

Perfectionism and Negative Mood: The Mediating Roles of Validation From Others Versus Self

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This study examined a model in which the need for reassurance from others and the capacity for self-reinforcement mediated the relationships between two dimensions of perfectionism (evaluative concerns [EC] perfectionism and personal standards [PS] perfectionism) and anxiety and depression. Results from structural equation modeling of data from 295 college students from a large midwestern university indicated that the need for reassurance from others and the capacity for self-reinforcement fully mediated the relationship between EC perfectionism and anxiety as well as partially mediated the relationships between PS perfectionism and anxiety and depression. Moreover, 41% of the variance in anxiety and 50% of the variance in depression was explained by EC perfectionism, PS perfectionism, the need for reassurance from others, and/or the capacity for self-reinforcement.

Keywords: perfectionism, validation, anxiety, depression, mediation

Originally, perfectionism was viewed as a unidimensional personality characteristic. Recently, researchers have provided empirical evidence to support the multidimensional aspects of perfectionism (e.g., Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Some theorists have argued that there are two dimensions of perfectionism: maladaptive perfectionism and adaptive perfectionism (e.g., Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Slaney, Ashby, & Trippi, 1995). Theoretically, the characteristics of maladaptive perfectionism include having unrealistically high standards, striving for excellent performances motivated by avoiding negative evaluations from others, and being unable to obtain satisfaction from one's own performances (Enns & Cox, 2002; Hamachek, 1978). On the other hand, adaptive perfectionism is characterized by setting realistically high standards, striving for excellent performances motivated by one's own needs, and generating satisfaction from one's own achievement (Hamachek, 1978). These characteristics imply that maladaptive and adaptive perfectionism may differ in their standards (unrealistic vs. realistic), motivation for excellent performances (from others vs. from self), and ability to generate satisfaction or self-reinforcement (unable vs. able). In this study, maladaptive and adaptive perfectionism refer to *evaluative concerns perfectionism* (EC perfectionism) and *personal standards perfectionism* (PS perfectionism), respectively, as suggested by Blankstein and Dunkley (2002).

Besides the different characteristics of the two dimensions of perfectionism, studies have shown that EC perfectionism is posi-

tively associated with negative mood (e.g., anxiety and depression; Blankstein & Dunkley, 2002; Kilbert, Langhinrichsen-Rohling, & Saito, 2005). However, PS perfectionism is not significantly correlated with anxiety and depression (e.g., Blankstein & Dunkley, 2002; Miquelon, Vallerand, Grouzet, & Cardinal, 2005). Some studies even have shown that PS perfectionism is negatively correlated with psychological distress (including anxiety and depression) after EC perfectionism is controlled for (e.g., Aldea & Rice, 2006).

Because EC perfectionism is strongly correlated with anxiety and depression (two of the most common presenting problems for which college students seek help from student counseling centers; Miller & Rice, 1993), researchers and clinicians have devoted their attention to finding effective treatments to help clients with these symptoms. However, they have found that perfectionism is difficult to treat (e.g., Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998) because perfectionism is a stable personality trait, and people are reluctant to give up the high standards that may bring them desired benefits and rewards (Flett & Hewitt, 2002; Slaney, Rice, & Ashby, 2002). Therefore, in order to work with those with perfectionistic tendencies, researchers (e.g., Blankstein & Dunkley, 2002; Ellis, 2002) have suggested that clinicians could help clients to change the negative but modifiable beliefs (e.g., a strong need for reassurance from others) that EC perfectionists use to cope with their problems. At the same time, as Rice, Ashby, and Slaney (1998) suggested, clinicians can focus on adaptive aspects of PS perfectionism to enhance clients' potential strengths. That is, clinicians could help perfectionists through focusing on the modifiable aspects (e.g., a strong need for reassurance from others) of EC perfectionism and the positive aspects (e.g., being able to reinforce their own performance) of PS perfectionism. In this study, we examined two changeable mediators of the relationship between perfectionism (EC perfectionism and PS perfectionism) and negative mood (anxiety and depression): (a) the need for reassurance from others (validation from others) and (b) the capacity for self-reinforcement (validation from self).

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Evaluative Concerns Perfectionism With Validation From Others and Self

Theoretically, those with a high level of EC perfectionism tend to perceive pressure from others to be perfect. They are motivated to be perfect in the hope of getting approval and love from significant others (Hamachek, 1978; Wei, Mallinckrodt, Russell, & Abraham, 2004). Because they are likely to have had caregivers who tended to set up high standards for them or were critical about their performances (Blatt, 1995; Rice, Lopez, & Vergara, 2005), they may internalize these high standards and believe that they must be perfect in order to get approval from others. Empirically, studies have shown that EC perfectionism is significantly correlated with the need for approval from others (e.g., Wade, 1997) and fear of negative evaluation (e.g., Hewitt & Flett, 1991). Therefore, in this study we expected a positive correlation between EC perfectionism and the need for reassurance from others.

Also, those with EC perfectionism may have difficulty in generating positive self-reinforcement because they tend to focus on their negative performances and criticize their own performance (Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Hamachek, 1978). By focusing on these negative self-evaluations, they are less likely to be aware of their own strengths, appreciate their own efforts, or generate positive statements for their own performance. Previous studies have provided some indirect support for this association. For example, studies have shown that EC perfectionism is negatively correlated with constructive thinking (L. R. Burns & Fedewa, 2005), self-esteem (Rice et al., 1998), and self-efficacy (Mills & Blankstein, 2000), which are all positively correlated with the capacity for self-reinforcement (e.g., Heaton & Duerfeldt, 1973; Reschly & Mittman, 1973). It is likely that EC perfectionism would have a negative association with the capacity to generate self-reinforcement.

Personal Standards Perfectionism With Validation From Others and Self

Conversely, PS perfectionism refers to "a self-directed personality pattern" (Hewitt & Flett, 1991, p. 460). Those with a high level of PS perfectionism tend to set up standards based on their own choices and to strive for excellent performance based on their own needs (Miquelon et al., 2005) instead of a need to please others. Empirically, studies have shown that PS perfectionism is not significantly correlated with a need for approval from others (e.g., Wade, 1997) or fear of negative evaluations (e.g., Hewitt & Flett, 1991). However, it is important to note that the above nonsignificant associations refer to the zero-order correlation only. In the perfectionism literature, PS perfectionism and EC perfectionism tend to be moderately or highly associated with each other in a positive direction (Aldea & Rice, 2006). Therefore, after researchers have controlled for EC perfectionism, the effect of PS perfectionism becomes more adaptive (i.e., negatively associated with a negative psychological variable but positively associated with a positive psychological variable) than it appears to be in the zero-order correlation. In other words, after we control for EC perfectionism, the association between PS perfectionism and a psychological variable may have a suppression effect (i.e., change from a nonsignificant to a significant association or change the significant direction from positive to negative or vice versa; see

discussion in Aldea & Rice, 2006; Dunkley et al., 2000). For example, PS perfectionism is positively correlated with emotional dysregulation in the zero-order correlation, but PS perfectionism is negatively correlated with emotional dysregulation after EC perfectionism is controlled for (Aldea & Rice, 2006). On the basis of the theoretical perspective and empirical findings mentioned above, it is reasonable, after EC perfectionism is controlled for, to expect a negative association between PS perfectionism and the need for reassurance from others.

