Eating Disorder Symptomatology and Gender Role Orientation

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ABSTRACT
Objective: The aim of the current study was to investigate associations between gender role orientation and eating pathology in a sample of females with eating disorders (ED).

Methods: Sixty-eight women with anorexia nervosa and 123 women with bulimia nervosa completed the Bem Sex Role Inventory (BSRI), the Eating Disorders Inventory, and the Sexual Anxiety subscale of the Anorexia Nervosa Inventory for Self-Rating.

Results: All three subscales of the BSRI—femininity, masculinity, and social desirability—correlated negatively with self-reported ED behavior and attitudes. Individuals with high levels of androgyny (i.e., those scoring high on femininity and masculinity) reported lower levels of ED symptomatology compared with undifferentiated individuals (i.e., those scoring low on femininity and masculinity), who showed higher levels of ED symptoms.

Discussion: Femininity and masculinity, although independent traits, should not be considered isolated from each other in the context of ED. In females with ED, androgyny appears to be associated with lower levels of ED symptoms. Self-esteem may play a mediating role in this association. © 2005 by Wiley Periodicals, Inc.

Keywords: eating disorders; gender role; EDI; Bem Sex Role Inventory

Introduction

Women are more likely to develop eating disorders (ED) than men, and female gender is generally considered an important risk factor for ED. Unlike biologic gender, gender role is a social construct of the cultural stereotype of what is regarded as typical masculine or feminine behavior, attitudes, interests, and personality characteristics. Gender role orientation is an individual’s position in this framework of masculine and feminine dimensions. In this context, masculinity and femininity are not necessarily defined as bipolar ends of a continuum, but can be conceptualized as two independent dimensions. Thus, an individual can integrate both masculine and feminine traits in his or her gender role orientation. According to Bem (1977), persons can be classified as masculine if they have high levels of masculinity and low levels of femininity, and as feminine if they have high levels of femininity and low levels of masculinity. Persons scoring high on both dimensions are classified as androgynous, and low–low scorers as undifferentiated.

It seems plausible that adherence to gender roles, and competing and often contradictory gender role expectations, may play a role in the development of ED in women. In young people, gender role orientation represents an important factor for intrapersonal development and interpersonal relationships. Gender role is related to general self-perception, self-esteem, body image, and body satisfaction, which are psychological aspects central to ED syndromes (Jackson, Sullivan, & Rostker, 1988; Lewis & Johnson, 1985). In addition, weight reduction can be interpreted as a way of suppressing secondary sexual characteristics and menstruation, reducing libido, and thus rejecting female role expectations (Hepp & Milos, 2002). Despite these plausible links, gender role orientation is an aspect often disregarded in the treatment of ED patients. A better understanding of the impact of gender role in the development and maintenance of disordered eating behavior could contribute to improving the treatment of ED.

However, the literature on gender role orientation and ED does not provide conclusive results. A meta-
analytic review showed that eating-disordered persons scored higher on femininity and lower on masculinity than persons without ED (Murnen & Smolak, 1997). However, the relationship between gender role orientation and disturbed eating behavior was small and the studies reviewed were heterogeneous in terms of diagnostic criteria and inclusion of clinical and nonclinical populations. Sitnick and Katz (1984) found anorectic women to be “hyperfeminine,” that is, they endorsed fewer masculine traits than controls. Others found similar results for bulimic women (Cantelon, Leichner, & Harper, 1986; Steiger, Fraenkel, & Leichner, 1989). In a recent study, female patients with ED described themselves more often as feminine, whereas control subjects were more often androgynous (i.e., they scored high on masculinity and femininity) or undifferentiated (i.e., they scored low on masculinity and femininity; Behar, de la Barrera, & Michelotti, 2001).

