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Physical Appearance Perfectionism Explains Variance in Eating Disorder Symptoms Above General Perfectionism

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Abstract

Physical appearance perfectionism is a domain-specific form of perfectionism comprising two components: hope for perfection and worry about imperfection (Yang & Stoeber, 2012). Previous studies found that physical appearance perfectionism is related to eating disorder symptoms, particularly the worry about imperfection component, but did not address the question of whether physical appearance perfectionism explains variance in eating disorder symptoms above general perfectionism. The present study investigated the question examining 559 female university students. Physical appearance perfectionism explained an additional 9-17% of variance in eating disorder symptoms above the 11-20% variance explained by general perfectionism. The findings suggest that physical appearance perfectionism plays an important role in disordered eating beyond general perfectionism.

Keywords: general perfectionism; physical appearance perfectionism; eating disorder symptoms; body mass index

1. Introduction

1.1. Perfectionism and eating disorder symptoms

Perfectionism is a personality disposition characterized by striving for flawlessness and setting exceedingly high standards of performance accompanied by concern over mistakes and fear of negative evaluations (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Over the past 30 years, research has produced converging evidence that perfectionism is closely related to eating disorders. In particular, women high in perfectionism show elevated levels of eating disorder symptoms—such as restrained eating, bulimia, food preoccupation, and dissatisfaction with body shape and weight—compared to women low in perfectionism (Bardone-Cone et al., 2007).

1.2. Perfectionism dimensions

Perfectionism, however, is not a unitary construct but best conceptualized as a multidimensional characteristic (Frost et al., 1990; Hewitt & Flett, 1991; see also Enns & Cox, 2002). Factor analyses comparing measures of multidimensional perfectionism found two superordinate factors of perfectionism that are referred to as perfectionistic strivings and perfectionistic concerns (Stoeber & Otto, 2006). Perfectionistic strivings capture perfectionists' exceedingly high standards of performance and striving for perfection. In contrast, perfectionistic concerns capture perfectionists' concern over mistakes and fear of negative evaluations. The

differentiation of the two dimensions is important because only perfectionistic concerns consistently show positive correlations with processes and outcomes associated with psychological maladjustment (e.g., avoidant coping, negative affect), whereas perfectionistic strivings sometimes show positive correlations with processes and outcomes associated with psychological adjustment (e.g., active coping, positive affect)—particularly when the overlap between perfectionistic strivings and perfectionistic concerns is statistically controlled for and the unique relationships of perfectionistic strivings are regarded (Hill, Huelsman, & Araujo, 2010; Stoeber & Otto, 2006).

Accordingly, in research on perfectionism and disordered eating, it is mostly the aspects of perfectionistic concerns that are associated with eating disorder symptoms. Frost et al.'s (1990) multidimensional model of perfectionism, for example, differentiates personal standards and concern over mistakes with the former being an indicator of perfectionistic strivings and the latter an indicator of perfectionistic concerns (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Stoeber & Otto, 2006). Studies investigating personal standards, concerns over mistakes, and disordered eating typically find concern over mistakes to show larger and more consistently positive correlations with eating disorder symptoms than personal standards (e.g., Chang, Ivezaj, Downey, Kashima, & Morady, 2008; Landa & Bybee, 2007; Minarik & Ahrens, 1996). Hewitt and Flett's (1991) multidimensional model differentiates self-oriented perfectionism and socially prescribed perfectionism with the former an indicator of perfectionistic strivings and the latter an indicator of perfectionistic concerns (Frost et al., 1993; Stoeber & Otto, 2006). Studies investigating self-oriented perfectionism, socially prescribed perfectionism, and disordered eating typically find socially prescribed perfectionism to show larger and more consistently positive correlations with eating disorder symptoms than self-oriented perfectionism (e.g., Peixoto-Plácido, Soares, Pereira, & Macedo, 2015; Soares et al., 2009; Welch, Miller, Ghaderi, & Vaillancourt, 2009).