Moreover, Hamachek (1978) argued that PS perfectionists are able to derive self-satisfaction from their own efforts and accomplishments after striving to meet a high standard. This argument implies that those with a high level of PS perfectionism are likely to have the capacity for self-reinforcement. Also, Campbell and Paula (2002) empirically found that participants with a high level of PS perfectionism tend to generate self-satisfaction when they perceive some progress in reaching their original goals. In this study, we expected that PS perfectionism would have a positive correlation with the capacity for self-reinforcement.

Validation From Others Versus Self and Negative Mood

Researchers have argued that people with excessive need for approval from significant others (e.g., caregivers) may be vulnerable to anxiety and depression (Ellis, 2002; Wei, Mallinckrodt, Larson, & Zakalik, 2005). For example, if individuals believe that they must have others' approval in order to feel good, their mood is likely to fluctuate depending on others' availability to provide reassurance to them. If others are available to provide validation, their mood is likely to be elevated. In contrast, if others are not available to provide reassurance, they are likely to experience increased negative mood. However, in reality, it is impossible to have others' reassurance all the time. Therefore, those with excessive need for approval from others are likely to experience anxiety and depression when others fail to validate or reassure them. Previous studies have shown that a high level of need for others' approval and fear of negative evaluations are correlated with anxiety and depression in college student samples (e.g., A. B. Burns, Brown, Plant, Sachs-Ericsson, & Joiner, 2006; Calvete & Cardenoso, 2005; Davila, 2001).

In terms of validation from self, studies have found that the capacity for self-reinforcement is negatively related to anxiety and depression. For anxiety, previous studies indicated a negative association between self-reinforcement and anxiety (Kocovski & Endler, 2000; Rehm & Marston, 1968). Also, some experimental studies have shown that increasing individuals' capacities for self-reinforcement would be an effective therapeutic skill to reduce clients' anxiety or social anxiety (e.g., Rehm & Marston, 1968). For depression, some theorists (e.g., Beck, 1967; Rehm, 1977) have argued that negative self-appraisals and lack of cognitive abilities for generating positive self-reinforcement are the antecedents of depression. Empirically, previous studies have indicated that self-reinforcement is negatively associated with depression (Heiby, 1981; Heiby & Staats, 1990; Wilkinson, 1997). Further, several experimental studies have found that training participants to improve their self-reinforcement skills significantly decreased depressive symptoms (Heiby, Ozaki, & Campos, 1984; Rehm, 1977). Therefore, from the theoretical perspective and the results of previous studies, we expected that a high level of self-

reinforcement would be negatively associated with anxiety and depression.

Mediation Effects of Validation From Others Versus Self

Based on the above literature, there are potential correlations among perfectionism, validation from others and self, and negative mood. Statistically, these correlations meet the criteria for examining mediation effects of validation from others and self. That is, there are significant relationships between (a) predictors (perfectionism) and outcomes (negative mood), (b) predictors and mediators (validation from others and self), and (c) mediators and outcomes (Baron & Kenny, 1986; Holmbeck, 1997). Theoretically, we reasoned that those with high EC perfectionism fear negative evaluations from others and are unable to generate satisfaction from their own performance, which likely contributes to negative mood (Hamachek, 1978). Therefore, it is possible that they may decrease anxiety and depression by decreasing their need for approval from others but increasing their capacity for self-reinforcement (see Figure 1). In contrast, those with high PS perfectionism are self-motivated to be perfect and are able to self-reinforce, which may reduce the likelihood of suffering negative moods (Blankstein & Dunkley, 2002). Thus, it is possible that they may be less likely to rely on others for approval but more capable of reinforcing themselves, which in turn decreases their anxiety and depression. Finally, we speculated that these two mediators (validation from others and self) might be partial mediators between perfectionism and negative mood, because in reality it may be difficult to find mediators which would fully or completely mediate the association between perfectionism and negative mood.

Purpose of the Study

In short, we investigated whether validation from others and self served as mediators between two dimensions of perfectionism and

negative mood. We had two sets of hypotheses. The first main set of hypotheses was that (a) the need for reassurance from others and (b) the capacity for self-reinforcement would significantly mediate the link between EC perfectionism and anxiety and depression. Specifically, EC perfectionism was expected to be positively associated with the need for reassurance from others but negatively associated with the capacity for self-reinforcement. The second main set of hypotheses was that (a) the need for reassurance from others and (b) the capacity for self-reinforcement would significantly mediate the link between PS perfectionism and anxiety with depression. Specifically, PS perfectionism was expected to be negatively associated with the need for reassurance from others but positively associated with the capacity for self-reinforcement. In addition, the need for reassurance from others was expected to be positively related to anxiety and depression. Conversely, the capacity for self-reinforcement would be negatively related to anxiety and depression.

Method

Participants

Data were collected from 295 students enrolled in psychology classes in a large midwestern university. There were 113 men (38%) and 182 women (62%) with an average age of 19.49 years (*SD* = 1.54). Participants included 159 first-year students (54%), 82 sophomores (28%), 35 (12%) juniors, and 19 (6%) seniors. In terms of participants' ethnicity, 90% were Caucasian, 3% were Asian American, 2% were Hispanic American, 2% were international students, 2% were African American, and 1% were multi-racial Americans. Regarding relationship status, 180 (61%) were single, 104 (35%) were in a committed relationship, 5 (2%) were married, 2 (0.7%) were divorced, 1 (0.3%) was widowed, and 3 (1%) indicated "other" for their marital status.

Instruments

Before we describe each instrument, it is important to note that we attempted to use multiple measures or observed variables to represent each of our latent constructs (i.e., EC perfectionism, PS perfectionism, the need for reassurance from others, the capacity for self-reinforcement, anxiety, and depression). As we know, multiple measures for latent variables allow researchers to rule out measurement errors and to have accurate estimations (Byrne, 1998).

Perfectionism. As we already discussed, two dimensions of perfectionism were assessed in the current study. On the basis of suggestions from previous empirical studies (e.g., Blankstein & Dunkley, 2002), the latent variable of EC perfectionism was created through three measures: the Discrepancy subscale from the Almost Perfect Scale—Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001), the Concern Over Mistakes subscale and the Doubts About Actions subscale from the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). Moreover, the latent construct of PS perfectionism was assessed through two measures: the High Standards subscale from the APS-R and the

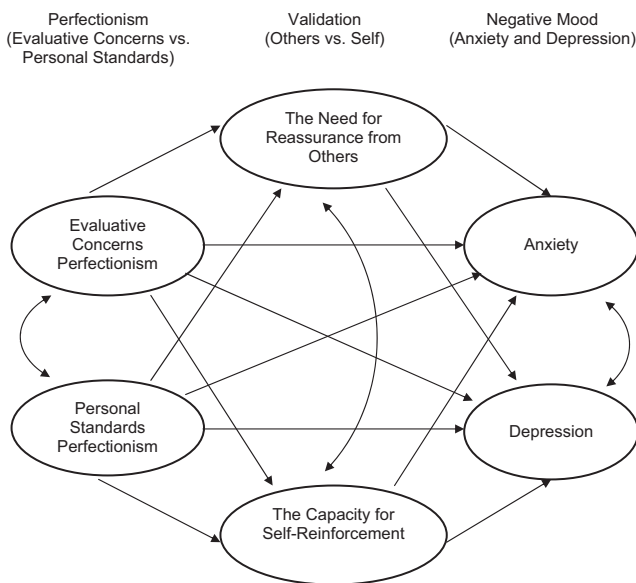


Figure 1. The hypothesized mediation model.

