Femininity, Masculinity, and Disordered Eating: A Meta-Analytic Review

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Abstract: Objective: To understand the developmental psychopathology of eating disorders, it is crucial to explain the large gender discrepancy in the rates of these disorders, especially anorexia nervosa and bulimia nervosa. In this paper, meta-analysis was used to examine the relationship between gender role adherence and the existence of eating problems. Method: Of the 69 studies examined, 22 contained data deemed valid for the analyses. Measures of difference (d) and homogeneity were calculated. These studies used the Personal Attributes Questionnaire (PAQ) or the Bem Sex Role Inventory (BSRI) to measure gender role adherence. Results: Findings indicated a small, heterogeneous positive relationship between femininity and eating problems and a small, heterogeneous negative relationship between masculinity and eating problems. Studies that used a clinical sample showed a larger discrepancy in masculinity scores between the eating-disordered and the control groups than did studies using surveys to identify eating problems. Six studies measured gender role traditionalism. The eating-disordered groups did not differ significantly on these measures compared to the control groups. Discussion: Despite construct validity problems with the use of the PAQ and the BSRI in this area of study, data suggest that gender role is related to eating problems. Crucial aspects of femininity likely to be related to eating problems need to be operationalized and their link to eating disorders examined. © 1997 by John Wiley & Sons, Inc. Int J Eat Disord 22: 231–242, 1997.

Key words: developmental psychopathology; gender; eating problems

INTRODUCTION

Identification of the influential factors and pathways in the development of eating disorders holds some intriguing questions for proponents of developmental psychopathology models. Among these is the explanation of why women are at substantially greater risk for developing clinical syndromes, their subthreshold variants, and individual components of eating disorders (Striegel-Moore & Marcus, 1995). Women are remarkably more likely to develop eating disorders and their associated symptoms than men are

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(American Psychiatric Association [APA], 1994). For example, men probably represent only about 10% of the cases of bulimia nervosa (BN) and anorexia nervosa (AN; APA, 1994). While the difference is less extreme for binge-eating disorder (BED), dieting, and body dissatisfaction, there is, in all of these, a consistently demonstrable gender difference with women showing more of the behavior or disorder. It appears that the gender differences emerge by middle school and possibly in elementary school (Smolak & Levine, 1994).

Such gender differences have led theorists to attempt to tie gender role adoption to eating disorders. Hilde Bruch (1978), for example, suggested that anorexics might be trying to avoid female adulthood, particularly the reproductive and sexual aspects. Similarly, others have argued that bulimics are trying to reject the feminine, maternal roles ambivalently embraced by their stay-at-home mothers (Silverstein, Perdue, Wolf, & Pizzolo, 1988). The daughters themselves may feel ambivalent as they want to be in committed relationships with men, but fear the constraints such relationships might impose. On the other hand, Boskind-Lodahl (1976) proposed that women suffering from eating disorders were high in passivity, dependence, and need for approval from others. These are characteristics typically associated with higher scores on femininity measures (Morawski, 1992).

Still other theorists (e.g., Steiner-Adair, 1986; Timko, Striegel-Moore, Silberstein, & Rodin, 1987) have suggested that masculine role aspiration is an important factor. Steiner-Adair argued that the discrepancy between ideal and self-perceived masculine characteristics forms a basis for eating problems. More specifically, young women see that society values masculine characteristics and so wish to possess them but fear they do not. They develop eating problems as a way of meeting the social demands for thinness, controlling their own bodies, and coping with the stress of their self-doubts. Thus, theoretical perspectives vary dramatically in postulating relationships between traditionally defined gender roles (i.e., gender roles as measured by the Bem Sex Role Inventory [BSRI; Bem, 1974] or the Personal Attributes Questionnaire [PAQ; Spence & Helmreich, 1978]) and eating disorders, especially AN and BN.

Different theoretical perspectives, of course, routinely lead to different research questions as well as differing choices of measures and samples. However, this area of research is also marked by substantial debate concerning measures. Until the 1970s, gender role adherence was routinely measured using scales which conceptualized masculinity and femininity as polar opposites (sometimes known as M-F scales). Thus, one could be masculine or feminine but not both. The Minnesota Multiphasic Personality Inventory (MMPI) is an example of such a bipolar measure and is the only one of these measures used in recent eating disorders research. It has been widely criticized for its lack of strong psychometric properties (Signorella & Jamison, 1986), for the techniques used to develop the measure, and for its conceptual assumptions about the definition, unidimensionality, and meaning of masculinity and femininity (Constantinople, 1973; Morawski, 1992).

