

Table 3
Zero-Order Correlations Between All Study Measures for Black and White Female Students

Measure	MPS-AS	MPS-MS	PSS	PA	SWLS	NA	ASIQ
MPS-AS	—	.02	−.07	.15	.04	−.07	−.17*
MPS-MS	.18*	—	.47***	−.23**	−.08	.27***	.20**
PSS	−.11	.49***	—	−.59***	−.50***	.51***	.44***
PA	.32***	−.31***	−.59***	—	.58***	−.42***	−.36***
SWLS	.22**	−.42***	−.56***	.44***	—	−.57***	−.44***
NA	−.09	.45***	.60***	−.43***	−.31***	—	.47***
ASIQ	−.06	.40***	.37***	−.34***	−.41***	.29***	—

Note. Correlations for Black female students (n = 150) are above the diagonal and correlations for White female students (n = 150) are below the diagonal. MPS-AS = Multidimensional Perfectionism Scale-Adaptive subscale; MPS-MS = Multidimensional Perfectionism Scale-Maladaptive subscale; PSS = Perceived Stress Scale; PA = Positive Affect; SWLS = Satisfaction With Life Scale; NA = Negative Affect; ASIQ = Adult Suicide Ideation Questionnaire.
* $p < .05$. ** $p < .01$. *** $p < .001$.

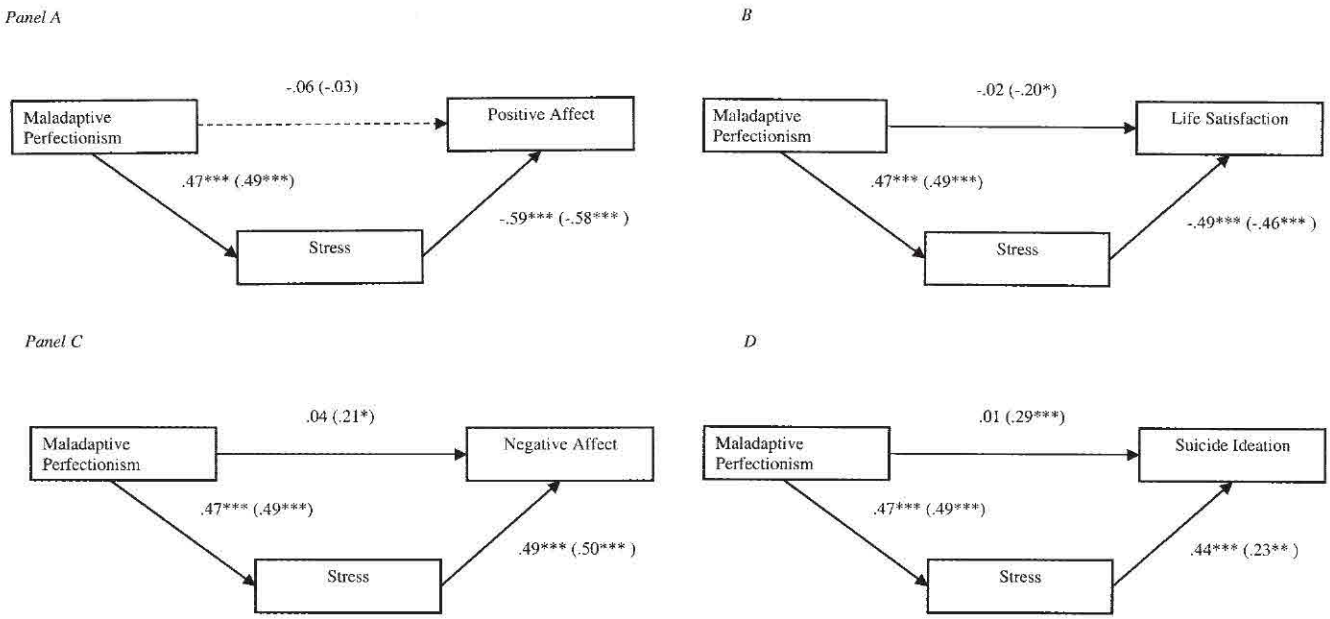

Figure 2. Results of the path analyses delineating those paths found to be significant for at least one group in looking at positive and negative indices of psychological functioning. The path found to be nonsignificant for both groups is indicated by a broken line. All numbers represent standardized beta weights. Numbers outside of parentheses are for Black female students ($n = 150$). Numbers within parentheses are for White female students ($n = 150$). $*p < .05$. $**p < .01$. $***p < .001$.