Personal Standards subscale from the FMPS.¹ By following the suggestions of previous studies mentioned above in choosing measures for EC perfectionism and PS perfectionism, we could compare our findings with those of previous studies (e.g., Blankstein & Dunkley, 2002; Wei et al., 2004).

The APS-R is a 23-item scale that measures the tendency toward perfectionism and includes three subscales (i.e., Discrepancy, High Standards, and Order). In the current study, only the Discrepancy subscale and the High Standards subscale were used. The Discrepancy subscale (12 items) estimates the degree to which individuals perceive discrepancy between their expectations and actual performance. The High Standards subscale (7 items) captures the degree to which individuals tend to set up a high standard (or have a high expectation) for their own performance. The APS-R is a 7-point Likert scale (i.e., 1 = *strongly disagree*, 7 = *strongly agree*). Slaney et al. (2001) reported good internal consistency with Cronbach's coefficient alphas of .85 for the scores on Discrepancy and .92 for the scores on High Standards in a college student sample. In the present study, Cronbach's coefficient alphas were .91 for the Discrepancy scores and .94 for the High Standards scores. Moreover, the construct validity of the Discrepancy and the High Standard subscales were supported by a negative correlation between discrepancy and self-esteem ($r = -.35$; Slaney et al., 2001) and a positive association between high standards and academic adjustment ($r = .35$; Rice, Vergara, & Aldea, 2006) in college student samples.

The FMPS is a 35-item scale used to assess perfectionism. The FMPS includes six subscales, but in the present study only three subscales (the Concern Over Mistakes, the Doubts About Actions, and the Personal Standard subscales) were used. First, the Concern Over Mistakes subscale (CM; 9 items) measures the individual's tendency to exaggerate the negative impact of mistakes and view mistakes as personal failure. The Doubts About Actions subscale (DA; 4 items) assesses the degree to which individuals doubt their capacity to finish tasks. The Personal Standards (PS; 7 items) assesses the extent to which individuals are prone to set up high standards for their own behavior. The FMPS uses a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). In terms of reliability, previous studies have indicated these three subscales have good Cronbach's coefficient alphas in college student samples, such as .89 and .71 for the CM and DA scores, respectively (Rice et al., 1998), and .79 for the PS scores (Aldea & Rice, 2006). In the present study, the Cronbach's coefficient alphas for the scores for CM, DA, and PS were .76, .89, and .86, respectively. The construct validity of CM and DA has been supported by positive correlations with depression for college students ($r = .41$ and $r = .48$, respectively; Slaney et al., 2001). Moreover, the construct validity of PS has been established through a positive correlation with conscientiousness for college students ($r = .30$; Enns & Cox, 2002).

The need for reassurance from others. Two measures were used for creating the latent variable of the need for reassurance from others. The first measure was the Brief Fear of Negative Evaluation (Leary, 1983), a 12-item scale that determines the degree of an individual's concerns about receiving negative evaluations (or disapproval) from others. The measure uses a 5-point Likert scale that ranges from 1 (*not at all characteristic of me*) to 5 (*extremely characteristic of me*). The Cronbach's coefficient alpha was .90 in Kocovski and Endler's (2000) study with college

students; the Cronbach's coefficient alpha was .92 in the present study. Evidence for the construct validity was supported by a positive relationship with depression ($r = .33$; Kocovski & Endler, 2000) in a college student sample.

The second measure for the latent construct of the need for reassurance from others was the Revised Martin-Larsen Approval Motivation scale (RMLAM; Martin, 1984). The RMLAM is a 20-item scale that estimates the need to receive positive evaluations (approval) from others as well as to avoid negative rejections. Each item was rated on a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Previous studies showed that the Cronbach's coefficient alpha for the RMLAM scores was .75 for college students (Wei, Mallinckrodt, et al., 2005). In this sample, the Cronbach's coefficient alpha was .82. Moreover, the construct validity was shown by positive correlations with excessive seeking of reassurance and depression in a sample of college students ($r = .42$; Wei, Mallinckrodt, et al., 2005).

The capacity for self-reinforcement. The latent construct of the capacity for self-reinforcement was measured by the Frequency of Self-Reinforcement Questionnaire (FSRQ; Heiby, 1983). The FSRQ, a 30-item instrument, measures individuals' capacities for supporting, encouraging, and reinforcing their own behavior or performance. Individuals respond to the items in a true-false format. Heiby (1983) reported a Cronbach's coefficient alpha of .87 in a college student sample, and the Cronbach's coefficient alpha was .78 in the present study. The FSRQ has demonstrated construct validity through a negative association between self-reinforcement and depression ($r = -.50$; Kocovski & Endler, 2000).

Because we located only one instrument to closely represent the construct of the capacity for self-reinforcement, we followed the suggestions of Russell, Kahn, Spoth, and Altmaier (1998) to create three indicators (parcels) for the latent variable of the capacity for self-reinforcement. First, an exploratory factor analysis with maximum likelihood method was conducted for the 30 items of the FSRQ. All items of the FSRQ were sorted by the magnitudes of the factor loadings, from the highest value to the lowest. Second, a pair of two items (the item with the highest factor loading and the item with the lowest factor loading) was assigned successively to each parcel (Parcel 1, Parcel 2, or Parcel 3) to average the factor loadings on each parcel. Finally, these three parcels (each parcel has 10 items; see Table 1) were used to represent the latent variable of the capacity for self-reinforcement in the following analyses.

¹ In choosing subscales for EC perfectionism, we did not include the Parental Expectation and the Parental Criticism subscales of the FMPS because perfectionism researchers argued that these two subscales may represent the causes of EC perfectionism and be different from EC perfectionism itself (Kawamura, Frost, & Harmatz, 2002; Rice et al., 2005; Shafran & Mansell, 2001). Regarding the latent construct of PS perfectionism, we did not include the Order subscale of APS-R and the Organization subscale of the FMPS because these two subscales tend to have low correlations with the High Standards subscale and the Personal Standards subscale (Enns & Cox, 2002; Slaney et al., 2002). Moreover, perfectionism researchers even pointed out that "whether organization should be considered part of the perfectionism construct remains to be resolved" (Flett & Hewitt, 2002, p. 18).

