Anorexia Nervosa, Selflessness, and Gender-role Identity: A Study of Daughters and Parents

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ABSTRACT

Background: This study examines the relationship between anorexia nervosa (AN), selflessness, and gender-role identity in young Israeli women and explores their parents’ gender-role identity.

Method: Forty-seven AN women and 50 non-clinical controls completed the Eating Attitudes Test (EAT-26), Eating Disorder Inventory (EDI-2), Bem Sex-Role Inventory (BSRI), and Selflessness Scale. Twenty-four parents from the AN group, and 41 mothers and 38 fathers from the control group also completed the BSRI.

Results: As predicted, masculine traits protected against the detrimental effects of selflessness on eating disorder symptoms. AN participants obtained lower masculinity scores, their mothers also scoring lower on both the masculinity and femininity measures than the control group. Conclusions drawn from the BSRI must be adopted with caution since gender-role characteristics may vary over time.

Conclusions: The findings suggest the need to integrate the self-psychological approach, which emphasizes the anorexic’s tendency to ignore her own interests in favor of others’ needs, with feminist views that stress the role society plays in putting pressure on women to become alienated from themselves.

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INTRODUCTION

Anorexia nervosa (AN) is an enigmatic disorder with a complex etiology involving biological, sociocultural, and psychological factors (1, 2). Women are at a much greater risk of developing AN, and although some reports suggest more men are now being diagnosed with the disease (e.g., 3, 4), they remain less than 10% of this population (5). This differential gender risk has led to the conjecture that gender identity may play a significant role in the etiology of the disease (6).

In recent decades, numerous studies have examined the relationship between gender-role adoption and the development or presence of eating disorders (ED). As gender-role may be related to cultural norms, it is important to note that most research has been done in Western countries. While the initial findings indicated that ED individuals scored lower on the masculinity items of the Bem Sex-Role Inventory (BSRI, 7 [U.S.A.], 8 [Canada], 9 [USA]), a meta-analysis of the relationship between gender role and eating problems - including studies from the U.S.A., Canada, Germany, and Holland (10) has now indicated the existence of a positive relationship between EDs and femininity. This is especially true in samples that include AN sufferers, the mean femininity score of this group being higher than that of the non-disordered groups (10). A later study of a British sample by Meyer, Blissett and Oldfield (11) similarly identified higher BSRI levels of femininity as a risk factor in the development of EDs. Reviews of the literature (e.g., 10), and more recent works (e.g., 6 [Switzerland]) also indicate a negative
relationship between masculinity and EDs - an effect much stronger in clinical than non-clinical samples.

In addition to these Western studies, investigations have also been conducted in Chile (12, 13). In this westernized South American culture, more ED individuals fell into the feminine category, suggesting that femininity might be a primary gender-identity trait in such patients. While Hepp, Spindler and Milos’ (6) findings showed no correlation between femininity and core ED symptomatology, femininity and unspecific ED psychopathological symptoms were correlated.

In light of these diverse findings, the present study will investigate the gender-role identity-patterns of young Israeli AN and non-anorexic women and their interrelation with ED symptomatology. To our knowledge, the present work is the first Israeli study dealing with gender identity and EDs.

Some theoretical conceptualizations of eating disorders regard gender-role as a central issue in the etiology of anorexia nervosa such as the feminist approach, while others, such as psychoanalytic theories, put an emphasis on developmental factors that are only indirectly related to gender identity.

The high incidence of women with ED in the Western society including Israel (14-17) might call for a feminist view to understand this phenomenon. The feminist approach argues for the role of sociocultural norms - such as the promotion of thinness, female economic dependency on men, and socialization processes that silence women - in the development of EDs (18). As Kearny-Cooke points out, Western society regards women who take the initiative, seek self-recognition, and assert personal authority as unattractive, self-serving, and masculine. The inculcation of the belief that they should put others’ needs before their own and play a merely passive role in society enhances ED sufferers’ fears that if they give voice to the parts of themselves considered unfeminine they may turn people away - this self-imposed silence further compounding their sense of hopelessness and powerlessness (18). Gilligan, Rogers and Tolman (19) propose that women are socialized to suppress negative feelings and needs in order to preserve close relationships. Consistent with this conceptualization, Geller et al.’s (20) Canadian study of cognitive schemas found that AN women muted themselves to a larger degree than the control and another psychiatric group. Piran and Cormier’s (21) investigation of multiple gender-based social constructs in a Canadian sample similarly indicated that the degree to which women censor their feelings, suppress outwards expression of anger, and objectify their bodies predicted higher ED scores.