In the 1970s, Bem (1974) introduced the concept of androgyny, that is, possession of both masculine and feminine traits. She, therefore, introduced a scale which conceptualized masculinity and femininity as separate dimensions. A person could score high on one, both, or neither dimensions. Spence and Helmreich (1978) suggested that Bem’s BSRI was too dominated by socially desirable characteristics and so introduced the PAQ.

The MMPI, BSRI, and PAQ all share the goal of measuring an individual’s own personality characteristics. The characteristics in question are related to traditional definitions of masculinity and femininity (Morawski, 1992). The acceptance of traditional gender roles for men and women in general is a different issue. Spence and Helmreich (1978) also
developed a measure of traditionality of gender role beliefs, the Attitudes Towards Women Scale (ATW). There are many other scales available to measure endorsement of traditional roles. It is important to emphasize that the MMPI, BSRI and PAQ, and ATW scales do not share conceptual bases. Hence, these scales will not be considered equivalent in the present research.

Given the differences in theoretical positions and measurement scales, it should not be surprising that there is some inconsistency in the findings concerning the relationship between gender role and eating disorders. What is startling is that the data are so inconsistent that several reviewers have concluded there is no relationship between gender role endorsement (as commonly measured using the BSRI or PAQ) and AN or BN (Lancelot & Kaslow, 1994; Timko et al., 1987). Indeed, they offer new theories as to the possible relationship between gender roles and eating disorders while other authors opt to down-play the importance of gender role and focus instead on other factors (such as personality disorder or family).

Critical literature reviews constitute important first steps in providing an overview of the data in an area. However, their lack of a statistical measure of the strength or consistency of findings can lead to erroneous or exaggerated conclusions. Meta-analysis, however, can provide such statistical information. By examining effect size, including its homogeneity, across studies, meta-analysis provides us with statistical information which can be used to evaluate numerous research findings concerning the relationship between gender role and eating disorders.

Before models of risk factors for AN and BN abandon the idea of an effect of gender role adoption, it is important to statistically evaluate the relationship as documented in a variety of studies. The goal of this paper is to provide a meta-analysis of the existing data on traditional gender role adoption and the development or presence of eating disorders, particularly AN and BN. More specifically, the results of three meta-analyses are reported. An examination of the relationship of femininity to eating disorders was conducted, as well as one on the relationship between masculinity and eating disorders. Although 10 of the studies used the MMPI as an indication of gender role adherence, only studies which used the BSRI or the PAQ or a very similar measure were examined.* A third, smaller analysis examined the relationship between gender role traditionality and eating problems. Given the conclusions of earlier literature reviews (e.g., Lancelot & Kaslow, 1994), it was hypothesized that (a) the effect sizes, \(d\)'s, would show little or no difference on any of the gender role measures between women with eating problems and women without eating problems; and (b) if a measurable \(d\) did emerge for any of the measures, the data would be marked by heterogeneity. Such heterogeneity would suggest that methodological differences among the studies created either bias in some of the studies or unintended interactions between gender role and a third variable which affected eating attitudes or behaviors. For example, the context of the research might affect results in that clinical clients might believe it appropriate to act dependent and unassertive (i.e., feminine) when

*An analysis of data derived from studies using the MMPI was conducted. There were six studies for which data were obtainable (Pyle, Mitchell, & Eckert, 1981; Williamson, Kelley, Davis, Ruggiero, & Blouin, 1985; Scott & Baroffio, 1986; Scott & Thoner, 1986; Rybicki, Lekpowsky, & Arndt, 1989; Pendleton, Tisdale, Moll, & Marler, 1990). The effect size of –.04 was statistically nonsignificant. It should be noted that the measurement of masculinity and femininity using bipolar scales such as the MMPI has been questioned, and the construct validity of the MMPI measurement of masculinity/femininity has been particularly questioned. References to the data used in this analysis can be found in Appendix 3.
replying to surveys whereas college women might see it as socially desirable to provide masculine responses (Worell & Todd, 1996).

