Dimensional measures of personality as a predictor of outcome at 5-year follow-up in women with bulimia nervosa

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1. Introduction

The assessment of personality remains an area of ongoing scientific debate with no consensus regarding an optimal approach to categorical and dimensional models. Personality has been implicated in predicting global functioning and symptomatic expression in bulimia nervosa (BN); however, there is some debate about its impact on outcome (Grilo et al., 2007; Rossiter et al., 1993; Rowe et al., 2008; Wonderlich et al., 1994). Some of this discrepancy can be attributed to the different models (categorical and dimensional), different assessment methods (clinical interviews and self-report), and different measures of personality used with this population.

The current categorical model of personality disorders has several limitations. Personality disorder symptoms in the categorical model are moderately heterogeneous, which result in high rates of co-occurring personality disorder diagnoses (Livesley, 1998). Furthermore, the stability of Axis II diagnoses and the reliability of Axis II assessment instruments are relatively poor (Trull and Durrant, 2005). Historically, the dimensional approach has existed alongside the categorical approach; however, these limitations have encouraged increased research investigating dimensional models of personality as an alternate approach (Goldner et al., 1999; Morey et al., 2007; Pukrop, 2002; Widiger and Simonsen, 2005). One personality traits model that has been frequently examined is Cloninger’s seven-factor model (Cloninger et al., 1993; Cloninger et al., 1994).

The Psychobiological Model of Temperament and Character (TCI) (Cloninger et al., 1993) examines four dimensions of temperament: novelty seeking, harm avoidance, reward dependence, and persistence; and three dimensions of character: self-directedness, cooperativeness, and self-transcendence (Cloninger et al., 1993). Bulimia nervosa is characterised by high harm avoidance, low self-directedness and high novelty seeking (Fassino et al., 2004; Fassino et al., 2002). In a previous study by Bulik and colleagues (1998a,b), self-directedness was a predictor of BN outcome at 1-year follow-up (Bulik et al., 1998a,b). However, this finding was not replicated in a study by Bloks et al. (2004) at 2.5 year follow-up (Bloks et al., 2004). Clarifying the role of self-directedness as a predictor of outcome may have important implications for the treatment of BN. For example, it has been suggested that increasing self-directedness as a pre-treatment intervention may be a useful approach (Anderson et al., 2002).

The Eating Disorder Inventory (EDI) is one of the most widely used self-report questionnaires in eating disorder research. In addition to
the three eating disorder symptom scales (drive-for-thinness, bulimia and body dissatisfaction), the EDI has eight subscales assessing characteristics relevant to eating disorders, including personality (Garner et al., 1983). Elevated EDI subscales have been noted in those eating disorder patients with other comorbid disorders such as affective, anxiety, and personality disorders (Bizeul et al., 2003; Hinrichsen, 2004; Milos et al., 2004; Sunday et al., 1993). Given the EDI was specifically designed to examine personality features and psychological traits in an eating disorder population, it is surprising that few studies have used this as an outcome measure for these themes.

Future editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM) may consider the inclusion of a dimensional classification system as a new way of conceptualizing personality pathology. In relation to this potential change, it would be useful to clarify the link between personality dimensions and their impact on outcome. This article will explore personality predictors of outcome in BN using dimensional measures. The aims of the present study are to determine whether personality dimensions measured at pre-treatment by the TCI, EDI-2, and DSM-III-R personality symptoms among women with BN predicted the following at 5 years: (1) eating disorder outcome (past year) (2) mood disorder episode (past year) (3) global functioning. This is an exploratory study to investigate the extent to which personality dimensions might predict long-term outcome of BN and as such we did not have specific a priori hypotheses.

2. Method

2.1. Overview

Women with BN were recruited for a randomised clinical trial with long-term follow-up. The trial evaluated the additive efficacy of exposure based versus non-exposure based behavioral treatments to a core of cognitive behavior therapy.

Participants were outpatients recruited over a three-year period using broad-based methods such as, advertisements at local universities and polytechnic institutes, local media, and direct mailings to health care professional (Bulik et al., 1998b). All participants received eight sessions of cognitive therapy before being randomised to a further eight sessions of one of three forms of behavioral therapy: a) exposure to pre-binge cues with bingeing being prevented, b) exposure to pre-purge cues with purging being prevented, or c) relaxation training. Further details of the study design and outcome, and 3-year follow-up data have been presented elsewhere (Bulik et al., 1998b; Carter et al., 2003).

2.2. Participants

Participants were 134 women, aged 17 to 45 years, with a current DSM-III-R diagnosis of BN. Of the 135 participants entering the study, one was excluded from these analyses as Axis II data were missing. Exclusion criteria were current anorexia nervosa (AN), current obesity (BMI >30), current severe major depression, current psychoactive substance use disorder (PSUD), bipolar I disorder, schizophrenia, current severe medical illness or severe medical complications of BN, and current use of psychoactive medications. This study follows on from the Bulik et al. (1998a) report paper examining predictors of 1-year outcome in BN by using the same dataset at 5-year follow-up.