Table 1
Means, Standard Deviations, and Zero-Order Correlations Among 14 Observed Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	M	SD	Possible range
1. DIS	—	.57	.58	.20	.18	.42	.37	-.47	-.49	-.51	.37	.44	.48	.48	41.08	14.03	12–84
2. CM		—	.56	.23	.54	.31	.31	-.48	-.50	-.42	.27	.28	.27	.30	21.93	6.89	1–45
3. DA			—	.03	.27	.38	.37	-.43	-.37	-.37	.39	.42	.35	.37	10.61	3.34	1–20
4. HS				—	.60	.00	-.17	.10	-.13	.04	-.11	-.09	-.09	-.10	37.14	8.21	7–49
5. PS					—	.05	-.08	-.08	-.26	-.11	.02	-.00	-.06	-.03	23.49	5.39	1–35
6. BFNE						—	.74	-.27	-.30	-.43	.32	.40	.32	.38	35.20	10.03	12–60
7. RMLAM							—	-.28	-.21	-.38	.27	.35	.32	.35	53.88	10.25	20–100
8. FRSQ1								—	.53	.54	-.38	-.40	-.50	-.44	8.05	1.67	1–10
9. FRSQ2									—	.52	-.31	-.34	-.40	-.34	5.92	2.03	0–10
10. FRSQ3										—	-.45	-.47	-.48	-.44	6.37	2.00	0–10
11. DASS-A											—	.78	.64	.62	3.00	3.19	0–21
12. SRAS												—	.68	.73	34.56	8.60	20–80
13. DASS-D													—	.80	4.03	4.02	0–21
14. CES-D														—	8.46	6.15	0–60

Note. $N = 295$. DIS = the Discrepancy subscale of the Almost Perfect Scale—Revised; CM = the Concern Over Mistakes subscale of the Frost Multidimensional Perfectionism Scale; DA = the Doubts About Actions subscale of the Frost Multidimensional Perfectionism Scale; HS = the High Standards subscale of the Almost Perfect Scale—Revised; PS = the Personal Standards subscale of the Frost Multidimensional Perfectionism Scale; BFNE = Brief Fear of Negative Evaluation Scale; RMLAM = Revised Martin-Larsen Approval Motivation; FRSQ 1, 2, and 3 = three parcels from the Frequency of Self-Reinforcement Questionnaire; DASS-A = the Anxiety subscale from the Depression Anxiety and Stress Scales—Short Form; SRAS = Self-Rating Anxiety Scale; DASS-D = the Depression subscale from the Depression Anxiety and Stress Scales—Short Form; CES-D = Center for Epidemiological Studies—Depression. A high score on the above scales indicated a high level of discrepancy, concern over mistakes, doubts about actions, high standards, personal standards, fear of negative evaluation, need for approval, frequency of self-reinforcement, anxiety, and depression, respectively. Absolute values of correlations equal to or greater than .17 were significant at $p < .01$, and those equal to or greater than .20 were significant at $p < .001$.

Anxiety. The construct of anxiety was measured by the Anxiety subscale from the Depression, Anxiety, and Stress Scale—Short Form (DASS-A-short form; Lovibond & Lovibond, 1995) and the Self-Rating Anxiety Scale (SRAS; Zung, 1971). The DASS-A-short form is used to assess several physical and emotional reactions related to anxiety that participants have had over the past week. It uses a 4-point Likert scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Orcutt (2006) reported the Cronbach's coefficient alpha was .83 for the DASS-A-short form scores in a college student sample. The Cronbach's coefficient alpha was .78 in the present study. In terms of validity, the DASS-A-short form scores have been correlated with stress ($r = .63$; Orcutt, 2006) in a college student sample.

The SRAS is a 20-item scale containing 20 commonly found anxiety symptoms (Zung, 1971). Each item uses a 4-point Likert scale ranging from 1 (*some or a little of the time*) to 4 (*most or all of the time*). The Cronbach's coefficient alphas for the SRAS scores in a study with a college sample (Tanaka-Matsumi & Kameoka, 1986) and in the current study were the same (.82). In a college sample, the concurrent validity of SRAS was supported by a positive association with depression ($r = .67$; Tanaka-Matsumi & Kameoka, 1986).

Depression. The construct of depression was measured by the Depression subscale from the Depression, Anxiety, and Stress Scale—Short Form (DASS-D-short form; Lovibond & Lovibond, 1995) and the Center for Epidemiological Studies—Depression Scale (CES-D). The first measure for depression was the DASS-D-short form, which is a seven-item scale that assesses the level of an individual's depressive symptoms during the past week. Item responses are on a 4-point Likert scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). For reliability, Orcutt (2006)

reported a Cronbach's coefficient alpha of .89 for scores on DASS-D-short form in a college student sample. The Cronbach's coefficient alpha was .88 in the present study. Evidence for construct validity of the DASS-D-short form was provided by its positive association with stress among college students ($r = .78$; Orcutt, 2006).

The second measure of depression was the CES-D, a 20-item instrument that assesses the degree of depressive symptoms experienced during the past week. It has a 4-point Likert scale ranging from 0 (*rarely or none of the time* [less than 1 day]) to 3 (*most or all of the time* [5–7 days]). The Cronbach's coefficient alphas for the CES-D scores were .92 in a previous study with college students (Wei, Shaffer, Young, & Zakalik, 2005) and .86 in the present study. Wei, Shaffer, et al. (2005) provided construct validity through a negative correlation with basic psychological needs satisfaction ($r = -.53$) and a positive correlation with other indicators of depression ($r = .77$).

Procedure

In the beginning of the study, participants were told that the purpose of this study was to investigate the association between personality and emotional well-being. Later, they read and signed the research informed consent form that guaranteed the anonymity of their responses to the survey and the confidentiality of the data. After the participants had finished the inventories, they received the debriefing form and extra course credits to thank them for their participation in this study. In general, the survey packets were distributed to small groups of 3–45 students who signed up for one of several experimental times. Participants took 35–50 min to finish our survey packets.

Results

Preliminary Analyses

Means, standard deviations, and zero-order correlations for 14 observed variables are shown in Table 1. Most of the observed variables were significantly correlated with other variables, except for two PS perfectionism variables (i.e., high standards and personal standards). That is, high standards and personal standards were not significantly associated with need for approval, fear of negative evaluation, self-reinforcement, anxiety, or depression. Further, the result of a test for multivariate normality indicated that the data did not meet the assumption of multivariate normality, $\chi^2(2, N = 295) = 428.58, p < .001$. Therefore, the scaled chi-square statistics (Satorra & Bentler, 1988) are reported to adjust for the influence of nonnormality.

Measurement Model

We followed Anderson and Gerbing's (1988) suggestion of a two-step method of structural equation modeling in analyzing our data. First, a confirmatory factor analysis was conducted to test whether the measurement model fit the data. After an acceptable fit of the measurement model had been supported, the structural model was tested. In this study, the measurement model was tested by the LISREL 8.54 program with the maximum likelihood method. Three indexes were used to determine the goodness of fit for the models (Hu & Bentler, 1999): the comparative fit index (CFI; values of .95 or greater indicate that the model adequately fits the data), the root-mean-square error of approximation (RMSEA; values of .06 or less indicate that the model adequately fits the data), and the standardized root-mean-square residual (SRMR; values of .08 or less indicate that the model adequately fits the data). Finally, it is important to note that our sample size is appropriate for testing our hypothesized model. Our sample size fits the recommendations of Hatcher (1994) for testing a structural equation model: (a) our sample size is larger than 150 observations and (b) it contains 5 observations per parameter to be estimated. The number of parameters estimated in our measurement and hypothesized structural model is 43. Also, based on MacCallum, Browne, and Sugawara's (1996) guideline for the power calculation, the power for accurately rejecting our null hypotheses is .96 in our current sample.

