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Bulimic symptomatology: The role of adaptive perfectionism, shape and weight concern, and self-esteem

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ABSTRACT

An interactive model implicating high perfectionism, high weight and shape concern, and low self-esteem in the onset and maintenance of bulimic symptoms (Bardone, Vohs, Abramson, Heatherton, & Joiner, 2000; Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999) has received mixed support. This study aimed to replicate the cross-sectional model in a clinical sample of women with eating disorders, and to investigate whether the model could predict changes in binge eating and purging at the end of treatment. Eating disorder outpatients ($n = 353$) completed measures of perfectionism, weight/shape concern, self-esteem, and bulimic symptoms at pre-treatment and discharge. Contrary to the hypotheses, the three-way interaction did not predict binge eating or purging cross-sectionally or prospectively as a moderator of psychotherapy outcome. It was concluded that the robustness of the interactive model seems questionable and may be impacted by an inadequate conceptualization of the perfectionism construct.

Bulimic behaviours, specifically binge eating and purging, are common symptoms of eating disorders (American Psychiatric Association, 2000; Byrne, Fursland, Allen, & Watson, 2011; Fairburn et al., 2009) and perpetuate illness (Fairburn, Cooper, & Shafran, 2003; Fairburn, Marcus, & Wilson, 1993). These behaviours can lead to medical complications such as electrolyte disturbance, dehydration, acute gastric dilatation, elevated abdominal pressure and increase risk for dental complications, liver damage, gastrointestinal illnesses, obesity, insulin resistance, and Type 2 diabetes. Accordingly, understanding the factors that explain the onset and maintenance of bulimic symptomatology is crucial.

The three-factor theory by Bardone-Cone and colleagues (Bardone, Vohs, Abramson, Heatherton, & Joiner, 2000; Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999), implicating the interaction between high perfectionism, high body dissatisfaction, and low self-esteem, provides a model of bulimic behaviour. The model conceptualizes body dissatisfaction as a stressor with perfectionism and self-esteem as moderators of the pathway to bulimic symptomatology (Bardone et al., 2000). Strengths of the model include its consistency with clinical accounts and theory, empirical testability, and integrative nature (i.e., understanding how risk and maintenance factors work together). While many risk and maintenance factors for bulimic symptomatology have been supported (Jacobi & Fittig, 2010; Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004), these studies are generally atheoretical and do not translate to integrated, testable multivariate models (Shaw, Stice, & Springer, 2004).

Since its formulation, Bardone-Cone's model has undergone empirical investigation, predominantly as a model of bulimic pathology onset and typically among the female college student population. These evaluations have rendered mixed findings. The first empirical test of the model predicted bulimic symptoms as hypothesized, such that female college students ($n = 342$) who were perfectionistic, had low self-esteem and perceived themselves as overweight developed greater bulimic symptoms over nine months (Vohs et al., 1999). Using different measures of the constructs and a shorter follow-up, the model replicated in one study ($n = 70$) (Vohs et al., 2001) but not in another ($n = 95$) (Steele, Corsini, & Wade, 2007). In line with evidence of the multidimensional nature of perfectionism, the latter study adapted the model by omitting adaptive and incorporating only maladaptive perfectionism (i.e., evaluative concerns perfectionism), which may have affected replicability. In a further adaptation ($n = 406$) (Bardone-Cone, Abramson,

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Vohs, Heatherton, & Joiner, 2006), self-esteem was interchanged for self-efficacy, and binge and purge symptoms were predicted separately, rather than collectively as in previous research. Over a 3-month period, the model predicted binge eating, but not purging. In a recent cross-sectional study ($n = 277$) (Tissot & Crowther, 2008), self-oriented and socially prescribed perfectionism dimensions were incorporated, and the model was integrated with Stice's (1994, 2001) sociocultural risk model, but the three-factor model failed to replicate.

Two known studies have examined the three-factor theory as a model of onset in non-college age groups. Among female early adolescents ($n = 496$), the model was not supported (Shaw et al., 2004) suggesting that the model may not be robust, a plausible explanation given that bulimic symptoms increased significantly over the 1-year period. Alternatively, developmental factors may have obscured model fit, as perfectionism may not reach its peak until mid-adolescence (Steele et al., 2007). Among females with a mean age of 45 years ($n = 150$) followed up over two years, the model prospectively predicted bulimic symptoms (Holm-Denoma et al., 2005). A sensitivity analysis found that the model predicted maintenance/exacerbation of symptoms, but not onset. This is understandable given that participants were aged beyond the peak risk period of onset for bulimic symptomatology (i.e., adolescence to young adulthood).

Only one study has considered the three-factor model as a maintenance model in a clinical sample (Bardone-Cone et al., 2008), testing a cross-sectional interactive model of multidimensional perfectionism, self-efficacy, and weight/shape concern among women with full- or subthreshold bulimia nervosa (BN) ($n = 204$). Adaptive and maladaptive perfectionism (personal standards and evaluative concerns perfectionism respectively) were examined within separate models, and each model was tested to predict binge eating or purging, restricting analysis to those with active symptoms who self-reported one or more episodes in the previous month. The three-way interactions with adaptive and maladaptive perfectionism predicted binge eating, such that perfectionistic women low in self-efficacy and highly concerned about shape and weight experienced the most binge episodes. Vomiting was also predicted, but only with the three-factor model that included the adaptive (i.e., not the maladaptive) perfectionism dimension.