METHOD

Studies Considered

Articles which by their title or abstract appeared to consider the relationship between gender roles and eating problems were considered. Eating problems were defined to include measures of AN, BN, and disordered eating attitudes and behaviors (as measured, for example, by the Eating Attitudes Test [EAT]; Garner, Olmstead, Bohr, & Garfinkel, 1982). Studies which only contained measures of body dissatisfaction or dieting were not used. Possible candidates were culled from the bibliography of Lancelot and Kaslow’s (1994) review and from the reference sections of all examined articles. Using the key terms “gender,” “gender role,” “sex role,” “eating,” “eating disorder,” “bulimia,” and “anorexia,” searches of PsychLit, Medline, ERIC, and Dissertation Abstracts were conducted. In addition, the tables of contents of all issues of the International Journal of Eating Disorders were examined. Finally, a few personal contacts were made to check work in progress or unreported gender data.

A total of 61 published papers and 7 dissertations were considered for inclusion in the meta-analysis. Of the published papers, 13 contained no data and 18 were data based but did not include measures of gender role adoption. Thus, 49% of the published studies which initially appeared to be relevant did not actually contain applicable data. In addition, two of the studies used children as subjects and three did not provide data which could be used in the statistical calculations. This left 26 studies (41%) which contained usable data that examined the link between gender role and eating problems. Seven of these studies are unpublished dissertations.

However, 10 of the studies used the MMPI to assess masculinity and femininity. We decided, therefore, to focus on the BSRI and PAQ studies.† Thus, the core of the meta-analysis is based on 16 published studies and 7 unpublished dissertations.

Calculation Methods

The studies included in the analyses used the BSRI or the PAQ as the measure of gender role adherence, with the exception of one study that used an Australian scale patterned after the BSRI (VanStrien & Bergers, 1988), and two studies that used measures that were described as having almost identical face and construct validity of either the BSRI or the PAQ. Most of the studies compared gender role adherence in an eating-disordered group to a nondisordered group. In some studies, the determination of whether a group was disordered represented a clinical diagnosis, but in others it was based on response to a scale measuring eating disorders, such as the Eating Disorders Inventory (EDI; Garner, Garfinkel, & Polivy, 1983) or the EAT (Garner et al., 1982). The data did not permit us to distinguish AN from BN. For example, in the studies investigating the relationship be-

†Data from four additional dissertations that could not be obtained through interlibrary loan look relevant for analyses. An attempt has been made to contact the authors of these dissertations.
between femininity and eating problems, only five studies included clinically diagnosed BN clients and only four included women diagnosed with AN. Table 1 reports the measures and sample characteristics of each study.

The effect size \( (d) \) is expressed in standard deviation units and indicates how different the eating disorder group’s mean is from the control group’s mean. In this meta-analysis, \( d \) for each study was most often computed by using means and standard deviations, except when the eating disorders measurement was continuous in which case \( d \) was computed from the correlation between the eating disorder score and the gender role inventory. In calculating the overall \( d \), each individual effect size was weighted by its sample size as described in Hedges and Becker (1986). The statistical significance of the overall effect size was then tested by converting the \( d \) to a \( z \)-score value.

In cases where \( d \) was statistically significant, a statistic evaluating the variability of the effect across studies was calculated. This homogeneity statistic was then compared to the chi-square distribution, with \( k-1 \) degrees of freedom (\( k = \) number of effect sizes) to assess statistical significance. If significant heterogeneity is present, one can determine if various study characteristics are related to the variation in \( d \) across studies. In the present analysis, we examined whether variation was related to using a clinical or nonclinical sample for defining the eating-disordered group; and whether the year the study was published was linearly related to the size of the \( d \) value.