Regarding nonclinical populations, research on associations between ED and gender role orientation also provides an inconsistent picture. Cantrell and Ellis (1991) reported higher levels of ED symptoms in masculine-typed women, whereas Johnson, Brems, and Fischer (1996) found masculinity to be negatively related to disturbed eating behavior. Meyer, Blisscott, and Oldfield (2001) reported a positive association between femininity and disturbed eating behavior only for homosexual males and females but not for heterosexuals.

A comprehensive interpretation of the results on gender role orientation and ED remains difficult because of methodologic differences among studies. Many studies rely on nonclinical samples, mainly college students, whereas clinical studies generally rely on small samples. Some researchers examine associations between ED symptomatology and scales measuring masculinity and femininity whereas others investigate differences among groups varying in gender role orientation (i.e., masculine, feminine, androgynous, undifferentiated). To our knowledge, no previous research in the field of ED exists that systematically utilizes and compares both these approaches to gauging gender role orientation. The goal of the current study was to investigate the relationship between gender role orientation and ED behavior and attitudes in a large sample of persons with ED (anorexia nervosa [AN] or bulimia nervosa [BN]). On the one hand, we examined associations between ED symptomatology and femininity and masculinity subscales, and, conversely, the other differences of ED symptomatology between groups with the four gender role orientation categories suggested by Bem (1977).

### Methods

#### Participants

The participants were enrolled between March 1997 and March 1999. Participants had to meet the following study inclusion criteria: a diagnosis of current ED as described in the 4th ed. of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994); a minimum age of 17 years; and the ability to speak German with adequate fluency. All participants received detailed information about the procedures and aims of the study, and written informed consent was obtained. In total, 300 eating-disordered persons were evaluated. Sixty-seven inpatients and 66 outpatients were consecutively recruited from the Department of Psychiatry, University Hospital (Zurich, Switzerland) and 31 participants were recruited via contacts with ED self-help groups in the Zurich area. An additional group of 136 participants with a clinical diagnosis of ED were enrolled via advertisements in local newspapers, to which a total of 280 persons responded.

Male participants (n = 12) and female participants older than 50 years (n = 11) were excluded to homogenize the sample and allow comparisons with the general ED literature. A further 41 participants with a diagnosis of an eating disorder not otherwise specified (EDNOS) and 12 participants with BN of the nonpurging type were excluded from analyses, because of the heterogeneity of these diagnostic categories. Thirty-three participants were also excluded from the analyses because they did not return or did not fully complete the Bem Sex Role Inventory (BSRI), the Eating Disorders Inventory (EDI), and the Sexual Anxiety subscale of the Anorexia Nervosa Inventory for Self-Rating (ANIS), yielding a total sample of 191 participants. Thirty-three participants had AN of the restricting type, 35 had AN of the purging type, and 123 had BN of the binge-purging type (BNbp). The sixty-eight AN participants had a mean body mass index (BMI) of 15.2 (SD = 1.5) and the BNbp group a mean BMI of 21.2 (SD = 3.1). AN participants were significantly younger (M = 25.8, SD = 6.2) than the BNbp participants (M = 28.3, SD = 7.5; Mann–Whitney U test [MWU] Z = 1.97, p < .05). The average age of ED onset (as remembered by participants) was 17.2 years (SD = 3.7) and did not vary among ED subtypes. Thus, the average ED duration of AN (M = 8.3, SD = 6.7) was shorter than that of BNbp (M = 11.0, SD = 7.6). Thirty-four percent of participants were in full-time employment, 31% in part-time employment, and 35% reported to have no paid employment.

In the current study, 185 (97.9%) participants were heterosexual, 2 participants were bisexual, and 1 person was homosexual. Three participants provided no information regarding their sexual orientation.