Further studies using the Positive and Negative Perfectionism Scale (PANPS; Terry-Short, Owens, Slade, & Dewey, 1995) to capture perfectionistic strivings (positive perfectionism) versus perfectionistic concerns (negative perfectionism) often find negative perfectionism to show larger and more consistently positive relationships with eating disorder symptoms than positive perfectionism (e.g., Haase, Prapavessis, & Owens, 1999, 2002) with some studies finding positive perfectionism to show negative relationships with eating disorder symptoms

when the overlap with negative perfectionism is statistically controlled for (e.g., Chan & Owens, 2006; Choo & Chan, 2013). Whether the findings can be interpreted as evidence for perfectionistic strivings and perfectionistic concerns showing different relationships with eating disorder symptoms is unclear, however. The reason is that the PANPS has shown problems with content validity and factorial validity. As regards content validity, the PANPS was designed to capture positive and negative consequences of perfectionism (Terry-Short et al., 1995) following Slade and Owens' (1998) dual process model of perfectionism based on reinforcement theory. Consequently, most PANPS items do not capture perfectionism, but alleged *consequences* of perfectionism which is particularly problematic for the items designed to capture positive perfectionism (e.g., "I enjoy the glory gained by my successes," "I gain deep satisfaction when I have perfected something," "I gain great approval from others by the quality of my accomplishments") (see also Flett & Hewitt, 2006). As regards factorial validity, Haase and Prapavessis (2004) conducted a series of factor analyses on the PANPS items and had to discard over 50% of the items before the expected two-factor structure differentiating positive versus negative perfectionism emerged. Similar problems with factorial validity were reported by Egan, Piek, Dyck, and Kane (2011) who found that a two-factor solution explained only 29% of variance in the PANPS items (see also Chan & Owens, 2006). Moreover, positive perfectionism showed an unexpected positive correlation with depression in their clinical sample. Hence, Egan et al. concluded that the PANPS is not an adequate measure of positive and negative perfectionism.

1.3. Physical appearance perfectionism

Another important finding in research on perfectionism is that perfectionism is often domain-specific (Dunn, Gotwals, & Causgrove Dunn, 2005; McArdle, 2010; Stoeber & Stoeber, 2009) and that domain-specific measures of perfectionism may be better predictors of domain-specific processes and outcomes than general measures of perfectionism (e.g., Dunn, Craft, Causgrove Dunn, & Gotwals, 2011). Consequently, researchers have begun to use domain-specific measures of multidimensional perfectionism when examining how perfectionism relates to specific domains of peoples' lives such as sport, parenting, sexuality, and morality (Dunn et al., 2006; Snell, Overbey, & Brewer, 2005; Stoeber, Harvey, Almeida, & Lyons, 2013; Yang, Stoeber, & Wang, 2015).

One domain in which many people have perfectionistic tendencies is their physical

appearance (Stoeber & Stoeber, 2009). To capture individual differences in perfectionism related to physical appearance, Yang and Stoeber (2012) introduced the concept of physical appearance perfectionism. According to their model, physical appearance perfectionism comprises two components: hope for perfection and worry about imperfection. Following the two-factor model of perfectionism (Stoeber & Otto, 2006), hope for perfection relates to the perfectionistic strivings aspects of physical appearance perfectionism whereas worry about imperfection relates to the perfectionistic concerns aspects. Furthermore, the two components can be understood from the perspective of Slade and Owens's (1998) dual model of perfectionism as approach-oriented (hope for perfection) versus avoidance-oriented (worry about imperfection).

In a series of studies examining Chinese and British students, Yang and Stoeber (2012) found preliminary support for the viability of the construct. First, physical appearance perfectionism showed significant correlations with general perfectionism. Furthermore, the two components showed differential relationships with perfectionistic strivings and perfectionistic concerns such that worry about imperfection showed stronger associations with perfectionistic concerns and hope for perfection stronger associations with perfectionistic strivings. Second, physical appearance perfectionism showed significant correlations with a range of symptoms associated with eating disorders: positive correlations with body image disturbance, body weight control behaviors, and body image concerns and negative correlations with physical appearance self-esteem and body areas satisfaction. Moreover, when the overlap between the two components was controlled for, only worry about imperfection continued to show significant correlations with all symptoms whereas most of the correlations of hope for perfection became nonsignificant.

1.4. The present study

Yang and Stoeber's (2012) findings provide preliminary evidence of the importance of physical appearance perfectionism for disordered eating. Their study, however, did not address the question of whether physical appearance perfectionism—as a domain-specific form of perfectionism closely related to disordered eating—explains variance in eating disorder symptoms above variance explained by general perfectionism. To answer this question was the aim of the present study. In this, the study followed Frost et al.'s (1990) and Hewitt and Flett's (1991) models of perfectionism and examined four aspects of general perfectionism: personal standards, concern over mistakes, self-oriented perfectionism, and socially prescribed

perfectionism. Because most research on perfectionism and disordered eating focuses on women (Bardone-Cone et al., 2007), the study investigated women only, but included women from two different cultures (China, United Kingdom) to examine if western and non-western samples would show comparable patterns of relationships.