**RESULTS**

**Femininity and Eating Disorders**

A total of 23 \( d \) values from 22 studies (\( N = 2332 \)) were examined (one study included two independent sample; see Table 1). The range of \( d \) values was \(-.56 \) to \(1.00\). The overall effect size was determined to be \( d = .14 \). This was statistically significant, \( z = 4.24, p < .001 \). This indicates that the mean femininity score for the eating-disordered groups was significantly larger than the mean score for the nondisordered groups. Effect sizes were heterogeneous across studies, \( \chi^2 (22) = 102.85, p < .001 \). A follow-up contrast test analogous to analysis of variance (see Hedges & Becker, 1986) was conducted to see if variation in \( d \) values was related to whether or not the eating-disordered group was a clinical (\( N = 12 \)) versus a nonclinical sample (\( N = 11 \)). This variable did not affect variation in effect size (\( p > .05 \)). The \( d \) value for the clinical group (\( d = .11 \)) did not differ for the \( d \) value taken from samples with a nonclinical eating-disordered group (\( d = .15 \)). An additional analysis was conducted to see if variation in the effect size was linearly related to the year the study was published. This analysis, which is analogous to a weighted regression analysis, was not statistically significant.

Additionally, it was found that \( d = .19 \) for published studies while \( d = -.07 \) for dissertations, which was a significant difference, \( \chi^2 (1) = 9.54, p < .01 \). Also, \( d = .36 \) for the 4 studies using a sample of diagnosed anorexics, but \( d = -.21 \) for the 5 studies involving diagnosed bulimics and \( d = -.02 \) for the 11 studies with clinical as well as those with nonclinical samples of bulimics.

**Masculinity and Eating Disorders**

A total of 21 \( d \) values were calculated from 20 studies (\( N = 2,270 \)). One study included two independent samples (see Table 1). It should be noted that all of these samples were also used in examining the femininity and eating disorders effect size. The range of \( d \)
values was −1.25 to .14; all but two of the \( d \) values were negative in sign, indicating that the eating-disordered group had lower scores than the nondisordered group. The overall effect size was \( d = −.13 \), which was statistically significant, \( z = 3.94, p < .01 \). The sign of this \( d \) indicates that the eating-disordered groups had lower masculinity scores than did the nondisordered group. There was significant heterogeneity of effect size, \( \chi^2 (18) = 65.72, p < .01 \). A contrast was conducted to see if the variability in effect size could be partially attributable to whether or not the eating-disordered group comprised a clinical sample. This contrast was significant, \( \chi^2 (1) = 18.54, p < .01 \), indicating that the size of \( d \) differed significantly for studies that included a clinical sample (\( d = −.47, N = 10 \)) compared to a