With respect to the latter phenomenon, Fredrickson and Roberts’ influential objectification theory suggests that the sexual objectification of women’s bodies in our society leads to the internalization of the observer’s view on the self. In order to alleviate feelings of shame when they fail to meet social standards of beauty, women make great efforts to change their physical appearance, thereby increasing the risk of developing EDs (22). Subsequent research has confirmed the predictions of this theory in American, British, and Canadian samples (21, 23-27).

Thus, according to the feminist approach, gender identity plays a central role in the development of EDs due to the process of socialization. Women being educated not to speak on their own behalf and comply with others/social norms, their emotional, psychological and physical disregard of/for themselves can make eating problematic. Stereotypically feminine gender roles thus increase the likelihood of the emergence of ED symptoms. The objectification theory complements this view by suggesting that women internalize the patriarchal gaze that turns them into sexual objects, thus further fostering the conditions that facilitate the development of EDs.

From a psychoanalytic perspective, the self-psychology approach (28) assumes that AN results from a chronic disturbance in the parents’ ability to maintain an empathic attitude toward their child, thus impairing development of a secure and genuine self. Rather than fostering a sense of selfhood, the AN seeks to please, accommodate, and be sensitive to others. She feels and behaves like a selfless soul serving others’ needs (28-32). The tendency of AN patients to give up their own interests and viewpoints and comply with others’ needs is measured by the Selflessness Scale (33), higher scores indicating the presence of AN.

Although self-psychology does not explicitly address the issue of gender-role identity, it implies that AN sufferers will lack traits traditionally identified as masculine - assertiveness, independence, and agency. Since the absence of such characteristics has been posited both by the self-psychological assumption of the relinquishment of the self and by the feminist linkage between gender-role identity and the silencing of the female voice, we hypothesize that we will find a negative correlation between masculine traits and selflessness in the AN group.

Rather than conflicting, the psychoanalytic and feminist approaches complement one another, both contributing to the understanding and treatment of EDs. While the feminist approach brings to the fore factors related to the
social position of women in society, the psychoanalytic approach stresses individual developmental factors.

The present study focuses on the interplay between gender identity - a social construct influenced by social norms - and selflessness, an individual developmental characteristic, and their relation to ED. Following feminist and self-psychology approaches, we propose a model linking personality traits, gender-role identity, and ED symptoms - selflessness contributing to the development of the latter and masculine traits buffering against its detrimental effect (see the path model in Figure 1).

It might be of interest to examine the gender-role identity of parents since gender-role identity possibly plays a significant role in the development of EDs. Gender-role denotes the interests, attitudes and behaviors typically attributed to men and women in a society and is strongly influenced by dominant social norms. Parents are possibly the main agents of transmission of social norms through education and by acting as models to children, including gender-role-related behaviors. Therefore, we hypothesize that there will be a transmission of gender-role from parents to daughters. Although the intergenerational transmission of parenting-effects is being increasingly investigated in diverse fields (34-38), no studies regarding the effect of intergenerational transmission of gender-role identity on ED sufferers have yet been conducted to date to the best of our knowledge.

**RESEARCH HYPOTHESES**

The hypotheses tested in the present study were:

- **Hypothesis 1**: Anorexic participants will score higher on measures of ED and selflessness than the non-clinical group.
- **Hypothesis 2**: Anorexic participants will exhibit less stereotypically masculine traits and more stereotypically feminine traits than the non-clinical group.
- **Hypothesis 3**: The gender-role identity of the participants’ parents in the study will also be examined: We will find intergenerational transmission of gender-role identity from parents to daughters.
- **Hypothesis 4**: Masculinity will be negatively correlated and femininity positively correlated with ED symptoms within the AN group.
- **Hypothesis 5**: A negative correlation between masculine traits and selflessness will be found among the AN but not among the control group.
- **Hypothesis 6**: The model presented in Figure 1 will hold for the whole sample: While selflessness will be positively correlated with ED symptoms, this relationship will be moderated by masculine traits.