variance in negative affect, $F(2, 147) = 26.04$, $p < .001$. For White women, the previously significant link between maladaptive perfectionism and negative affect ($\beta = .45$) was not completely mediated by stress ($\Delta\beta = .24$). However, evidence supporting partial mediation was found, indicating a reduction of 53.3% of the variance in negative affect (Sobel's statistic = 4.80, $p < .001$). For this group, the resulting model involving maladaptive perfectionism and stress accounted for 39.4% of the variance in negative affect, $F(2, 147) = 47.77$, $p < .001$. For suicide ideation, as Figure 2D shows, the previously significant link between maladaptive perfectionism and suicide ideation for Black women ($\beta = .20$) became nonsignificant ($\beta = .01$) and was completely mediated by stress ($\Delta\beta = .19$), indicating a reduction of 95.0% of the variance in suicide ideation (Sobel's statistic = 4.13, $p < .001$). For this group, the resulting model involving maladaptive perfectionism and stress accounted for 19.7% of the variance in suicide ideation, $F(2, 147) = 18.06$, $p < .001$. For White students, the previously significant link between maladaptive perfectionism and suicide ideation ($\beta = .40$) was not completely mediated by stress ($\Delta\beta = .11$). However, evidence supporting partial mediation was found, indicating a reduction of 27.5% of the variance in suicide ideation (Sobel's statistic = 2.78, $p < .01$). For this group, the resulting model involving maladaptive perfectionism and stress accounted for 20.4% of the variance in suicide ideation, $F(2, 147) = 18.86$, $p < .001$. Overall these results indicate racial differences in how the association between maladaptive perfectionism and psychological functioning may be mediated by stress.

To appreciate the magnitude of these results, we computed effect sizes using f^2 (J. Cohen, 1977). Following the convention for small ($f^2 = .02$), medium ($f^2 = .15$), and large effects ($f^2 = .35$), we found that the prediction model involving maladaptive perfectionism and stress in Black women accounted for a medium amount of the variance in suicide ideation ($f^2 = .25$) and for a large amount of the variance in both positive affect ($f^2 = .54$) and negative affect ($f^2 = .36$). For White women, the same prediction model accounted for a medium amount of the variance in suicide ideation ($f^2 = .26$) and for a large amount of the variance in positive affect ($f^2 = .56$), life satisfaction ($f^2 = .52$), and negative affect ($f^2 = .65$). Hence, on the basis of effect size, and despite the unmediated associations for White participants, maladaptive perfectionism and stress together appeared to account for a similar amount of the variance in positive affect, negative affect, and suicide ideation between Black and White women.

Discussion

The present study tested the hypothesis that there would be no differences on adaptive and maladaptive perfectionism between Black and White women. We found that White women, as compared with Black women, reported greater adaptive perfectionism. In contrast, we found no difference between Black and White women on maladaptive perfectionism. In comparing Black and White women, we also looked at differences in stress and psychological functioning. We found that Black women, in comparison with White women, reported greater stress and negative affect and reported less life satisfaction. As with the findings for adaptive perfectionism, these differences indicate that there are notable normative differences between Black and White women on these measures also. These normative differences should not be taken to imply, for example, that Black women are somehow substantively

more distressed and maladjusted than White women. The most parsimonious interpretation of these comparative differences is that what is "normal" in Black women may simply be different from what is normal in White women and vice versa.

We also examined whether there were differences between Black and White women on how adaptive and maladaptive perfectionism relate to psychological functioning. Results of correlational analyses indicated that adaptive perfectionism was associated with less suicide ideation for Black women. In contrast, adaptive perfectionism was associated with greater positive affect and life satisfaction for White women. For both groups, adaptive perfectionism was unrelated to stress and negative affect. Thus, the function of adaptive perfectionism in Black and White women in relation to psychological functioning appears to encompass similarities and differences. For both groups, however, maladaptive perfectionism was associated with greater stress, negative affect, and suicide ideation and with less positive affect. Greater maladaptive perfectionism was also associated with less life satisfaction, but this was found for White women only. Thus, greater maladaptive perfectionism does not appear to necessarily be associated with greater dissatisfaction with life for all groups (cf. Hamachek, 1978).

Finally, we tested the validity and generalizability of a model involving stress as a mediator of the link between perfectionism and psychological functioning in Black and White women. Because adaptive perfectionism was not found to be associated with stress in Black and White women, whereas maladaptive perfectionism was, our findings suggest that the role of stress as a potential mediator of the link between perfectionism and psychological functioning may be restricted to situations involving maladaptive perfectionism (Dunkley et al., 2003).