<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>Clinical Prop</th>
<th>Operationalization</th>
<th>Fem ( d )</th>
<th>Masc ( d )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strober (1980)</td>
<td>44</td>
<td>1.00</td>
<td>Anorexics vs. other inpatients</td>
<td>.36</td>
<td>na</td>
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<td>Haggenmacher* (1981)</td>
<td>44</td>
<td>.50</td>
<td>Bulimarexics vs. controls</td>
<td>.19</td>
<td>−.23</td>
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<td>Sittik &amp; Katz (1984)</td>
<td>61</td>
<td>.50</td>
<td>Anorexics</td>
<td>.04</td>
<td>−.49</td>
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<td>VanSteen* (1984)</td>
<td>112</td>
<td>.00</td>
<td>EAT scores and BSRI</td>
<td>−.04</td>
<td>−.15</td>
</tr>
<tr>
<td>Erickson* (1985)</td>
<td>200</td>
<td>.00</td>
<td>Bulimics vs. “eating</td>
<td>.24</td>
<td>−.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>appropriate”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lewis &amp; Johnson (1985)</td>
<td>64</td>
<td>.50</td>
<td>Bulimic outpatients</td>
<td>−.54</td>
<td>−.46</td>
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<td>162</td>
<td>.00</td>
<td>Correlations, compulsive</td>
<td>−.34</td>
<td>−.06</td>
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<td></td>
<td></td>
<td></td>
<td>eating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bodl* (1986)</td>
<td>41</td>
<td>.00</td>
<td>Binge eaters vs. control</td>
<td>.42</td>
<td>−.24</td>
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<td>Cantelon, Leichner, &amp; Harper (1986)</td>
<td>50</td>
<td>.50</td>
<td>Anorexics and bulimics</td>
<td>.49</td>
<td>−.23</td>
</tr>
<tr>
<td>Dykens &amp; Gerrard (1986)</td>
<td>56</td>
<td>.00</td>
<td>Bulimics vs. nondieters</td>
<td>.10</td>
<td>−.16</td>
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<tr>
<td>Cox* (1987)</td>
<td>209</td>
<td>.00</td>
<td>Correlations with bulimia</td>
<td>−.12</td>
<td>−.12</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>scale</td>
<td></td>
<td></td>
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<tr>
<td>Heilbrun &amp; Mulqueen (1987)</td>
<td>47</td>
<td>.00</td>
<td>Correlations with EDI</td>
<td>1.00</td>
<td>−.55</td>
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<tr>
<td>Pettinati, Wade, Franks, &amp; Kogan (1987)</td>
<td>71</td>
<td>.67</td>
<td>Anorexics and bulimics</td>
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<td>−.87</td>
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<tr>
<td>Schramm* (1987)</td>
<td>22</td>
<td>.33</td>
<td>Bulimics vs. control</td>
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<td>−.23</td>
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<tr>
<td>Timko, Striegel-Moore, Silberstein, &amp; Rodin (1987)</td>
<td>45</td>
<td>.00</td>
<td>Correlations, EAT</td>
<td>.25</td>
<td>−.02</td>
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<tr>
<td>Holleran, Pascale, &amp; Fraley (1988)</td>
<td>209</td>
<td>.00</td>
<td>Correlations with BULIT</td>
<td>−.14</td>
<td>−.44</td>
</tr>
<tr>
<td>vanStrien &amp; Bergers (1988)</td>
<td>540</td>
<td>.00</td>
<td>Correlations, binge eating</td>
<td>.48</td>
<td>.14</td>
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<tr>
<td>Rybicki, Lepkowsky, &amp; Arndt (1989)</td>
<td>64</td>
<td>.50</td>
<td>Diagnosed bulimics</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Steiger, Fraenkel, &amp; Leichner (1989)</td>
<td>42</td>
<td>.67</td>
<td>Anorexics and bulimics</td>
<td>−.56</td>
<td>−1.25</td>
</tr>
<tr>
<td>Brown, Cross, &amp; Nelson (1990)</td>
<td>155</td>
<td>.00</td>
<td>High and low groups, BULIT</td>
<td>.03</td>
<td>−.39</td>
</tr>
<tr>
<td>Weedna-Mannak, Arondeus, &amp; Takens (1990)</td>
<td>38</td>
<td>.50</td>
<td>Anorexic inpatients</td>
<td>.94</td>
<td>−.91</td>
</tr>
<tr>
<td>Weedna-Mannak, Arondeus, &amp; Takens (1990)</td>
<td>38</td>
<td>.50</td>
<td>Anorexic outpatients</td>
<td>.87</td>
<td>−.74</td>
</tr>
<tr>
<td>Getzfeld* (1992)</td>
<td>18</td>
<td>1.00</td>
<td>Bulimic outpatients</td>
<td>−.56</td>
<td>na</td>
</tr>
</tbody>
</table>

Note: Clinical Prop = proportion of sample from a clinical setting; Fem \( d \) = \( d \) values associated with femininity scores; Masc \( d \) = \( d \) values associated with masculinity scores; EDI = Eating Disorders Inventory; EAT = Eating Attitudes Test; BULIT = Bulimia Test. *A dissertation.
nonclinical sample \((d = -0.066, N = 11)\). The year the study was published was not significantly related to variation in the \(d\) value, however.

Similarly, \(d\) values were virtually identical for published \((d = -0.13)\) versus dissertation data \((d = -0.11)\). For samples consisting of women diagnosed with AN, \(d = -0.76\); for those diagnosed with BN, \(d = -0.32\). For the studies with either clinical or nonclinical definitions of BN, \(d = -0.23\).

### Gender Role Traditionalism

Eight of the studies compiled measured participants’ gender role attitudes, that is, whether they had traditional or nontraditional attitudes about the appropriate roles for women and men. These studies did not all use the same scale to measure this construct, however. References to the eight studies can be found in Appendix 2. The overall effect size across these eight studies was \(-0.03\), which was not statistically significant. The effect size and operationalization of gender role traditionalism for each study are listed in Table 2.

### DISCUSSION

The goal of this paper was to use a powerful statistical technique, meta-analysis, to summarize the extant data concerning eating problems and gender role endorsement. Since reviewers had commonly concluded that such data were at best mixed, we hypothesized that (a) there would be a nonsignificant \(d\) for both the masculinity-eating problems and the femininity-eating problems effect size estimates; and (b) if a significant \(d\) did emerge, there would be substantial heterogeneity. Although fully 69 studies were examined, only 22 studies yielded data usable in the meta-analysis.