2. Method

2.1. Participants

Two samples of participants were recruited. Sample 1 comprised 171 female students attending a large university in the eastern coastal region of China. Mean age of participants was 20.5 years (*SD* = 1.4). Participation was voluntary, and participants received no compensation in exchange for participation. Sample 2 comprised 393 female students attending a large university in the south-east of the United Kingdom. Mean age of participants was 19.6 years (*SD* = 3.5). Participation was voluntary, and participants received extra course credit or a £50 raffle in exchange for participation.

2.2. Measures

2.2.1. Sample 1

To measure general perfectionism in Sample 1, we used the College Student Perfectionism Scale (Yang, Zhang, & Zhao, 2007) capturing concern over mistakes (7 items; e.g., "I would look down on myself if I make a mistake") and personal standards (7 items; "I try to be the best when I compete with others"). In addition, we used the Perfectionism subscale of the Eating Disorders Inventory (EDI; Garner, Olmstead, & Polivy, 1983; Chinese version: Chen, Leung, & Wang, 2005) capturing socially prescribed perfectionism (3 items; "Only outstanding performance is good enough in my family") and self-oriented perfectionism (3 items; "I feel that I must do things perfectly or not do them at all") (cf. Sherry, Hewitt, Besser, McGee, & Flett, 2004). To measure physical appearance perfectionism, we used the Physical Appearance Perfectionism Scale (PAPS; Yang & Stoeber, 2012; Chinese version: see online supplementary material) capturing worry about imperfection (5 items; "I worry that my appearance is not good enough") and hope for perfection (5 items; "I hope my body shape is perfect"). To measure eating disorder symptoms, we used the EDI subscales capturing drive for thinness (7 items; "I am preoccupied with the desire to be thinner"), bulimia (7 items; "I stuff myself with food"), and body dissatisfaction (9 items; "I think that my thighs are too large") which were combined to a total score of eating disorder symptoms.

2.2.2. Sample 2

To measure general perfectionism in Sample 2, we used the subscales of Frost et al.'s (1990) Multidimensional Perfectionism Scale capturing concern over mistakes (9 items; e.g., "If I do not do well all the time, people will not respect me") and personal standards (7 items; "I have extremely high goals"). In addition, we used the subscales of Hewitt and Flett's (2004) Multidimensional Perfectionism Scale capturing socially prescribed perfectionism (15 items; "People expect nothing less than perfection from me") and self-oriented perfectionism (15-items; "I strive to be as perfect as I can be"). To measure physical appearance perfectionism, we used the PAPS (see 2.2.1.). To measure eating disorder symptoms, we used the subscales of the Eating Disorder Examination Questionnaire (Fairburn & Beglin, 2008) capturing restraint (5 items; "Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight?"), eating concern (5 items; "Have you had a definite fear of losing control over eating?"), shape concern (8 items; "Has your shape influenced how you think about (judge) yourself as a person?"), and weight concern (5 items; "How dissatisfied have you been with your weight?") which were combined to a total score of eating disorder symptoms.

We also asked participants of Sample 2 to self-report their weight and height which was used to calculate their body mass index (BMI). Eight participants failed to indicate their weight/height, so their BMI was estimated using the expectation-maximization algorithm in SPSS 21. The BMI is the most widely used measure of body size accounting for height, and BMIs calculated from self-reported weight/height have shown high correlations (rs > .90) with BMIs from objective measurements (e.g., Lombardo, Cuzzolaro, Vetrone, Mallia, & Violani, 2011).

2.3. Data screening

We screened the data for multivariate outliers and excluded two participants from Sample 1 and three participants from Sample 2 who showed a Mahalanobis distance with a χ^2 value that was significant at $p < .001$ (Tabachnick & Fidell, 2007). With this, the final samples comprised 169 participants (Sample 1) and 390 participants (Sample 2). All scores displayed satisfactory reliability (Cronbach's alphas > .70) except self-oriented and socially prescribed perfectionism in Sample 1 (Cronbach's alphas = .68 and .51).[1] Because alphas > .50 can be sufficient in early stages of research (Nunnally, 1967) and we wanted to maintain comparability between the two samples, we retained both scores, but results pertaining to socially prescribed perfectionism in

Sample 1 should be interpreted with caution.