The results of the confirmatory factor analysis for the measurement model indicated an acceptable fit to the data, $\chi^2(63, N = 295) = 252.55, p < .01$; scaled $\chi^2 = 207.06, p < .01$; CFI = .97; RMSEA = .09 (90% confidence interval = .08, .10); SRMR = .07. Although the value of our RMSEA fell outside the range recommended by Hu and Bentler (1999), Browne and Cudeck (1993) suggested that RMSEA and SRMR values of .10 or less indicate a fair fit. Besides the overall fit of our measurement model, the factor loadings of 14 observed variables for the 6 latent variables were significant at $p < .001$ (see Table 2). This indicated that the latent variables were appropriately measured by these 14 observed variables. Further, all of the latent variables were significantly correlated at $p < .01$, with three exceptions: PS perfectionism was not significantly associated with the need for reassurance from others, anxiety, and depression.

Table 2
Factor Loadings for the Measurement Model

Measure and variable	Unstandardized factor loading	SE	Z	Standardized factor loading
Evaluative concerns				
perfectionism				
DIS	10.29	0.68	15.08	.73***
CM	5.60	0.38	14.93	.81***
DA	2.36	0.16	14.62	.71***
Personal standards				
perfectionism				
HS	4.95	0.48	10.30	.60***
PS	5.39	0.20	27.06	1.00***
The need for reassurance from others				
BFNE	8.55	0.51	16.81	.85***
RMLAM	8.90	0.58	15.25	.87***
The capacity for self-reinforcement				
FSRQ 1	1.26	0.10	12.78	.75***
FSRQ 2	1.42	0.11	13.44	.70***
FSRQ 3	1.49	0.11	13.25	.74***
Anxiety				
DASS-A	2.65	0.20	13.32	.83***
SRAS	8.05	0.50	16.15	.94***
Depression				
DASS-D	3.56	0.25	14.01	.89***
CES-D	5.53	0.31	17.70	.90***

Note. $N = 295$. DIS = the Discrepancy subscale of the Almost Perfect Scale—Revised; CM = the Concern Over Mistakes subscale of the Frost Multidimensional Perfectionism Scale; DA = the Doubts About Actions subscale of the Frost Multidimensional Perfectionism Scale; HS = the High Standards subscale of the Almost Perfect Scale—Revised; PS = the Personal Standards subscale of the Frost Multidimensional Perfectionism Scale; BFNE = Brief Fear of Negative Evaluation Scale; RMLAM = Revised Martin-Larsen Approval Motivation; FSRQ 1, 2, and 3 = three parcels from the Frequency of Self-Reinforcement Questionnaire; DASS-D = Depression Anxiety and Stress Scales—Short Form. DASS-A = the Anxiety subscale from the Depression Anxiety and Stress Scales—Short Form; SRAS = Self-Rating Anxiety Scale; DASS-D = the Depression subscale from the Depression Anxiety and Stress Scales—short form; CES-D = Center for Epidemiological Studies—Depression.
*** $p < .001$.

Structural Model for Testing Mediated Effects

We used the LISREL 8.54 program with the maximum-likelihood method and followed the three steps of Holmbeck (1997) to test the mediation effects for our hypothesized model (see Figure 1). In the first step, the direct effect model (the predictor variables \rightarrow the outcome variables) was tested in the absence of our two mediators (validation from others and self). If the relationships among the predictor variables and outcome variables (i.e., direct effects) are significant, the model meets the requirement for testing the mediation effects. In the second step, we investigated the overall model fit for our partially mediated model (i.e., our hypothesized model; see Figure 1). In this model, we added our two mediators into the previous direct effect model mentioned in Step 1. In the third step, we compared our partially mediated model (the hypothesized model) with various fully mediated models to determine which model was the best fit for our data.

The results of the direct effect model (two dimensions of perfectionism → negative mood) indicated that the direct paths from EC perfectionism to anxiety and depression (.66 and .71, respectively, $ps < .001$) and the direct paths from PS perfectionism to anxiety and depression (−.30 and −.37, respectively, $ps < .001$) were all significant. In addition to the results from the direct effect model, the results of our partially mediated model (Model A; see Table 3 and Figure 1) indicated an acceptable fit for our data. However, before we concluded that our partially mediated model (Model A) provided the best fit for the data, various fully mediated models (i.e., Models B, C, and D; see Table 3) were tested, and the scaled chi-square difference test (Satorra & Bentler, 2001) was used to compare these fully mediated models with the partially mediated model (i.e., Model A). The first fully mediated model (the fully mediated model for both EC perfectionism and PS perfectionism; Model B) constrained four direct paths to zero (i.e., the paths from EC perfectionism and PS perfectionism to anxiety and depression). The results showed that Model B provided an acceptable fit for the data (see Table 3). However, the result of the scaled chi-square difference test showed a significant difference between Model A and Model B, Δ scaled $\chi^2(4, N = 295) = 43.90, p < .001$. This meant that the four direct paths still significantly contributed to the model and that Model A with these four direct paths was a better fit for the data.

The second fully mediated model (Model C) is a fully mediated model for PS perfectionism and a partially mediated model for EC perfectionism. In Model C, two direct paths (from PS perfection-

ism to anxiety and depression) were constrained to zero. The results indicated that Model C provided an acceptable fit for the data. However, the result of the scaled chi-square difference test showed a significant difference between Model A and Model C, Δ scaled $\chi^2(2, N = 295) = 12.03, p < .01$. Similarly, this implies that the two direct paths still significantly contributed to the model. Therefore, Model A with these two direct paths was a better fit model compared with Model C.

Finally, the third fully mediated Model (Model D; see Figure 2) constrained two direct paths (i.e., from EC perfectionism to anxiety and depression) to zero. That is, Model D is a fully mediated model for EC perfectionism and a partially mediated model for PS perfectionism. The results indicated that Model D provided an acceptable fit to the data. Further, the result of the scaled chi-square difference test showed a nonsignificant difference between Model A and Model D, Δ scaled $\chi^2(2, N = 295) = 0.57, p > .05$, suggesting that the two direct paths did not significantly contribute to the Model. Hence, based on the parsimony principle, Model D without these two direct paths was a better fit to the data. In short, from the results of these model comparisons, Model D (see Figure 2) provided the best fit for the data.² In this model, 41% of the variance in anxiety and 50% of the variance in depression was explained by EC perfectionism, PS perfectionism, the need for the reassurance from others, or the capacity for self-reinforcement. Moreover, 38% of the variance in the need for reassurance from others and 72% of the variance in the capacity for self-reinforcement was explained by EC perfectionism and PS perfectionism.

Table 3
Chi-Square and Fit Indexes among Different Mediation Models

Fit indexes	Model A	Model B	Model C	Model D
Standard χ^2	252.55***	263.82***	257.92***	253.13***
Scaled χ^2	207.06***	227.00***	215.67***	208.56***
df	63	67	65	65
CFI	.97	.96	.96	.97
RMSEA	.09	.09	.09	.09
CI for RMSEA	.08, .10	.08, .10	.08, .10	.07, .10
SRMR	.07	.07	.07	.07
Δ standard χ^2 (df)		A vs. B	A vs. C	A vs. D
		11.27 (4)	5.37 (2)	0.58 (2)
Δ scaled χ^2 (df)		43.90 (4)***	12.03 (2)**	0.57 (2)

Note. $N = 295$. Boldface type represents the best model. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval; SRMR = standardized root-mean-square residual; Model A = the hypothesized structural model (see Figure 1), the partially mediated model for both evaluative concerns (EC) perfectionism and personal standards (PS) perfectionism (i.e., a fully recursive model, where every structural path was estimated); Model B = the fully mediated model for both EC perfectionism and PS perfectionism (i.e., the direct paths from EC perfectionism and PS perfectionism to anxiety and depression were constrained to zero); Model C = model fully mediated for PS perfectionism but partially mediated for EC perfectionism (the direct paths from PS perfectionism to anxiety and depression were constrained to zero); Model D = model fully mediated for EC perfectionism but partially mediated for PS perfectionism (i.e., the best fit model; the direct paths from EC perfectionism to anxiety and depression were constrained to zero).
** $p < .01$. *** $p < .001$.