The relationship between femininity and eating disorders was based on 22 studies. The effect size was significant but small. It showed that eating-disordered women reported higher levels of femininity than did non-eating-disordered women. The analysis indicated significant heterogeneity of \(d\) values across studies, however. While neither clinical status of the sample nor year of publication appeared to influence \(d\), publication status did. Furthermore, we can tentatively suggest that diagnostic category is important to consider. Although the number of studies involved is too small to allow firm conclusions, it appears that both the nature and the size of the effect are different in those suffering from AN versus women diagnosed with BN. The largest effect size was found in the group of women diagnosed with AN, and this \(d\) value was moderate in size according to Cohen’s

<table>
<thead>
<tr>
<th>Study</th>
<th>(N)</th>
<th>Operationalization of Gender-Role Traditionalism</th>
<th>(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rost, Neuhaus, &amp; Florin (1982)</td>
<td>68</td>
<td>Used their own 12-item sex-role attitude scale</td>
<td>-0.43</td>
</tr>
<tr>
<td>Erickson (1985)</td>
<td>200</td>
<td>Attitudes towards Women Scale</td>
<td>0.12</td>
</tr>
<tr>
<td>Dykens &amp; Gerrard (1986)</td>
<td>56</td>
<td>Traditional Role Scale</td>
<td>0.62</td>
</tr>
<tr>
<td>Bodi* (1986)</td>
<td>41</td>
<td>Sex-Role Behavior Scale</td>
<td>-0.56</td>
</tr>
<tr>
<td>Heilbrun &amp; Putter (1986)</td>
<td>69</td>
<td>Gender-schema scores measured preoccupation with sex-role distinctions</td>
<td>0.62</td>
</tr>
<tr>
<td>Cox* (1987)</td>
<td>210</td>
<td>Attitudes towards Women Scale</td>
<td>-0.19</td>
</tr>
<tr>
<td>Brown, Cross, &amp; Nelson (1990)</td>
<td>155</td>
<td>Attitudes towards Women Scale</td>
<td>-0.66</td>
</tr>
<tr>
<td>Xinaris &amp; Boland (1990)</td>
<td>282</td>
<td>Sex-Role Ideology Scale</td>
<td>0.26</td>
</tr>
</tbody>
</table>

* A dissertation.
(1969) guidelines. Those diagnosed with AN were likely to score higher on the gender role endorsement measures compared to control groups.

The 21 samples used to look at the masculinity-eating problems relationship did indeed yield a small but statistically significant effect size. Nineteen of these studies indicated the same type of relationship, that is, one in which eating-disordered people had lower masculinity scores than did controls. Such findings are consistent with other data associating higher masculinity scores with better adjustment among women (O’Heron & Orlofsky, 1990). One study showed no difference between the mean scores. The analysis indicated significant heterogeneity of effect sizes across studies, although the heterogeneity was less than that found when examining the link between femininity and eating problems.

This heterogeneity was partially explained by differences in the size of the effect in samples that used a clinical experimental group versus those that obtained participants from a nonclinical setting. In the clinical setting, the difference between the masculinity scores of the eating-disordered group and the control group was almost one half of a standard deviation apart, showing the disordered group to report less masculinity. In contrast, in the nonclinical studies the effect size was quite small. Furthermore, preliminary results indicate that the effect size may vary depending on whether the diagnosis is AN or BN. Conclusions from these findings can only be tentative since there are just four studies using diagnosed anorexics and five using diagnosed bulimics.

These findings are surprising in two ways. First, a smaller than expected number of articles actually provided relevant data for the analysis. These studies are quite diverse methodologically. Some, for example, use clinical samples while others do not; some define eating disorders as AN, others as BN, and still others as “emotional eating.” Thus, it would not have been surprising to find conflicting data and, hence, no significant effect for either masculinity or femininity in relation to eating disorders. Nonetheless, significant effects were found for both. Admittedly, the overall $d$ values were small and there was significant heterogeneity across studies. Again, however, given the methodological (and theoretical) inconsistencies across studies, these findings suggest that the relationship between eating problems and traditionally measured gender role adoption is worthy of additional investigation. The findings concerning clinical versus nonclinical samples for the masculinity effect as well as the AN-BN differences in both the femininity and masculinity analyses suggest the need for more precise theorizing and more careful operational definitions.