#### Measures and Procedure

The data presented in the current study were collected during the baseline phase of a mixed retrospective-
prospective survey examining the course of ED. ED were diagnosed by the German version of the Structured Clinical Interview for Axes I and II of the DSM-IV (Wittchen, Zaudig, & Frydrich, 1997), conducted by four psychologists (the interrater reliability was .8) who never met with the participants outside the interviews for the study. The participants completed the BSRI (Bem, 1974), the EDI (Garner, Olmsted, & Polivy, 1983), and the Sexual Anxiety subscale of the ANIS (Fichter & Keese, 1980) as part of a comprehensive questionnaire package.

The BSRI was developed in 1974 to measure gender role orientation. Masculinity and femininity are treated as independent dimensions and not as bipolar ends of a continuum. The BSRI is a self-rating questionnaire comprising 60 items, each of which is rated on a 7-point scale. There are three subscales (masculinity, femininity, and social desirability). The items consist of personality characteristics and are qualified as masculine if they are believed to be more desirable for a man than for a woman, and as feminine if they are believed to be more desirable for a woman than for a man. The social desirability subscale is neutral with respect to gender and serves primarily to provide a neutral context for the masculinity and femininity subscales. The internal consistency (coefficient alpha) is .86 for masculinity, .80 for femininity, and .75 for social desirability. Test-retest reliability for all three subscales is high (masculinity \( r = .90 \), femininity \( r = .90 \), social desirability \( r = .89 \); Bem, 1974). We used the German version of the BSRI. Reliability for the German version is comparable with the original BSRI (Schneider-Düker & Kohler, 1988).

The EDI is a widely used 64-item, self-report measure of symptoms commonly associated with ED. It provides standardized subscale scores on eight dimensions that are clinically relevant to ED. The first three dimensions deal with attitudes and behaviors concerning eating, weight and body shape, namely, Drive for Thinness (DT), Bulimia (B), and Body Dissatisfaction (BD). The remaining five dimensions tap more general psychological and relational constructs relevant to ED, namely, Ineffectiveness (I), Perfectionism (P), Interpersonal Distrust (ID), Interoceptive Awareness (IA), and Maturity Fears (MF). Internal consistency (coefficient alpha) for the eight subscales ranges from .65 for MF to .91 for BD (Garner et al., 1983).

The ANIS is a 31-item, self-rating instrument consisting of six interpretable factors measuring AN symptoms. We used the Sexual Anxiety subscale, which consists of three items that are rated on a 6-point scale (0 = never true; 5 = almost always true). The Cronbach alpha of this subscale is .85 (Fichter & Keese, 1980).

The study was approved by the Research Ethics Commission of the University Hospital of Zurich.

**Statistical Analyses**

Statistical analyses were performed using SPSS for Windows, release 10.0.0 (2000). As several of the ED symptom-related scales had marked skews, all tests involving these scales were nonparametric: Spearman’s rho coefficients were calculated as measures of associations, group differences were examined by MWU tests and, in cases with more than two groups, by means of Kruskal–Wallis tests (KW) followed by MWU post-hoc tests. When testing for group differences in other, normally distributed, variables, analyses of variance (ANOVA) with Bonferroni-adjusted post-hoc tests were used. Chi-square tests were employed when testing distributions of nominal variables. Due to the exploratory character of the current study, all significance tests were two tailed. To reduce the risk of Type 1 errors, a minimum significance level of .01 was assumed when examining correlations and MWU post-hoc comparisons.

### Results

Comparisons of the two ED types regarding the EDI subscales showed significant differences in the B (MWU \( Z = 6.0, p < .001 \)) and MF subscales (MWU \( Z = 2.87, p < .01 \)). BNP participants had significantly higher B (\( M = 9.9, SD = 5.3 \)) and significantly lower MF (\( M = 4.2, SD = 4.3 \)) scores than AN participants (\( M = 4.7, SD = 5.6; M = 6.6, SD = 5.6; \) respectively). There were no differences in any of the other EDI subscales. AN participants also scored significantly higher on Sexual Anxiety (\( M = 6.1, SD = 4.3 \)) than BNP participants (\( M = 4.7, SD = 3.6; MWU Z = 2.2, p < .05 \)). There were no differences between the ED types on any of the BSRI subscales.