The Bootstrap Procedure for the Significant Level of Indirect Effects

The bootstrap procedure was used in testing the indirect effect (Mallinckrodt, Abraham, Wei, & Russell, 2006; Shrout & Bolger, 2002). First, we created 1,000 bootstrap samples by random sampling and replacement of the original data set ($N = 295$). Second, the structural model (Model D; see Figure 2) was tested 1,000 times by using the LISREL 8.54 program to produce 1,000 estimations of each path coefficient for the 1,000 bootstrap samples. Third, using the path coefficients obtained from the second step, we calculated the estimations of the indirect effect for two dimensions of perfectionism (EC perfectionism and PS perfectionism) on negative mood (anxiety and depression) through two mediators (the need for reassurance from others and the capacity for self-reinforcement). That is, each estimation of the indirect effect contained the product of two path coefficients. The first path coefficient is from the independent variable (either EC perfectionism or PS perfectionism) to the mediator variable (either the need for reassurance from others or the capacity for self-reinforcement). The second path coefficient is from the mediator (either the need for reassurance from others or the capacity for self-reinforcement) to the dependent variable (either anxiety or depression). Lastly, if

² We also investigated whether the path coefficients of our best fit model (Model D; see Figure 2) were equivalent across men and women through a multiple-group analysis. The results indicated that the path coefficients of Model D were not significantly different for men and women. Thus, no gender effects can be concluded for our final mediation model. These results are available from Tsui-Feng Wu.

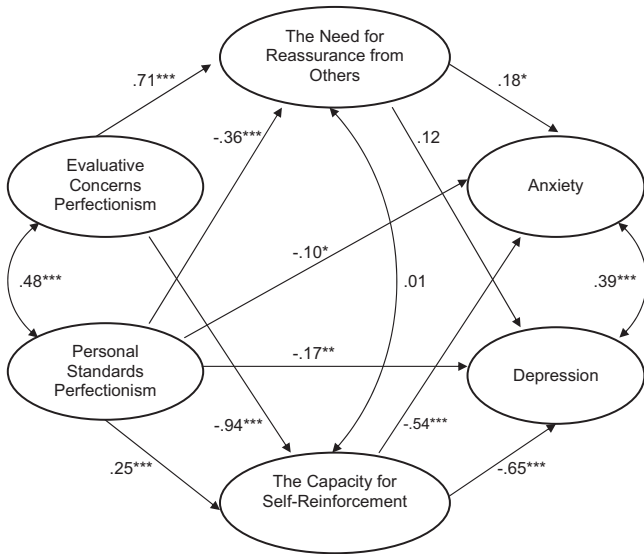


Figure 2. The final structural model. * $p < .05$. ** $p < .01$. *** $p < .001$.

the values of a 95% confidence interval for mean indirect effect do not include zero, it indicates that the specific indirect effect is significant at a $p < .05$ level. As shown in Table 4, almost all of the estimations of the indirect effects were significant at a $p < .05$ level with two exceptions: The indirect effects from EC perfectionism and PS perfectionism to depression through the needs for reassurance from others were not significant.

Moreover, it is important to note that the significantly negative association between PS perfectionism and the need for reassurance from others ($\beta = -.36, p < .001$; after controlling for EC perfectionism in the final structural model; see Figure 2) was

different from the nonsignificant association between these two variables found in the measurement model (i.e., a zero-order correlation; $r = -.02, p > .05$; see Table 5). Similarly, the significantly positive association between PS perfectionism and the capacity for self-reinforcement ($\beta = .25, p < .001$; after controlling for EC perfectionism in the final structural model; see Figure 2) was in the opposite direction from the significantly negative association between these two constructs in the measurement model ($r = -.20, p < .01$; see Table 5). From the statistical perspective, this can be viewed as the suppression effect (a change from a nonsignificant association to a significant association or a change to the opposite direction for the association; Cohen, Cohen, West, & Aiken, 2003). However, the suppression effects for PS perfectionism are not surprising on the basis of the perfectionism literature (see discussion in Aldea & Rice, 2006).

In order to examine the possibility of the suppression effect, an additional structural model was tested by removing EC perfectionism from the model (see Figure 3). The results showed that PS perfectionism was not significantly related to the need for reassurance from others ($\beta = .00, p > .05$; see Figure 3) when EC perfectionism was not in the model. However, recall that PS perfectionism will become more clearly adaptive and negatively related to a negative psychological variable after EC perfectionism is controlled for (Aldea & Rice, 2006). As we can observe in Figure 2, PS perfectionism was indeed negatively associated with the need for reassurance from others ($\beta = -.36, p < .001$; see Figure 2) after EC perfectionism was controlled for. In the same vein, PS perfectionism was negatively associated with the capacity for self-reinforcement ($\beta = -.20, p < .01$; see Figure 3) when EC perfectionism was not in the model. Again, recall that PS perfectionism will become more adaptive and positively related to a positive psychological variable after EC perfectionism is controlled for. Our results also support a positive association between

Table 4
Bootstrap Analyses of the Magnitude and Statistical Significance of Indirect Effects

Independent variable	Mediator variable	Dependent variable	β (standardized indirect effect)	Mean indirect effect (b) ^a	SE of mean ^a	95% CI for mean indirect effect ^a (lower and upper)
Final structural model (Model D)						
Evaluative concerns perfectionism→	Others→	Anxiety	$(.71) \times (.18) = .13$	0.1864	0.0950	0.0093, 0.3919*
Evaluative concerns perfectionism→	Others→	Depression	$(.71) \times (.12) = .09$	0.0863	0.0571	-0.0180, 0.2102
Evaluative concerns perfectionism→	Self→	Anxiety	$(-.94) \times (-.54) = .51$	0.7295	0.1545	0.4473, 1.0624*
Evaluative concerns perfectionism→	Self→	Depression	$(-.94) \times (-.65) = .61$	0.6053	0.0999	0.4246, 0.8129*
Personal standards perfectionism→	Others→	Anxiety	$(-.36) \times (.18) = -.07$	-0.0977	0.0531	-0.2097, -0.0081*
Personal standards perfectionism→	Others→	Depression	$(-.36) \times (.12) = -.04$	-0.0455	0.0317	-0.1175, 0.0097
Personal standards perfectionism→	Self→	Anxiety	$(.25) \times (-.54) = -.14$	-0.2002	0.0692	-0.3440, -0.0752*
Personal standards perfectionism→	Self→	Depression	$(.25) \times (-.65) = -.16$	-0.1671	0.0553	-0.2791, -0.0616*
Additional analysis						
Personal standards perfectionism→	Others→	Anxiety	$(.00) \times (.18) = .00$	0.0024	0.0223	-0.0438, 0.0456
Personal standards perfectionism→	Others→	Depression	$(.00) \times (.12) = .00$	0.0008	0.0110	-0.0253, 0.0209
Personal standards perfectionism→	Self→	Anxiety	$(-.20) \times (-.53) = .11$	0.1595	0.0668	0.0351, 0.3033*
Personal standards perfectionism→	Self→	Depression	$(-.20) \times (-.64) = .13$	0.1300	0.0501	0.0329, 0.2363*

Note. Others = the latent variable of the need for reassurance from others; Self = the latent variable of the capacity for self-reinforcement; CI = confidence interval.