3. Results

3.1. Bivariate correlations

First, we examined the bivariate correlations focusing on the correlations with eating disorder symptoms (see Table 1). Across the two samples, all aspects of general perfectionism showed positive correlations with eating disorder symptoms as did both aspects of physical appearance perfectionism. Furthermore, BMI (which was measured in Sample 2 only) showed a positive correlation with eating disorder symptoms and worry about imperfection. Women of larger body size reported more eating disorder symptoms and were more worried about physical imperfection than women of smaller body size.

3.2. Multiple regressions

Next, we computed hierarchical multiple regressions to examine whether physical appearance perfectionism explained variance in eating disorder symptoms above general perfectionism. In Step 1, we entered BMI as a control variable. (Step 1 was omitted for Sample 1 because BMI was measured only in Sample 2.) In Step 2, we simultaneously entered the four aspects of general perfectionism as predictors. In Step 3, we simultaneously entered the two aspects of physical appearance perfectionism as predictors. Table 2 shows the results.

In Sample 1, general perfectionism explained 11% of variance in eating disorder symptoms. Moreover, with the overlap between the aspects statistically controlled for, only the two perfectionistic concerns aspects (concern over mistakes, socially prescribed perfectionism) showed significant positive regression weights indicating that they made a unique contribution to the prediction of eating disorder symptoms. Physical appearance perfectionism explained an additional 9% of variance, but only the perfectionistic concerns component (worry about imperfection) showed a significant regression weight. Sample 2 showed the same pattern when BMI was controlled for in Step 1. General perfectionism explained 20% of variance in eating disorder symptoms, and again only concern over mistakes and socially prescribed perfectionism showed significant positive regression weights. Physical appearance perfectionism explained an additional 17% of variance, and again only worry about imperfection showed a significant regression weight.

4. Discussion

4.1. The present findings

The present findings corroborate previous findings that physical appearance perfectionism is positively associated with eating disorder symptoms (Yang & Stoeber, 2012). Moreover, the present study found physical appearance perfectionism to explain variance in eating disorder symptoms above general perfectionism. With this, the study's findings contribute to the growing body of evidence that domain-specific forms of perfectionism explain variance in certain domains of life beyond general perfectionism (cf. Dunn et al., 2011; McArdle, 2010). Whereas people high in general perfectionism are mostly concerned about their work and studies (school, university) (Slaney & Ashby, 1996; Stoeber & Stoeber, 2009), women showing eating disorder symptoms are concerned about their physical appearance and this concern may dominate their lives. Consequently, a measure of perfectionism focusing on this domain of life (physical appearance) has explanatory power with regards to individual differences in eating disorder symptoms beyond general measures of perfectionism. This, however, does not suggest that general perfectionism does not play an important role in explaining eating disorder symptoms. As the present study showed, general perfectionism explained between 11% (Chinese sample) and 20% (British sample) of variance in eating disorder symptoms which is comparable to what other studies using the same or similar measures as the present study found (e.g., Bardone-Cone, 2007; Chang et al., 2008; Sherry et al., 2004; Zhu, 2009).

Furthermore, the results of the multiple regressions dovetail with previous findings that it is mainly the perfectionistic concerns aspects of perfectionism that are problematic, not the perfectionistic strivings aspects (Stoeber & Otto, 2006). Whereas all aspects of perfectionism showed significant bivariate correlations with eating disorder symptoms, a different pattern emerged when multiple regressions were conducted controlling for the overlap between the aspects. Regarding general perfectionism, only concern over mistakes and socially prescribed perfectionism explained variance (but not personal standards and self-oriented perfectionism) when the overlap was controlled for. Regarding physical appearance perfectionism, only worry about imperfection (but not hope for perfection) explained additional variance. This suggests that perfectionistic concerns aspects of both general perfectionism and physical appearance perfectionism are primary risk factors for disordered eating, not perfectionistic strivings aspects (Wade, Wilksch, Paxton, Byrne, & Austin, 2015).