Given the paucity of research evaluating multivariate models explaining eating disorder symptoms, and mixed findings on the three-factor model, this study aimed to test whether the model could predict binge eating and purging cross-sectionally and prospectively across psychotherapy among women with eating disorder diagnoses who had binge eating and/or purging symptoms. We focused on a transdiagnostic population, rather than a BN group, for several reasons. First, there is a high prevalence of bulimic behaviours transdiagnostically (Byrne et al., 2011; Fairburn et al., 2009), all three factors are implicated in a transdiagnostic maintenance theory (Fairburn et al., 2003), and recent studies of the model have shifted away from predicting binge-purge behaviours in tandem (e.g., Vohs et al., 2001) to predicting binge-purge behaviours separately, with differential findings (e.g., Bardone-Cone et al., 2006, 2008). It was hypothesized that the three-way interaction of high weight/shape concern, low self-esteem, and high adaptive perfectionism would predict bulimic symptomatology cross-sectionally, and prospectively over treatment, specifically residual change from baseline to treatment exit. Residual change refers to the drift in score between the actual outcome score and the predicted score on the basis of the initial score on the outcome variable. There is evidence that the three-factor confluence predicts onset of and exacerbation of existing symptoms over time. Hypothetically, this baseline "toxicity" may moderate psychotherapy change, such that those with the confluence will improve less than those without, translating to higher severity of binge eating and purging at the end of treatment.

Method

Participants

Participants ($n = 353$) were from datasets of consecutive patients referred to two specialist eating disorder services in Western Australia (WA) and South Australia (SA).

WA participants were 272 individuals (16+ years) with a Diagnostic and Statistical Manual of Mental Disorders (*DSM-IV*; American Psychiatric Association, 2000) eating disorder (except binge eating disorder) referred to the Eating Disorders Program at the Centre for Clinical Interventions (CCI), the only statewide, public specialist service in WA. Participants were recruited between March 2005 and April 2010. The service is outpatient-based only, and routinely excludes and refers elsewhere individuals with a clinical state that contraindicates outpatient treatment, specifically, psychosis, schizoaffective disorders, acute suicidality, alcohol and substance abuse, and a BMI (kg/m^2) less than 14. Individuals with binge eating disorder are routinely referred to a specialist outpatient clinic elsewhere in the metropolitan area. The service offers enhanced cognitive-behavioural therapy (CBT-E) following a manualised guide (Fairburn, 2008). The guide allows some flexibility and variability in the number of sessions required to complete each treatment phase. Clinical protocol at CCI specifies (approximately) 20 sessions for individuals with a BMI ≥ 18.5 kg/m^2 and 40 sessions for underweight individuals. Treatment completion was defined as successfully transitioning through all four treatment stages, and dropout as non-mutual premature termination of treatment. The overall sample included some individuals still in treatment.

SA participants were 81 individuals (16+ years) involved in treatment at Flinders University Services for Eating Disorders (FUSED), a specialist outpatient service that is funded through research grants. Participants met criteria for BN or Eating Disorder Not Otherwise Specified (EDNOS) in the form of subthreshold BN. Two modifications to *DSM-IV* BN were adopted to define subthreshold BN. A reduced threshold frequency of *once per week* over a three-month period for binge eating and purging, and loss of control when consuming either *moderate or large* amounts of food (rather than just unusually large amounts of food) were allowed, given these have shown clinical significance (Garfinkel et al., 1995; Wade, 2007). Approximately 85% ($n = 69$) met full BN criteria and 15% ($n = 12$) were classified as EDNOS-BN. Participants were recruited between March 2004 and September 2007 for two randomized controlled trials investigating guided self-help (Steele, Bergin, & Wade, 2011; Steele & Wade, 2008). All SA individuals attended an 8-session program (over 6–8 weeks) of guided self-help, with random assignment within each RCT to one of five interventions: a cognitive-behavioural intervention (Cooper, 2005), a cognitive intervention (Cooper, Todd, & Wells, 2001), a combined version of these two approaches, perfectionism (Antony & Swinson, 1998), and mindfulness (Segal, Williams, & Teasdale, 2002). The latter was not designed to be an active comparison but a non-specific placebo treatment. Treatment completion was defined as attendance at all 8 sessions in one RCT, and ≥ 6 in the other. The programs and patient populations have been described further elsewhere (Byrne et al., 2011; Steele et al., 2011; Steele & Wade, 2008; Watson, Raykos, Street, Fursland, & Nathan, 2011). All WA and SA individuals who completed pre-treatment assessment were included. Written informed consent for use of the data in subsequent research was obtained.

Seventy-one (88%) SA participants provided post-treatment/end-of service or Time 2 (T2) data on their eating disorder