**METHOD**

**PARTICIPANTS**

The participants were 47 anorexic young Jewish Israeli women and their parents (24 mothers and 24 fathers) and 50 non-clinical young Jewish Israeli women and their parents (41 mothers and 38 fathers) recruited from the center (Jerusalem and its surroundings) and north of Israel (Haifa and its surroundings). Table 1 presents the participants’ demographic characteristics. No significant differences were obtained between the AN and non-clinical groups in terms of age, years of education, or ethnic origin of parents and daughters. As expected, the AN participants exhibited a significantly-lower BMI than the non-clinical participants ($p < .001$). With respect to the BMI of mothers, the control group had a higher BMI than those of the AN group ($p = .04$).

All the AN participants fully met the DSM-IV criteria for anorexia nervosa. Nineteen participants suffered from AN restrictive type and 28 from AN binge-eating/purging type. Seven suffered from a co-morbid major depressive disorder. The only difference between the AN types for all variables in the study was the bulimia subscale of the Eating Disorder Inventory. This score was higher among the AN binge-eating/purging type ($M = 5.0, SD = 5.4$) than among the restrictive type ($M = .88, SD = 1.3$), $t_{(37)} = 2.99, p = .002$.

Twelve of the AN mothers had a history of EDs. Neither the non-clinical families (parents and daughters) nor the AN parents met the DSM-IV criteria for any current psychiatric disorder. No differences obtained with respect to any of the variables measured in the study between AN participants whose mothers had a history of eating disorders and those who did not.

**INSTRUMENTS**

The *Bem Sex-Role Inventory* (BSRI) (39) is a self-report questionnaire relating to 60 personality traits rated on
a 7-point scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”). Assessing femininity and masculinity as stereotypically-perceived in society, it includes three subscales: masculinity, femininity, and social desirability. The items in the masculinity scale are more stereotypically-characteristic of men (e.g., “assertive,” “defend my own beliefs,” “independent,” “self-reliant,” “ambitious,” “individualistic”); those in the femininity scale are more stereotypically-characteristic of women (e.g., “sensitive to the needs of others,” “tender,” “gentle,” “yielding,” “eager to soothe hurt feelings”). Scores were averaged, high scores representing more masculine or feminine traits. The social-desirability scale provides a neutral context to that of the other scales. The internal consistency was .86 for masculinity and .80 for femininity. The test-retest was high: masculinity $r = .90$ and femininity $r = .90$ (39). The reliability of the Hebrew version is comparable with the original BSRI (40). In the present study, the BSRI showed a high internal consistency ($\alpha = .88$ for masculinity, $\alpha = .81$ for femininity).

The *Eating Attitudes Test* (EAT-26) is a well-established instrument measuring symptoms and concerns characteristic of those suffering from EDs (41, 42). This self-report questionnaire consists of 26 items (e.g., “Particularly avoid foods with high carbohydrate content (e.g., bread, rice, potatoes, etc.)," processed on the basis of a factor-analytically-derived scale originally validated on 160 women with EDs and 140 female non-clinical comparison participants. It is highly reliable and correlates strongly with the original 40-item scale ($r = 0.98$) (42). It scores each item on a 6-point Likert scale, with answers ranging from “never” to “always.” This is then summed up in order to achieve a total score. The three least-frequent categories of “never,” “rarely,” and “sometimes” are scored as 0, “often” as 1, “usually” as 2, and “always” as 3. The higher the score, the more EDs symptoms exist. In this study, the EAT-26 yielded a high level of internal consistency ($\alpha = .93$).

The *Eating Disorder Inventory-2* (EDI-2) (43) is a standardized self-report measure consisting of 91 items (e.g., “I feel extremely guilty after overeating”) and 11 subscales, all assessing specific cognitive and behavioral dimensions of eating disorders: drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, maturity fears, asceticism, impulse regulation, and social insecurity. The last three subscales are new to the revised edition of the EDI-2. Each item is scored on a 6-point Likert scale and summed up to obtain the total score of the respective subscale, answers ranging from “never” to “always.” The three least-frequent categories of “never,” “rarely,” and “sometimes” are scored as 0, “often” as 1, “usually” as 2, and “always” as 3. The higher the score, the greater the respondent's tendency towards EDs. The original EDI-2 demonstrated a good internal consistency and a good convergent and discriminant validity (44). The alpha coefficients for the eight original subscales ranged between .82 and .90. Internal consistency for the three new subscales was fair to good, the alpha coefficients lying between .70 and .80.