Table 1 shows the associations between the BSRI subscales and the eating disorder symptom-related scales. All significant coefficients were negative, showing that higher symptomatology was associated with lower masculinity and femininity scores.

<table>
<thead>
<tr>
<th>BSRI Scales</th>
<th>Masculinity</th>
<th>Femininity</th>
<th>Social Desirability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive for Thinness</td>
<td>(-.21^*)</td>
<td>(-.08)</td>
<td>(-.20^*)</td>
</tr>
<tr>
<td>Bulimia</td>
<td>(-.12)</td>
<td>(-.13)</td>
<td>(-.30^{**})</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>(-.25^{**})</td>
<td>(-.09)</td>
<td>(-.20^*)</td>
</tr>
<tr>
<td>Ineffectiveness</td>
<td>(-.52^{**})</td>
<td>(-.32^{**})</td>
<td>(-.52^{**})</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>(.18)</td>
<td>(.00)</td>
<td>(.08)</td>
</tr>
<tr>
<td>Interpersonal Distrust</td>
<td>(-.29^{**})</td>
<td>(-.28^{**})</td>
<td>(-.26^{**})</td>
</tr>
<tr>
<td>Interoceptive Awareness</td>
<td>(-.15)</td>
<td>(-.12)</td>
<td>(-.34^{**})</td>
</tr>
<tr>
<td>Maturity Fears</td>
<td>(-.25^{*})</td>
<td>(.00)</td>
<td>(-.22^*)</td>
</tr>
<tr>
<td>ANIS Sexual Anxiety</td>
<td>(-.34^{**})</td>
<td>(-.28^{**})</td>
<td>(-.38^{**})</td>
</tr>
</tbody>
</table>

Note: BSRI = Bem Sex Role Inventory; EDI = Eating Disorders Inventory; ANIS = Anorexia Nervosa Inventory for Self-Rating.

\(*p > .01, **p < .001.\)
scores on the BSRI subscales were associated with lower levels of ED-related symptoms. Low masculinity was significantly correlated with the subscales DT, BD, I, ID, MF, and Sexual Anxiety. Femininity showed associations with considerably fewer subscales. Low femininity was associated with the subscales I, ID, and Sexual Anxiety. High levels of social desirability were correlated with low levels of ED-related symptoms of all subscales with the exception of the EDI P subscale.

To examine how different types of gender role orientation were related to ED symptoms, we classified participants into four types as suggested by Bem (1977): masculine, feminine, undifferentiated, and androgynous. We grouped participants as high or low on masculinity and femininity, each based on the sample medians. The medians were 4.1 and 4.75 for masculinity and femininity, respectively. Participants were classified as masculine ($N = 41 \ [21.5\%]$) if they scored high on masculinity and low on femininity. Persons who scored high on femininity and low on masculinity were classified as feminine ($N = 43 \ [22.5\%]$). Undifferentiated persons ($N = 52 \ [27.2\%]$) scored low on both masculinity and femininity, and androgyous persons ($N = 55 \ [28.8\%]$) scored high on both. An ANOVA showed that the four categories were significantly different with regard to social desirability scores, $F(3,187) = 22.2, p < .001$. Post-hoc tests showed that undifferentiated persons ($M = 4.7, SD = .5$) were significantly lower in social desirability than all other categories (masculine: $M = 5.2, SD = .5$; feminine: $M = 5.1, SD = .5$; androgynous: $M = 5.4, SD = .5$; $p < .001$ for all comparisons), and that masculine and feminine persons scored lower than androgyous persons (both tests, $p < .05$). Analyses furthermore showed that the four categories were significantly different with regard to age of ED onset ($KW \chi^2 = 9.9, df = 3, p < .05$). Specifically, undifferentiated participants were significantly younger ($M = 16.5, SD = 3.8$) than feminine participants ($M = 18.4, SD = 3.6$) at ED onset (post-hoc MWU $Z = 3.1, p < .01$). The four categories did not differ with regard to current age or the distribution of ED type.