Results of a series of path analyses conducted to test our mediation model indicated that stress plays an important role in both Black and White women. For Black women, stress completely mediated the association between maladaptive perfectionism and psychological functioning in three out of four cases. Thus, for Black women, some support was found for Hewitt et al.'s (1996) contention that the association between perfectionism and psychological functioning may involve stress generated by the former. For White women, stress partially mediated the association between maladaptive perfectionism and psychological functioning in three out of four cases and completely mediated the association in the one remaining case. Thus, we were able to also find support for Hewitt et al.'s stress-generation hypothesis in this group. The partial mediation results for White women are consistent with those obtained in another study based on predominantly White adult samples (Chang, 2000).

Promoting Psychological Functioning in Black and White Female College Students: Targeting Stress in Black Women and Maladaptive Perfectionism in White Women?

Because our path models accounted for a moderate amount of variance in suicide ideation, and a large amount of the variance in positive affect, life satisfaction, and negative affect, we would be remiss if we did not discuss potential implications of our findings for working with Black and White female students. In addition, it is important to note that although our path-analytic results indicated that stress mediates the associations of maladaptive perfectionism and psychological functioning in both Black and White women, our results also indicated that stress plays a stronger mediating role in Black women than in White women. Accordingly, interventions that target both an alleviation of stress (e.g., Meichenbaum, 1985) and a reduction in maladaptive perfectionism (e.g., Ferguson & Rodway, 1994) may offer the most promise in working with White female students experiencing poor positive psychological functioning, excessive negative psychological functioning, or both. In contrast, our path-analytic findings raise the possibility that stress, relative to maladaptive perfectionism, may be a proximal and sufficient determinant of psychological functioning in Black women. Thus, it may be useful for counselors to focus more immediately on the assessment of stress experiences than on perfectionistic tendencies in working with Black female students experiencing poor psychological functioning.

As several studies have shown, identifying the source of stress experiences unique to Black adults is critical (e.g., Mays, Coleman, & Jackson, 1996; Utsey & Ponterotto, 1996). For example, although studies conducted on predominantly White adult samples indicate that everyday stress is associated with various indexes of negative psychological functioning, including suicide ideation (e.g., Dixon, Rumford, Heppner, & Lips, 1992), a study conducted by Klonoff, Landrine, and Ullman (1999) on a large sample of Black adults indicated that experiences of racial discrimination accounted for 6% to 10% of unique variance in measures of psychiatric symptoms after controlling for other relevant variables (e.g., gender, experiences of general stress). However, we agree with Mays's (1988) contention that the experiences of Black women need to be distinguished from those of Black men given that the experiences of each group are likely to be quite different. Hence, we believe that identifying the source of stress experiences unique among Black women remains a crucial topic for future investigation.

Although a number of specific interventions have been proposed for reducing stress in working with Black women, Mays (1986) found that a self-help group intervention that directly focuses on building group cohesion among Black women, presenting Black women with a useful model of facilitation, and promoting adaptive coping patterns among Black women was effective in decreasing experiences of stress and enhancing sense of social support and interpersonal relationships. Mays's (1986) study involved a small sample of working Black middle-aged women, and thus the applicability of her findings for working with distressed young adult Black female college students remains unknown. Nevertheless, we believe that there may be considerable value in extending Mays's promising intervention to situations in which women of similar racial backgrounds have a context in which to discuss and work through their unique concerns and issues.

Some Limitations of This Study

It is worth noting several potential limitations to the present findings. First, this study focused on how adaptive and maladaptive perfectionism relates to broad indexes of positive and negative psychological functioning in Black and White female college students. Insofar as perfectionism has been linked in adult populations to other key indexes of psychological functioning (e.g., depressive symptoms, eating disturbances), it would be useful to expand on the present findings by including other measures of

psychological functioning in future studies. Second, and relatedly, it would be useful in future studies to consider other measures of stress (e.g., negative life events) in replicating the present findings as well as to consider testing for other potential mediators (e.g., social problem-solving ability; Chang, D'Zurilla, & Sanna, in press). Third, the present findings are limited to young adults. Thus, for example, it remains useful to examine the form and function of adaptive and maladaptive perfectionism in more mature Black and White females to identify possible developmental variations in adulthood. Last, given that our study involved a cross-sectional design, we cannot draw strong inferences about cause and effect from the findings.

Summary and Concluding Comment

In conclusion, the present study addressed the need for additional investigation of the functioning of adaptive and maladaptive perfectionism across different racial groups. Our findings indicate that results obtained in studying perfectionism in Black adults may be similar to, but not identical with, those obtained in studying White adults. In addition, our path-analytic results for both Black and White participants point to the usefulness of considering stress as a mechanism that may account for the association between perfectionism and psychological functioning. Clearly, if researchers seek to attain a more inclusive understanding of the value of adaptive and maladaptive perfectionism in people's lives, then more studies will be needed to clarify potential similarities and differences in the form and function of perfectionism across diverse groups.

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