The EDI-2 has been used in numerous studies, being found to successfully differentiate between participants with and without EDs (43). In the present study, the internal consistency of the EDI-2 total score was high ($\alpha = .98$) and fair-to-good for most of the subscales: drive for thinness ($\alpha = .82$), bulimia ($\alpha = .85$), body dissatisfaction ($\alpha = .84$), ineffectiveness ($\alpha = .83$), perfectionism ($\alpha = .77$),
controls had valid data. Therefore, we re-examined all
mean score of the subject's questionnaire.

In the analyses. Most subjects included in the analyses
were due to partial completion of questionnaires: protocols
in order: EAT-26, EDI-2, SS, and BSRI. Missing values
were identified in an exploratory factor analysis: sacrifice for family, sacrifice
for others, self-denial, and lack of self-interest (32). The
scale’s test-retest reliability was .93 (46), representing a
high degree of stability. In the present study, the internal
consistency was good (a = .76).

PROCEDURE
The AN participants were recruited by systematically
reviewing all patients newly admitted to either the psychiat-
ric department of the Hadassah Medical Center (Jerusalem,
Israel) or the Rambam Medical Center (Haifa, Israel)
during a 4-year period. All AN participants agreed to
participate in the study, but in two instances their parents
did not agree; therefore, these families were not included in
the study. Patients were diagnosed using the Schedule for
Affective Disorders and Schizophrenia-Eating Disorders
(47), being considered eligible for recruitment if they met
the DSM-IV full criteria for AN. After admission, they were
treated as either inpatients or outpatients according to the
severity of the illness. Families of non-clinical comparison
participants were contacted through the social network of
the AN families in order to obtain subjects with similar
occupational and educational levels.

Participants completed the questionnaires in the follow-
ing order: EAT-26, EDI-2, SS, and BSRI. Missing values
were due to partial completion of questionnaires: protocols
with more than 25% missing answers were not included in
the analyses. Most subjects included in the analyses
had few missing values. We substituted such values by the
mean score of the subject’s questionnaire. In the case of
Selflessness, only 30 AN participants and 40 non-clinical
controls had valid data. Therefore, we re-examined all
demographic variables for this subset of participants. We
obtained the same results as in the whole group, meaning
the groups were still well matched: no significant differ-
ences were observed in terms of age, years of education, or
ethnic origin of parents and daughters. Due to parents’ low
compliance, only about half of AN participants had parental
reports. Since gender role transmission was examined only
in this subset of participants, we compared this group to
AN participants without parental reports. No significant
differences between the groups were obtained on any
demographic or study variable, including femininity and
masculinity BSRI scores.

The study was approved by the Ethical Committees of
both the Hadassah University Hospital and the Rambam
Medical Center. The ethical approval included the clinical
and non-clinical populations and their parents. All
participants signed informed consent forms.

RESULTS

Hypothesis 1 was tested by a multiple analysis of variance
(MANOVA) and post-hoc univariate analysis of variance
(ANOVA). As expected, the participants diagnosed as
suffering from AN exhibited substantially higher ED
psychopathology (EAT-26 and all the subscales of EDI-2)
and Selflessness Scale scores than the non-clinical
participants. The MANOVA - including all the variables
compared (see Table 2) - yielded a significant result: $F_{(13,50)}$
= 5.34, $p < .001$. The post-hoc ANOVAs were significant,
large-effect sizes obtained for all the variables - the sole
exception was maturity fears that showed a trend in the
same direction.

Hypothesis 2 was tested by MANOVA and post-hoc
ANOVA analyses. Table 3 presents the mean scores of
masculinity and femininity for AN participants and their
parents and non-clinical participants and their parents. The
MANOVA including femininity and masculinity variables
for AN participants and the non-clinical group was not
significant ($F_{(2,93)} = 2.31, \text{ns}$), and thus the lower scores
of AN participants on masculinity should be considered
as a non-significant trend. AN mothers obtained lower
scores for both femininity and masculinity than those of
the non-clinical participants. Both the MANOVA ($F_{(2,62)}$
= 7.91, $p < .001$) and post-hoc ANOVAs for masculin-
ity and femininity were significant. Among the mothers
participating in the study, the effect sizes for gender role
were quite large. Among the fathers, neither the MANOVA
($F_{(2,59)} = .91, \text{ns}$) nor post-hoc ANOVA analyses yielded
any significant differences between the groups for either
femininity or masculinity.
In order to examine the intergenerational transmission of gender-role (Hypothesis 3), correlations were calculated between the gender-role identity of the parents and daughters. The association between the femininity traits of parents and their daughters in the AN group were significant and substantial \( r = .66, n = 18, p < .01 \) between mothers and daughters, \( r = .64, n = 18, p < .01 \) between fathers and daughters). Multiple linear regression analysis confirmed that both parents contributed to daughters’ feminine gender-role in the AN group: Mothers’ femininity traits \( (\beta = .43, p = .045) \) and fathers’ femininity traits \( (\beta = .57, p = .013) \) significantly predicted femininity traits in their daughters. This model was significant \( (F_{(1,10)} = 11.3, p = .03) \), explaining 69% of the variance.