At the same time, the relatively small $d$ values and the heterogeneity might be interpreted by some as indicating that gender roles play only a minor role in the development of eating problems. Indeed, recent volumes reviewing etiology of eating disorders often do not even have a chapter considering gender roles per se (although they may consider a feminist perspective; e.g., Brownell & Fairburn, 1995). Also, theories may treat gender as a background variable rather than assigning a specific etiological function to gender role adoption (e.g., Johnson & Connors, 1987; Polivy & Herman, 1985). Yet, there is no doubt that women are much more likely to be diagnosed with AN and BN than men are. We need, then, to consider new ways of examining the relationship between eating problems and gender roles.

One possibility is that the failure to include “negative” characteristics of gender roles in the PAQ and the BSRI may limit the relationship of these scales to certain pathologies. For example, both the PAQ and the BSRI indicate that women may be more “emotionally expressive.” However, neither examines the possibility that not all emotions are equally acceptable. Women are not, for example, permitted to express anger and frustration
openly, a limitation that girls often discover in early adolescence (Brown & Gilligan, 1992; Pipher, 1994). Recent data indicate that repression of anger may be associated with eating problems (White, 1995).

A second possibility is that the operational definitions of gender roles, especially the female role which has changed so dramatically over the past 20 to 30 years, are outdated. When Steiner-Adair (1986) questioned high school girls about society’s “ideal” woman, they did not describe the traditional feminine qualities captured in the BSRI or the PAQ. Instead, they described “superwoman,” a woman who achieves in both masculine (e.g., career, assertiveness) and feminine (e.g., family, nurturance) realms and who is attractive while doing all of this. High school girls who endorsed this image demonstrated greater eating pathology (Steiner-Adair, 1986, 1989). Thorton and Leo (1991) reported similar findings for college women. Thus, “superwoman” may be a form of feminine gender role adoption which constitutes a risk factor for eating problems.

It is also possible that the individual woman’s gender role adoption is not the core issue. Silverstein and Perlick (1995) have suggested that it is the mismatch between an adolescent’s modern gender role and her parents’ traditional gender expectations that sets the stage for eating disorders. Their findings remind us of the importance of the social context in the individual’s evaluation of gender. These data should also remind us of the importance of considering context in our theorizing, particularly about socially defined constructs such as gender.

Thus far, the focus of gender-eating disorders research has been on gender role adoption. However, being female means more than adopting a particular gender role. It also means that certain experiences, particularly involving objectification of the body, become more likely (Bordo, 1993). These experiences, including sexual harassment and sexual abuse, may be direct contributors to eating disorders (Piran, 1996; Wooley, 1994). Such experiences, especially when combined with society’s sexual double standard, may leave young women confused about their sexuality. For example, harassment and date rape seem to suggest that women can’t say “no” to sex while the double standard requires women to say no. Such confusion over society’s messages and one’s ability to control a sexual situation may lead to a sense of vulnerability, which may play out as an eating problem. The common finding that women suffering from BN are often promiscuous while those suffering from AN may appear to fear or be repulsed by sex suggests that sexual and eating issues are both body issues for many women.

The current meta-analysis has indicated that gender roles, even as traditionally defined by the PAQ and the BSRI, may be related to eating problems. However, it also underscores the importance of reconceptualizing the ways in which gender roles might be defined and examined as risk factors for the development of eating disorders. It is especially crucial to frame such investigations within a developmental framework, because some developmentalists have suggested that early adolescence is a time of gender role shifts and gender intensification (e.g., Brown & Gilligan, 1992). This is precisely the time that we begin to see an intensification of eating problems in white American girls.

REFERENCES


In J. S. Hyde & M. C. Linn (Eds.), The psychology of gender: Advances through meta-analysis (pp. 14–50). Baltimore: Johns Hopkins University Press.

APPENDIX 1

Studies Included in the Femininity and Masculinity Meta-Analyses


**APPENDIX 2**

**Studies Examined in the Gender Role Ideology Meta-Analysis**


**APPENDIX 3**

**Studies Examined in the MMPI Analysis**


