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Mediators between perfectionism and eating disorder psychopathology in a community sample

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ABSTRACT

The aim of this study was to investigate the mediating effect of shape and weight overvaluation and conditional goal-setting on the relationship between perfectionism and eating pathology among women in the general community. Results from structural equation modeling indicated that the full mediation model previously established with a clinical sample (Watson et al., 2011), generalized to the present community sample ($n = 202$). The indirect effect of self-oriented perfectionism on eating disorder pathology was .25 ($p < .001$) via shape and weight overvaluation, and .10 ($p < .01$) via conditional goal-setting, supporting the hypothesis that self-oriented perfectionism increased eating disorder psychopathology via each mechanism. Shape and weight overvaluation was the stronger mediator. The findings provide evidence to support existing cognitive-behavioral formulations of eating pathology and clinical perfectionism, and have implications for the prevention of eating pathology.

1. Introduction

Perfectionism, defined as the setting of excessively high standards for performance accompanied by overly critical self-evaluation (Frost, Marten, Lahart, & Rosenblate, 1990), has a robust link to eating pathology (Bardone-Cone et al., 2007; Egan, Wade, & Shafran, 2011). Despite intermediary mechanisms potentially serving as conduits between perfectionism and eating pathology, few studies have examined mediation models in clinical or community populations (Bardone-Cone et al., 2007).

Watson, Raykos, Street, Fursland, and Nathan (2011) investigated the mediators of shape and weight overvaluation and conditional goal-setting among women with eating disorders ($n = 201$). Shape and weight overvaluation occurs when the individual evaluates self-worth largely or almost entirely on body shape and weight, to the exclusion of other domains (e.g., work, hobbies, study, friendships) and is related to but distinct from perfectionism (Wade & Bulik, 2007; Watson et al., 2011). Cognitive behavioral theories (Fairburn, Cooper, & Shafran, 2003; Garner & Bemis, 1985; Slade, 1982) propose that perfectionism is a proximal risk or etiological factor for the development of shape and weight overvaluation. Conditional goal-setting is a cognitive style informed by broader social cognitive theories and described within conditional goal-setting theory (Street, 2002). Traditional goal theories propose that individuals arrange personal goals in hierarchies; from concrete, proximal goals at the lower level, to abstract, distal goals – most commonly personal happiness – at the pinnacle. Conditional goal-setting is the belief that a higher order goal is *only* attainable upon reaching connected lower order goals ("I will only be happy when I get the promotion I want", "I will only be happy when I get pregnant"). Watson et al. (2011) found that women with eating disorders who exhibited higher conditional goal-setting related to shape and weight (e.g., "I will only be happy if I weigh _ _ pounds") had more severe eating pathology. Further, shape and weight overvaluation and conditional goal-setting for shape and weight were found to mediate the relation between self-oriented perfectionism and eating pathology.

Based on Watson et al. (2011) findings, we hypothesize that shape and weight overvaluation and conditional goal-setting will mediate the relation between perfectionism and eating pathology in a community sample of adult women.

2. Method

2.1. Participants

Participants were a community sample of 202 women recruited through snowball sampling. Snowball sampling is a process whereby an initial set of participants begin the recruitment process, serving as informants about the research to other potential participants. An attempt was made to recruit a diverse set of initial informants, i.e. young adult women, through university notices, email networks, and social networking sites. Inclusion criteria were female, 18 + years, and English-speaking.

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Participants were invited to complete an online survey and to pass on details of the study to other participants who met eligibility criteria.

Participants were derived from a sample of 265 women who initiated the study survey, and comprised those who completed the survey (76%). Survey completers were significantly younger and less likely to be employed than those who did not complete the survey. Ethical approval was granted by Curtin University Human Research Ethics Committee.

2.2. Measures

The online survey package contained an information sheet, followed by a demographic section, the Eating Disorder Inventory self-oriented perfectionism subscale (Garner, Olmstead, & Polivy, 1983; Sherry, Hewitt, Besser, McGee, & Flett, 2004), the Conditional Goal-setting in Eating Disorders Scale (CGS-EDS; Watson et al., 2010) and the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994).

2.2.1. Perfectionism

Self-oriented perfectionism was evaluated with the 3-item self-report EDI-SOP (Garner, Olmsted, & Polivy, 1983; Sherry et al., 2004). Consistent with previous research (Bardone-Cone, 2007; Sherry et al., 2004) and Watson et al. (2011) original mediator study, items were scored from 1 to 6 (scale range 3–18), rather than the original scoring method of 0-0-0-1-2-3, to maximize variance for analysis. The subscale, scored by this method, has good reliability and convergent validity (Bardone-Cone, 2007; Sherry et al., 2004).

2.2.2. Shape and weight overvaluation

Shape and weight overvaluation was assessed with Items 22 and 23 from the EDE-Q (EDE-Q SWO; Fairburn & Beglin, 1994), which ask "Has your weight influenced how you think about (judge) yourself as a person?" and "Has your shape influenced how you think about (judge) yourself as a person?" respectively. Items were summed as in previous research (Jones, Peveler, Hope, & Fairburn, 1993). The measure ranges from 0 to 12.