^a These values based on unstandardized path coefficients.

* $p < .05$.

Table 5
Correlations Among Latent Variables for the Measurement Model

Latent variable	1	2	3	4	5	6
1. Evaluative concerns perfectionism	—	.48***	.53***	-.81***	.51***	.53***
2. Personal standards perfectionism		—	-.02	-.20**	.00	-.05
3. The need for reassurance from others			—	-.48***	.45***	.45***
4. The capacity of self-reinforcement				—	-.60***	-.66***
5. Anxiety					—	.84***
6. Depression						—

Note. $N = 295$.

** $p < .01$. *** $p < .001$.

PS perfectionism and the capacity for self-reinforcement ($\beta = .25$, $p < .001$; see Figure 2) after EC perfectionism was controlled for. Thus, it seems that a suppression effect for PS perfectionism is present in the current study, which is similar to the results from previous studies (e.g., Aldea & Rice, 2006; Dunkley et al., 2000).³

Discussion

The purpose of this study was to investigate whether validation from others and self (i.e., the need for reassurance from others and the capacity for self-reinforcement) could mediate the relationship between two dimensions of perfectionism (EC perfectionism and PS perfectionism) and negative mood (anxiety and depression). First, our structural equation modeling results (see Figure 2) supported our initial hypotheses that EC perfectionism is positively correlated with the need for reassurance from others but negatively correlated with the capacity for self-reinforcement. These results are consistent with the theoretical characteristics of EC perfectionists, whose motivation to excel is related to their worrying about negative evaluations from others and who are unable to derive satisfaction from their own performances (Hamachek, 1978). Moreover, these results are also consistent with previous findings of a positive correlation between EC perfectionism and need for approval (Wade, 1997) and a negative correlation between EC perfectionism and self-efficacy, which is positively correlated with self-reinforcement (Mills & Blankstein, 2000).

As discussed in the introduction, those with EC perfectionism may have learned to be perfect in order to receive love and approval from their caregivers who set up high standards or were critical about their performances (Blatt, 1995; Rice et al., 2005; Wei et al., 2004). Growing up in this environment, college students with high levels of EC perfectionism may hold these beliefs (e.g., a need to be perfect) and spend much of their energy in trying to get reassurance from others instead of relying on their internal resources (the capacity for self-reinforcement). Perhaps by being busy reaching unrealistic expectations and being extremely critical in evaluating their own performance they may pay less attention to their internal resources to reward themselves for positive achievement.

More importantly, our results imply that a high need for reassurance from others and a low capacity for self-reinforcement are two psychological mechanisms that contribute to a vulnerability to anxiety and/or depression for those with EC perfectionistic tendencies. These results are consistent with previous findings that indicated a positive correlation between excessive need for reassurance and anxiety (e.g., A. B. Burns et al., 2006) and negative correlations between the capacity for self-reinforcement and anxiety and depression (e.g., Heiby et al., 1984). One possible explanation for this result is that EC perfectionists rely less on internal self-reinforcement but more on external reinforcement (e.g., others' approval) to generate positive feelings (Heiby, 1983). That is, their mood is dependent on whether others can provide them with positive reassurance or approval. However, it is difficult for people to always behave as others want and to get positive approval from others all the time. Even worse, those with EC perfectionistic tendencies may seldom perceive positive approval from others because they think that others have set up unrealistic standards/expectations for their performance. Therefore, they spend much energy worrying about failings to reach others' high expectations and receiving negative evaluations from others. These accumulated feelings of needing approval from others and the lack of the capacity for self-reinforcement contribute to anxiety or depression. The above speculation is consistent with several previous findings that indicated positive correlations between the social-prescribed perfectionism (the perception that parents or others set up excessively high standards for oneself; Hewitt & Flett, 1991) and negative psychological adjustment, such as anxiety and depression (Enns & Cox, 2002).

Besides the EC perfectionism hypotheses, the results also supported our initial hypotheses of PS perfectionism (see Figure 2). That is, those with a high level of PS perfectionism have relatively little need for reassurance from others and a relatively high ability to generate self-reinforcement, both of which in turn decrease PS perfectionists' vulnerability to anxiety and depression. These results are consistent with previous findings that PS perfectionism is

Besides the EC perfectionism hypotheses, the results also supported our initial hypotheses of PS perfectionism (see Figure 2). That is, those with a high level of PS perfectionism have relatively little need for reassurance from others and a relatively high ability to generate self-reinforcement, both of which in turn decrease PS perfectionists' vulnerability to anxiety and depression. These results are consistent with previous findings that PS perfectionism is

³ Besides our hypothesized mediation model (see Figure 1), we also tested three alternative mediation models. These three alternative models were (a) validation \rightarrow perfectionism \rightarrow negative mood, (b) negative mood \rightarrow validation \rightarrow perfectionism, and (c) negative mood \rightarrow perfectionism \rightarrow validation. Before reporting the results, it is important to note that our hypothetical model (see Figure 1) and these three alternative models are actually identical from the statistical perspective. That is, the fit index will be identical across all models. Therefore, it will be informative to compare path coefficients for the mediation effects among these variables. Unfortunately, each of the three alternative models demonstrated only one or two significant mediation effects (i.e., one or two out of eight mediation effects). However, in our final mediation model, six out of eight mediation effects were significant (see Figure 2). The completed results for all three alternative models can be requested from Tsui-Feng Wu.

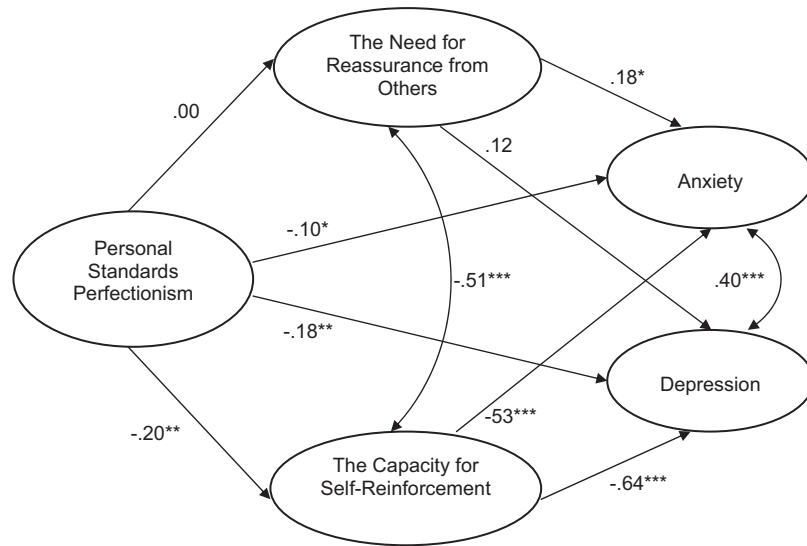


Figure 3. The mediation model for personal standards perfectionism only. $N = 295$. * $p < .05$. ** $p < .01$. *** $p < .001$.

correlated with a positive psychological variable in a positive direction and a negative psychological variable in a negative direction after EC perfectionism is controlled for. For example, Aldea and Rice (2006) found a negative correlation between PS perfectionism and emotional dysregulation after controlling for EC perfectionism. In particular, the results implied that although people with a high level of PS perfectionism tend to set up high standards for themselves, their low need for approval from others and high capacity for self-reinforcement reduce possible negative moods (anxiety and depression) while they pursue their goals. This result is consistent with Blankstein and Dunkley's (2002) argument that the positive aspects of PS perfectionism may balance the possible negative influence of setting high standards on psychological adjustment.