4.2. Limitations and future studies

The present study had a number of limitations. First, the reliability of socially prescribed

perfectionism in Sample 1 was unsatisfactory. Even though the pattern of significant relationships in Sample 1 was the same as in Sample 2, future studies need to reassess the viability of the EPI to measure socially prescribed perfectionism (cf. Sherry et al., 2004). Second, all items of the PAPS's hope for perfection subscale capture hope, rather than an active striving for perfection. Future studies may want to explore if hope for perfection would predict eating disorder symptoms beyond general perfectionism if items were modified to capture active striving for perfection (e.g., "I strive for a perfect body shape"). Third, the present study examined multidimensional perfectionism following Frost et al.'s (1990) and Hewitt and Flett's (1991) models. Although they are the most widely-used models of multidimensional perfectionism, there are other prominent models (e.g., Hill et al., 2004; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) that future studies may profit from extending the present research to. Finally, the study examined female university students. Future studies need to investigate whether the findings replicate in male university students. Furthermore, future studies should investigate whether the findings generalize to school students and to non-student samples (e.g., community samples, clinical samples).

4.3. Conclusion

Our study represents the first study to investigate whether physical appearance perfectionism explains variance in eating disorder symptoms beyond general perfectionism. The results indicate that this is the case, and the additional percentage of variance explained is significant. Hence, researchers and practitioners interested in understanding disordered eating may profit from paying closer attention to individual differences in physical appearance perfectionism, particularly worry about imperfection, in the assessment and treatment of eating disorders.

Footnotes

[1]Means, standard deviations, and Cronbach's alphas of all scores are available from the first author.

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Table 1

Bivariate Correlations

Variable	1	2	3	4	5	6	7	8
General perfectionism								
1. Concern over mistakes		.54***	.42***	.48***	.40***	.19*	—	.28***
2. Personal standards	.56***		.47***	.75***	.21**	.33***	—	.17*
3. Socially prescribed perfectionism	.72***	.41***		.53***	.27***	.28***	—	.27***
4. Self-oriented perfectionism	.46***	.74***	.41***		.23**	.28***	—	.16*
Physical appearance perfectionism						.35***	—	
5. Worry about imperfection	.55***	.24***	.46***	.21***			—	.39***
6. Hope for perfection	.38***	.29***	.30***	.24***	.48***			.25***
7. BMI	–.05	–.04	–.02	.02	.16**	–.08		—
8. Eating disorder symptoms	.42***	.25***	.39***	.23***	.63***	.33***	.30***	

Note. Correlations above the diagonal are from Sample 1 (N = 169 women), correlations below from Sample 2 (N = 390 women). BMI = body mass index (Sample 2 only).

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

Table 2

Summary of Hierarchical Regression Analyses Predicting Eating Disorder Symptoms

	Sample 1 (N = 169 women)		Sample 2 (N = 390 women)	
Variable	ΔR^2	β	ΔR^2	β
Step 1	—		.09***	
BMI		—		.30***
Step 2: General perfectionism	.11***		.20***	
Concern over mistakes		.23*		.30***
Personal standards		–.03		.02
Socially prescribed perfectionism		.20*		.17**
Self-oriented perfectionism		–.03		.00
Step 3: Physical appearance perfectionism	.09***		.17***	
Worry about imperfection		.28***		.49***
Hope for perfection		.10		.06

Note. Dependent variable = eating disorder symptoms. β = standardized regression coefficient. BMI = body mass index (Sample 2 only).

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

Supplementary Material

大学生外表完美主义问卷

请阅读每个条目，决定你同意或不同意的程度。如果你非常同意，圈 5；如果你非常不同意，圈 1；如果你感到在两者之间的某个地方，圈 1 到 5 之间的一个数字；如果你感到中立或无法确定，中间的数字是 3。谢谢！

非常不同意 ① ② ③ ④ ⑤ 非常同意

1	我对自己的长相不满意。	① ② ③ ④ ⑤
2	我希望自己外形完美。	① ② ③ ④ ⑤
3	无论我怎么打扮，我的外表都无法让我高兴。	① ② ③ ④ ⑤
4	我希望自己外表很吸引人。	① ② ③ ④ ⑤
5	我担心自己的外表不够好。	① ② ③ ④ ⑤
6	我希望自己有让人羡慕的外表。	① ② ③ ④ ⑤
7	我希望自己很有魅力。	① ② ③ ④ ⑤
8	我真希望在外表上能脱胎换骨。	① ② ③ ④ ⑤
9	我的外表与我的期望相去甚远。	① ② ③ ④ ⑤
10	我担心人家评价我的外表。	① ② ③ ④ ⑤
11	我经常想到自己外表的不足。	① ② ③ ④ ⑤
12	我希望自己长得很漂亮/英俊。	① ② ③ ④ ⑤