2.2.3. Conditional goal-setting

The CGS-EDS (Watson et al., 2010) measured conditional goal-setting specific to body shape and weight goals. The participant records his/her most important body shape/weight goal, then rates eight items on a Likert scale anchored at each end by a statement endorsing (e.g., "*I will only be happy if I am at my ideal weight*") and not endorsing (e.g., "*I can be happy, even if I am not my ideal weight*") a conditional goal-setting thinking style. The scale ranges from 1 to 8, with higher scores indicating higher conditional goal-setting. The reliability and validity of the instrument are acceptable and factor analysis supports a one-dimensional structure (Watson et al., 2010).

2.2.4. Eating pathology

Eating pathology was measured with the self-report EDE-Q (Fairburn & Beglin, 1994). The EDE-Q contains four subscales of Restraint (dieting/restrictive eating; 5 items), Eating Concern (5 items), Weight Concern (5 items), and Shape Concern (8 items). In the present study, Items 22 and 23 were excluded from the Shape Concern and Weight Concern subscales, respectively, to reduce measure-specific overlap with shape and weight overvaluation. Scores on the subscales and global (the average of the four subscales) range from 0 to 6, with higher scores indicating greater severity. The EDE-Q also measured frequency of disordered eating episodes (objective binge eating, self-induced vomiting, and laxative misuse) over the previous 28 days and body mass index (kg/m^2). The EDE-Q has good reliability and validity, and is suitable for use in community samples (Fairburn & Beglin, 1994).

2.3. Statistical analysis

The latent variables in the present study were self-oriented perfectionism, shape and weight overvaluation, conditional goal-setting, and eating pathology. The three items of the EDI-SOP subscale were used as indicators of self-oriented perfectionism; the two EDE-Q SWO items were used as indicators of shape and weight overvaluation; and the four EDE-Q subscales were used as indicators of eating pathology. To create indicators for the latent construct of conditional goal-setting, a single factor principal component model was fitted separately to the eight CGS-EDS items. The screen-plot suggested that a single factor was adequate. Three parcels were created (Parcel 1 comprising Items 3, 7, and 9; Parcel 2 comprising Items 1, 7, and 8; Parcel 3 comprising Items 2 and 5) using the item loadings as a guide, in accordance with the "item-to-construct balance" approach (e.g., Little, Cunningham, Shahar, & Widaman, 2002). All indicators were defined as continuous and congeneric measures of the respective latent variables.

Structural equation modeling (SEM), as implemented through LISREL 8.8 (Jöreskog & Sörbom, 2007), was used to test the mediation hypothesis. The analyses consisted of two conceptually distinct stages (Anderson & Gerbing, 1988). At Stage 1, a confirmatory factor analysis (CFA) was conducted to test the measurement model described in the previous paragraph. Following confirmation of the measurement model, the analysis moved to a second stage that involved comparing the saturated model (Fig. 1) to a nested mediator model in which the direct pathway between self-oriented perfectionism and eating pathology had been dropped. A significantly better fit for the saturated model would lead to the rejection of the mediator model; a non-significant difference between the fits of the two models would lead to the acceptance of the more parsimonious mediator model.

Because different fit indices evaluate model fit from slightly different perspectives, more than one fit index is generally reported (Kline, 2005). The present study used the following five fit statistics: chi-square divided by its degrees of freedom (χ^2/df), the comparative fit index (CFI), the incremental fit index (IFI), the goodness-of-fit index (GFI), and the root mean square error of approximation (RMSEA). Acceptable fit is generally indicated by a χ^2/df value less than .3 (Bollen, 1989; Kline, 2005), a CFI and IFI equal to or greater than 0.95, a GFI in the .90s (Byrne, 2001; Hu & Bentler, 1999; Kline, 2005), and a 90% CI for the RMSEA that encompasses .08 (Benet-Martínez & Karakitapoğlu-Aygün, 2003). Model comparisons were made using the Akaike information criteria (AIC) and the parsimony-adjusted normed fit index (PNFI). Smaller AIC and higher PNFI values indicate better fit and greater parsimony (Kline, 2005).

3. Results

3.1. Participant characteristics

Participants had a mean age of 30 ($SD = 11$) years, 52% were married or defacto, and 89% were employed. The highest education level completed was tertiary (74%), technical/trade certificate (7%), higher school certificate (Yr 12) (17%), or leaving certificate (Yr 10) (2%). English was the first language of 97% of respondents, and region of birth was Australia (79%), United Kingdom (7%), Asia (4%), Africa (3%), North America (2%), New Zealand (2%), Europe (2%), and South America (<1%).

The mean self-reported BMI was 24.02 ($SD = 5.11$) kg/m^2. The average scores on the study measures were 11.54 ($SD = 3.81$) for EDI-SOP, 5.64 ($SD = 4.12$) for EDE-Q SWO, 3.30 ($SD = 1.86$) for CGS-EDS, and 1.90 ($SD = 1.33$) for the EDE-Q global. The majority of participants reported no episodes of objective binge eating (none 61%, $n = 120$; regular[1] 19%, $n = 38$; total $n = 202$; $M = 2.31$, $SD = 4.97$), self-induced vomiting (none 93%, $n = 187$; regular 4%, $n = 8$; total $n = 201$; $M =$

[1] ≥Once per week.