2.3. Procedure

This study received ethical approval from the Southern Regional Health Authority (Canterbury) and the University of Canterbury Ethics Committee. Participants provided written informed consent.

2.4. Pre-treatment assessment

Current and lifetime psychiatric disorders and personality disorders were assessed using the Structured Clinical Interview for DSM-III-R Patient version (SCID-I) and Personality Disorders version (SCID-II, Spitzer et al., 1990). These assessments were done by non-treating psychiatrists and psychologists. The treating clinician completed the Global Assessment of Functioning scale (GAF, APA, 1987). The GAF is a measure of current global functioning. Participants completed self-report questionnaires including the Eating Disorder Inventory-2 (EDI-2, Garner, 1991) and the Temperament and Character Inventory (TCI, Cloninger et al., 1993). The eight subscales of the EDI-2 are: ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, maturity fears, asceticism, impulse regulation and social insecurity (Garner et al., 1983). Internal consistencies of EDI-2 subscales range from 0.62 to 0.92 (Schaef et al., 1998) and TCI subscales range from 0.76 to 0.89 (Cloninger et al., 1993). Data were available for 134 participants at pre-treatment.

2.5. Follow-up assessment

Participants were reassessed at 5-year follow-up for current and past year variables. Past year diagnoses at the 5-year assessment provided a more conservative and parsimonious evaluation of outcome, capturing both current (past month) and recent functioning. Our primary outcome was the presence of any eating disorder diagnosis at 5 years. For someone to be classified as ‘no diagnosis’ during the past year at follow-up, the person must have been free of regular (twice weekly for at least 3 months) binge eating and purging behaviors during the preceding 12-month period.

Follow-up assessment consisted of a diagnostic re-evaluation of any eating disorder diagnosis (full-criteria AN, full-criteria BN, eating disorder not otherwise specified [EDNOS]), and a mood disorder episode in the past year and GAF scores. Data were available for 109 (81%) participants at 5-year follow-up.

2.6. Statistical analyses

The Statistical Package for the Social Sciences (SPSS, Version 12) was used for all statistical analyses. The 5-year outcome variables were 1) any eating disorder diagnosis, 2) any mood diagnosis and 3) global functioning (GAF scores). Potential predictors of these outcomes were pre-treatment TCI subscales, EDI-2 personality subscales, and SCID-II personality disorder symptoms. The presence of any eating disorder was chosen as the key eating disorder outcome at 5 years for parsimony in the number of analyses and tables, and to capture significant but subthreshold eating symptoms that would be missed if only BN diagnosis were reported. SCID-II personality disorder symptoms were examined in two ways: First, we used symptom sums for each of the four most common personality disorder diagnoses in this sample: avoidant, borderline, obsessive compulsive and paranoid personality disorder. Second, we used the sum of Clusters A, B, and C symptoms to be consistent with previous literature. Logistic regressions were used to determine the univariate and multivariate independent associations of the predictor variables (TCI subscales, EDI-2 subscales, Axis II personality symptoms, and a lifetime mood disorder), and the two binary outcome variables (diagnosis of any eating disorder and a mood disorder episode in the past year at 5-year follow-up). An additional logistic regression was conducted to establish whether post-treatment levels of self-directedness were a better predictor of any eating disorder at 5-year follow-up. Univariate predictors (TCI subscales, EDI-2 subscales, Axis II personality symptoms) of the 5-year measure of global functioning (GAF) were assessed using Pearson’s correlation coefficients. Significant results identified in these analyses were further analysed using a multiple linear regression. Statistical significance was determined at the two-tailed p < 0.05 level.

3. Results

3.1. Characteristics at pre-treatment

The mean age of the sample was 26.1 years (SD = 6.1), and 91% were New Zealand European. The mean age-of-onset for BN was 19.5 years and 23% of the sample had a previous history of full-criteria AN. Binge eating and purging frequency for the sample had a mean of 10.6 and 14.3 episodes respectively, at pre-treatment. Diagnosis of an Axis II disorder was present in 56% of the sample (n = 75). A lifetime mood disorder was present in 64% of the sample. Descriptive statistics for current mood disorder episodes and the GAF are presented in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Pre-treatment and 5-year follow-up descriptive statistics of outcome variables.</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Any ED</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment (current)</td>
<td>134</td>
<td>100</td>
</tr>
<tr>
<td>5-year follow-up (past year)</td>
<td>38</td>
<td>27</td>
</tr>
<tr>
<td>Any mood disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment (current)</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>5-year follow-up (past year)</td>
<td>48</td>
<td>34</td>
</tr>
<tr>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td><strong>GAF</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment (current)</td>
<td>55.6</td>
<td>6.7</td>
</tr>
<tr>
<td>5-year follow-up (current)</td>
<td>70.7</td>
<td>13.7</td>
</tr>
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