The four BSRI categories were examined for differences in the EDI subscales and the ANIS Sexual Anxiety subscale (see Table 2). The results showed that undifferentiated persons scored significantly higher than androgyous persons on the BD, I, ID, and Sexual Anxiety subscales. Furthermore, undifferentiated participants scored significantly higher on the I and lower on the P subscales than masculine participants. Feminine persons scored significantly higher than androgyous persons on the BD, I, and ID subscales. These differences are further illustrated in Figure 1.

### TABLE 2. Comparison of the four BSRI categories in the eating disorder symptoms scales (EDI, ANIS Sexual Anxiety) ($N = 191$)

<table>
<thead>
<tr>
<th></th>
<th>Kruskal–Wallis</th>
<th>Post-Hoc Mann–Whitneya</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EDI</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive for Thinness</td>
<td>8.9, df = 3</td>
<td>$p &gt; .05$</td>
</tr>
<tr>
<td>Bulimia</td>
<td>3.3, n.s.</td>
<td></td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>14.5, $p &lt; .002$</td>
<td>$u &gt; a, f &gt; a$</td>
</tr>
<tr>
<td>Ineffectiveness</td>
<td>39.8, $p &lt; .001$</td>
<td>$u &gt; m, u &gt; a, f &gt; a$</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>9.2, $p &lt; .002$</td>
<td>$u &lt; m$</td>
</tr>
<tr>
<td>Interpersonal Distrust</td>
<td>18.4, $p &lt; .001$</td>
<td>$u &gt; a, f &gt; a$</td>
</tr>
<tr>
<td>Interoceptal Awareness</td>
<td>5.3, n.s.</td>
<td></td>
</tr>
<tr>
<td>Maturity Fears</td>
<td>11.1, $p &lt; .01$</td>
<td>No effects</td>
</tr>
<tr>
<td><strong>ANIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Anxiety</td>
<td>21.8, $p &lt; .001$</td>
<td>$u &gt; a$</td>
</tr>
</tbody>
</table>

Note: $u =$ undifferentiated; $a =$ androgyous; $f =$ feminine; $m =$ masculine; EDI = Eating Disorders Inventory; ANIS = Anorexia Nervosa Inventory for Self-Rating.

*For the Mann–Whitney $U$ post-hoc tests. Only differences with a probability smaller than .01 are noted.

### Discussion

The current study investigated the relationship between gender role orientation and ED behavior and attitudes in a large sample of persons with ED. Associations between ED symptomatology and femininity and masculinity subscales, as well as differences of ED symptomatology between groups with the four gender role orientation categories suggested by Bem, were examined.

When examining associations between scales, our findings indicated an overall negative relationship between both BSRI gender role subscales (masculinity and femininity) and eating symptomatology as measured by the EDI. The three EDI subscales measuring attitudes and behaviors explicitly relating to eating, weight, and body shape (DT, B, BD) were not associated with femininity. Among the EDI subscales relating to more general psychological correlates of ED, the I and ID subscales, as well as the Sexual Anxiety subscale of the ANIS, were negatively related to femininity. This is a noteworthy finding as femininity did not correlate with the core symptomatology of ED, but was associated with lower levels of unspecific psychopathological symptoms related to ED. Thus, our results do not support the view that femininity is a risk factor for the development of disordered eating (Murnen & Smolak, 1997). Regarding masculinity, our findings were in accordance with research showing that higher masculinity is associated with
FIGURE 1. Distribution of Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, and Sexual Anxiety in the four BSRI categories (N = 191). Sex role categories based on sample median split.
lower levels of ED symptoms (Lancelot & Kaslow, 1994; Murnen & Smolak, 1997). Although results reported in the literature for nonclinical populations are rather contradictory (Cantrell & Ellis, 1991; Johnson et al., 1996), they provide some indication that in normal populations, too, femininity is not necessarily associated with increased levels of eating behavior problems (Meyer et al., 2001).

