BODY IMAGE, BODY DYSPHORIA, AND DIETARY RESTRAINT: FACTOR STRUCTURE IN NONCLINICAL SUBJECTS

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Summary—The principal aim of this study was to examine the factor structure of several assessment methods used to measure dietary restraint, body dissatisfaction, and body image. Factor analysis was employed to identify and confirm the primary constructs measured by these assessment methods. A total of 206 undergraduate women were recruited as subjects. This sample was divided into two subsets of 100 and 106 subjects. On the first subset, principal components analysis identified three factors: body dysphoria, dietary restraint, and body image. With the second subset of subjects, confirmatory factor analysis cross-validated this factor structure. A two factor solution, body dysphoria and dietary restraint, was identified and confirmed when the body image measure was converted to a self-minus-ideal discrepancy score. These findings are discussed in relation to the definition of control groups to be used in studies of anorexia and bulimia nervosa. Guidelines for the selection of measures for each of the three factors also are presented.

INTRODUCTION

Recent theories of anorexia and bulimia nervosa have emphasized three causal variables: body dysphoria, body image disturbances, and dietary restraint (Attie & Brooks-Gunn, 1989; Rosen, 1992; Thompson, 1992; Williamson, 1990). Investigations of samples of nonclinical young women have found a “normative discontent” with body size and high rates of dieting (Cash, Winstead & Janda, 1986; Rodin, Silberstein & Striegel-Moore, 1985). Many young women express concerns about dieting and body size/appearance which are comparable to the level of concern expressed by women diagnosed with anorexia and bulimia nervosa (Polivy & Herman, 1985; Silberstein, Striegel-Moore & Rodin, 1987; Thompson, 1992).

Two recent studies of the psychopathology of bulimia nervosa have supported the idea that bulimia is a complex, multifactorial syndrome (Gleaves, Williamson & Barker, 1993; Tobin, Johnson, Steinberg, Staats & Dennis, 1991). Both of these factor analytic studies found three independent factors which described the syndrome of bulimia nervosa: (a) affective and personality disturbances, (b) bulimic behaviors, and (c) dietary restraint. Gleaves et al. (1993) identified a fourth factor, body dissatisfaction. This research suggests that it may be possible to isolate psychopathological features of anorexia and bulimia nervosa that are unique to these syndromes and those that are unique to each disorder.

In recent years, an increasing number of studies have attempted to identify such factors by the inclusion of control groups without an eating disorder, but which have elevated scores on measures of dietary restraint (e.g. Counts & Adams, 1985; Lindholm & Wilson, 1988; Laeslze, Tuschel, Waadt & Pirke, 1989) or weight preoccupation (Garner, Olmsted, Polivy & Garfinkel, 1984). Nonclinical samples of women with a disturbed body image have also been used in treatment studies (e.g. Rosen, Saltzberg & Srebnik, 1989). These studies have typically included an eating disorder group, a symptomatic group (e.g. high dietary restraint), and a non-eating disorder/non-symptomatic group. Dependent variables have ranged from measurement of body size estimation (Lindholm & Wilson, 1988) to a level of depression (Laeslze et al., 1989).

There is merit in the use of this research paradigm. Using this basic strategy may make it possible to ‘map out’ the probable determining variables of the many psychopathological features of
anorexia and bulimia nervosa. There is, however, one significant problem that will impair the progress of this research. At present, there is little empirical basis for defining the symptomatic control group. Across investigations, researchers have arbitrarily selected an assessment method and have defined high scores on this measure as indicative of dietary restraint, weight preoccupation, etc. Given the lack of information on the relationship between common measures of eating disorder habits and attitudes in nonclinical samples, it is impossible to compare results across different studies, which define the symptomatic group using different assessment methods.

This study was designed to address this deficiency and to provide empirical guidance in the selection of methods for defining symptomatic groups from nonclinical samples. The investigation involved administering a variety of eating disorder assessment methods to 206 undergraduate women. These assessment procedures were selected because they had been validated as measures of dietary restraint, body image, body dissatisfaction, and weight preoccupation. The sample was divided so that the first 100 subjects composed the initial sample. With this initial sample, principal components analysis was used to define the factor structure of the assessment procedures. The second sample of 106 Ss was used for cross-validation of the structure. Confirmatory maximum-likelihood factor analysis was used for the cross-validation. Within each sample, two factor analyses were calculated. The primary difference between the two factor analyses was that in one, the Body Image Assessment (BIA; Williamson, Davis, Bennett, Goreczny & Gleaves, 1989) discrepancy score was used and in the other the current body size and ideal body size scores of the BIA were used.* Inclusion of all three measures from the BIA was prohibited due to the mathematical linkage among the three variables (Williamson, Davis, Bennett, Goreczny & Gleaves, 1989).

**METHOD**

**Subjects**

A total of 216 Ss were screened for participation in the study. Subjects diagnosed with an eating disorder were excluded from the study because the purpose of the investigation was to evaluate the factor structure of eating disorder measures in nonclinical subjects. Ten Ss were excluded for this reason. The remaining 206 Ss were separated into two samples. The first sample was formed by collecting data on the first 100 Ss; the second group of 106 Ss formed the second sample. All Ss were female undergraduate students recruited from psychology classes at a large state university, and all received extra credit for participation.

**Procedure**

After obtaining informed consent, all Ss were interviewed to rule out the presence of an eating disorder using the Interview for Diagnosis of Eating Disorders (IDED; Williamson, 1990). The IDED has been established as a reliable and valid interview procedure for a diagnosis of anorexia nervosa or bulimia nervosa using the criteria from the third revised edition of the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-III-R; American Psychiatric Association, 1987). Data from Ss who met DSM-III-R diagnostic criteria for a past or current eating disorder were excluded from the analyses. Subjects who were found to have current eating disorders were informed of their diagnosis and offered treatment at the university psychology clinic. The height and weight of each S were measured, and Ss then completed the self-report measures described below. These measures were chosen as variables because they have been described in the literature as measuring body dissatisfaction, dietary restraint, weight preoccupation, or body image.

**Eating Attitudes Test** (EAT; Garner & Garfinkel, 1979). The EAT is a 40-item self-rating scale measuring symptoms of anorexia nervosa. Test-retest reliability of the EAT has been reported to be 0.79 for a clinical sample and 0.94 for a sample of anorexics and normal Ss. Factor analysis

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*Previous research (Williamson et al., 1993) has found that the current body size, ideal body size, and the discrepancy scores of the BIA each measure different constructs. The discrepancy score, which is calculated by subtracting ideal body size from current body size, has been found to be a measure of body dissatisfaction. Since body dissatisfaction was a construct we intended to investigate, we felt inclusion of the discrepancy score was necessary. It was unclear as to whether current and ideal body size measures would also load on a body dissatisfaction factor. Therefore, we elected to test this potential outcome by inclusion of these two variables in a second factor analysis.
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