In short, our mediational results regarding EC perfectionism and PS perfectionism indicate that the need for reassurance from others is a negative mediator (i.e., positively correlated with anxiety) and the capacity for self-reinforcement is a positive mediator (i.e., negatively related to anxiety and depression). In particular, if those with a high level of EC perfectionism and PS perfectionism decrease their efforts to seek external reassurance from others and increase their internal capacity for self-reinforcement, they are likely to reduce their vulnerability to anxiety or depression.

Moreover, an interesting suppression effect for PS perfectionism deserves our attention. Specifically, PS perfectionism becomes negatively correlated with the need for reassurance from others and positively associated with the capacity for self-reinforcement after EC perfectionism is controlled for. These relationships are different when they are in the measurement model (without controlling for EC perfectionism). However, these results are not surprising and are consistent with the perfectionism literature and previous findings (e.g., Aldea & Rice, 2006). In the perfectionism literature, PS perfectionism tends to have moderately positive correlations with EC perfectionism (e.g., Aldea & Rice, 2006; Campbell & Paula, 2002). After EC perfectionism is controlled for, PS perfectionism becomes adaptive, has positive relationships

with positive psychological variables (e.g., the capacity for self-reinforcement), and is negatively related to negative psychological variables (e.g., the need for approval from others). Also, Aldea and Rice (2006) found a suppression effect for PS perfectionism in their study. They found that PS was positively correlated with emotional dysregulation in the zero-order correlation. However, PS perfectionism is negatively correlated with emotional dysregulation after the EC perfectionism is controlled for. Finally, this suppression effect could be related to the fact that many college students may have rather high EC perfectionism along with high PS perfectionism. It is important to note that studies that have used cluster analysis found that high scores on both EC and PS perfectionism were positively associated with anxiety and depression (Grzegorek, Slaney, Franze, & Rice, 2004; Rice & Mirzadeh, 2000; Rice & Slaney, 2002).

Although our two mediators (the need for reassurance from others and the capacity for self-reinforcement) fully mediated the relationships between EC perfectionism and negative mood (i.e., anxiety or depression), they only partially mediated the relationship between PS perfectionism and negative mood. This implies that there are other potential mediators for PS perfectionism. For example, conscientiousness, a characteristic of those who are goal-directed, purposeful, and persistent (Costa & McCrae, 1992), may be a potential mediator. Studies have found that PS perfectionism is positively associated with conscientiousness, but conscientiousness is negatively related to anxiety or depression (Cox, Borger, Asmundson, & Taylor, 2000; Enns & Cox, 2002; Mascaro & Rosen, 2005). It is likely that those with PS perfectionism may decrease anxiety or depression through conscientiousness. Future research can explore this possibility. However, it is important to note that the associations between PS perfectionism and anxiety and depression reduced, from $-.30$ and $-.37$ to $-.10$ and $-.17$, respectively, when two mediators were in the model. Therefore, these two mediators could effectively help reduce the possibility of suffering negative mood for people with PS perfectionism.

Limitations and Future Research

This study may contain several potential limitations. First, although we applied appropriate and well-established statistical analyses (i.e., structural equation modeling) to examine our hypothesized model, future researchers may want to use a longitudinal design to expand our findings. Second, most of our participants were Caucasian, and we may need to be cautious in generalizing the results to other ethnic groups. Fortunately, a few studies have attempted to apply perfectionism to different cultural and ethnic groups (Castro & Rice, 2003; Mobley, Slaney, & Rice, 2005; Wang, Slaney, & Rice, 2007). Future studies need to continue this direction. For example, in Asian countries, collectivism is valued; people are educated to be sensitive to the expectations and needs of others in order to increase interpersonal harmony (Markus & Kitayama, 1991). Therefore, a high need for reassurance from others may be consistent with social norms and may not increase negative mood (anxiety and depression) in Asian people. Future researchers may investigate whether the need for reassurance from others serves as a mediator between perfectionism and negative mood for Asians.

Third, although we chose very popular measures with good reliability and validity, they are all self-report measures. Future research may use other methods (e.g., other-report data) to retest our hypothetical model. However, self-report may also be useful in representing our primary variables in the current study. For example, from a counseling perspective, we want to understand how clients' subjective interpretations toward life events influence their negative mood (Corey, 2001). Our results imply that individual's self-report and subjective interpretations about their need for reassurance from others and the capacity for self-reinforcement do have important effects on anxiety and depression for people who have perfectionistic tendencies. Fourth, the orders of our measures were not counterbalanced, which may have generated order effects. However, we used multiple measures to assess different constructs and attempted to alternate the orders among the different constructs. Fifth, Blatt (1995) differentiated two forms of depression: anaclitic (or dependent) and introjective (or self-critical) depression. It is possible that the needs for reassurance from others are more strongly correlated with anaclitic depression, whereas the low capacities for self-reinforcement are more strongly linked with introjective depression. Future researchers may include appropriate measures related to the two forms of depression to investigate the above relationships.

Clinical Implications

To apply our results to a clinical setting, first, counselors can help people with a tendency to perfectionism reduce their excessive need for external reassurance from others and enhance their capacity for internal self-reinforcement. Because having high standards for performance is part of the social expectations of Western societies (Slaney et al., 2002), people may be reluctant to give up their high standards and perfectionism. However, modifying people's maladaptive aspects of EC perfectionism and enhancing people's adaptive aspects of PS perfectionism may be feasible treatment strategies (Dunkley et al., 2000). Second, counselors may help EC perfectionists to be aware of the advantages and disadvantages of the strong need for reassurance from others and

how this strong need is associated with anxiety and depression. This therapeutic strategy is consistent with the suggestion of Beck, Rush, Shaw, and Emery (1979) for treating perfectionism. They hold that helping people examine the relevant advantages and disadvantages of certain perfectionistic beliefs is a useful therapeutic skill to help perfectionists generate long-term changes. Therefore, counselors may help people with a high level of EC perfectionism to be aware of some short-term benefits (e.g., positive feelings) of a strong need to get approval from others and to recognize some long-term drawbacks (e.g., anxiety and depression) of this need. Third, counselors may help EC perfectionists learn some strategies to increase their capacity for self-reinforcement. For example, when EC perfectionists strive for excellent performances, they can attempt to notice the positive aspects of their daily behaviors and write down their daily progress. They may be taught to use positive self-appraisals (e.g., positive self-talk) and to provide themselves with positive rewards (e.g., desired activities) for their successful performance.

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