When participants were classified into the four gender role types suggested by Bem (1977)—masculine, feminine, undifferentiated, and androgynous—we found a general pattern showing that undifferentiated participants tended to have higher levels and androgynous persons tended to have lower levels of ED symptomatology. A possible explanation for the finding that androgyny was associated with lower levels of self-reported symptoms might be that individuals who integrate masculinity and femininity have a broader range of behavioral options, whereas strongly gender-typed individuals are limited in their responses, because they suppress any behavior that might be undesirable or inconsistent with an internalized gender role standard (Bem, 1977). Conversely, undifferentiated individuals, lacking clear gender role identification, appear most at risk of developing ED-related psychopathological symptoms, possibly due to a narrow range of coping strategies. The observed patterns are consistent with findings by Behar et al. (2001) who reported that a control group without eating disorders contained more androgynous women than an ED group.

Taking into account the results both on associations between scales and on group differences between gender role categories, the study allows the following conclusions. When considered independently of each other, masculine traits appear to have a stronger protective effect in the context of disordered eating than feminine traits. When both gender dimensions are considered together, the combination of higher levels of both masculinity and femininity had the strongest protective effect. A lack of gender role definition (i.e., low levels in both masculinity and femininity), conversely, appears to be associated with eating problems. The results suggest that although they are independent dimensions, investigating combinations and interplay of masculinity and femininity may yield insights that go beyond the results of examining masculinity and femininity isolated from each other.

When assessing the results of the current study, one ought to take into consideration that the reported associations between gender role orientation and disordered eating may be partly mediated by self-esteem. Correlations between self-esteem and androgyny have been reported previously (Bem, 1977; Lewis & Johnson, 1985). It has been suggested that these associations are due to shared method variance (Brown, 1986) because both, high ratings in androgyny and in self-esteem, are associated with a greater tendency to endorse positive self-descriptions. Self-esteem, as a possible mediating factor, correlates closely with a positive body image (Jackson et al., 1988), which is consistent with an association with lower levels of eating problems. Further support for such a mediating mechanism could be seen in our finding that androgynous individuals scored highest and undifferentiated individuals lowest on social desirability, a subscale that includes gender role unspecific positive self-descriptions. The social desirability subscale was also negatively correlated with all but one of the EDI subscales and the ANIS Sexual Anxiety subscale. These results are in contrast with those of Johnson et al. (1996) who reported that, in a nonclinical sample, social desirability was linked with higher scores on five of the eight EDI subscales. As ED populations are considerably lower in self-esteem than nonclinical populations, it is conceivable that the BSRI social desirability subscale reflects different patterns or constructs, that is, differences in self-esteem in one population and differences in social desirability in the other.

Several limitations ought to be considered. As in most ED research, our sample, too, is biased through the use of different recruitment sources so that it does not represent a random sample of all women with ED. We did not have a nonclinical control group. Our sample included patients in different stages of their ED “career.” It seems plausible that the individual’s gender role orientation changes during the course of the illness, possibly concordant with changes in physical parameters such as body weight. Finally, we could not control for sexual orientation, due to the low percentage of homosexual women in our sample.

Our findings have clinical relevance and implications for future research. Gender role orientation plays an important part in the development and course of ED. Femininity and masculinity, although independent traits, should not be considered isolated from each other in the context of ED. Further research ought to investigate the changes of gender role in the course of ED with special regard to weight development. A better understanding of associations among gender role, eating pathology, self-esteem, and body satisfaction could lead to an improvement in the treatment of ED. Associations between gender role orientation and disordered eating indicate that addressing a patient’s problems...
of gender role orientation may represent a valuable approach in the treatment of ED.

References