A significant correlation also obtained between the masculinity traits of fathers and daughters \( (r = .58, n = 18, p < .05) \). No significant associations were found between either the femininity or masculinity traits of parents and daughters among the non-clinical group.

In order to test Hypothesis 4, Pearson correlation coefficients were calculated between the femininity and masculinity scales of the BSRI and ED psychopathology among the AN participants (see Table 4). Partially supporting our hypothesis, masculinity was negatively correlated with ineffectiveness, interoceptive awareness, and social insecurity, and positively correlated with perfectionism. No associations were found between femininity and ED psychopathology.

Hypothesis 5 was tested by the calculation of Pearson correlation coefficients between masculinity and selflessness for each group. The AN group exhibited a significant negative association between masculine traits and selflessness \( (r = -.43, p = 0.029) \), no such correlation obtaining among the non-clinical controls \( (r = -.04, \text{not significant}) \). Interestingly, although not predicted, a positive association was found between femininity and selflessness \( (r = .55, p < 0.001) \) in the non-clinical group not paralleled in the AN group \( (r = .02, \text{not significant}) \).

In order to test Hypothesis 6 (path model, Figure 1) that masculine traits would moderate the relationship between selflessness and EDs symptoms, a hierarchical regression
was performed using the enter method. ED symptoms were measured by a composite score calculated as the mean of the standardized scores of EAT-26 and EDI-2. All variables in the regression were previously standardized. Selflessness and masculinity were entered in the first step as predictors of ED symptoms, and their interaction was entered in the second step. Moderation is present if a significant interaction obtains between the predictors. We then analyzed the simple effects in the interaction. Multicollinearity constitutes a risk when the variance inflation factor (VIF) is 10 or more (48) and the tolerance statistics below .02 (49). In our model, the average VIF was 1.073 (a value well below 10), the tolerance statistics .913 for selflessness, .904 for masculinity, and .984 for their interaction. All these values were well above .02, so no multicollinearity may be assumed to exist in the data.

The regression analysis (see Table 5) indicated that selflessness, masculinity, and the interaction between them significantly predicted ED symptoms (F(3,62) = 12.91, p < .001), the results indicating that selflessness and masculinity explained 32% of the variance, their interaction explaining an additional 6%. The analysis of the simple effects in the interaction indicated that masculine traits moderated the impact of selflessness on ED symptoms. When masculinity scores were low, a strong effect was found between selflessness and EDs (β = .50, p < .001). When masculinity scores were of medium magnitude a significant effect still obtained (β = .32, p < .001). In participants who obtained high masculinity scores no effect of selflessness on ED symptoms obtained (β = .13, not significant) (see Figure 2).

**DISCUSSION**

This study set out to investigate the relationship between gender-role identity, selflessness, and EDs, as well as the intergenerational transmission of gender-role identity. The finding that AN participants exhibited a non-significant trend toward less masculine traits than the controls corresponds to numerous studies - particularly those involving clinical ED populations (10) and is in line with the self-psychology approach (28-30). The female anorexic’s lack of assertiveness and independence and tendency to be tuned to others’ needs while ignoring her own are diametrically opposed to the masculine traits of independence, self-confidence, and concern for oneself. The negative association between masculinity and ineffectiveness, interoceptive awareness, and social insecurity among the AN participants further suggests that a lack of masculine traits is closely related to certain psychological attributes common to EDs. These results are also consistent with the feminist understanding of the process of socialization imposed on women by modern society (18, 19, 21, 22). Because of society’s encouragement of men to be independent and strive to achieve their goals and interests, they are more protected against EDs than women, whose social role of putting the needs of others before their own, alienating themselves from their own wishes, and silencing their voices places them at greater risk of self-disregard.

Masculine traits as stereotypically viewed by society were negatively associated with selflessness - the more masculine traits a participant exhibited, the less selfless she appeared to be. No such association was found in the control group, the results also indicating that masculinity moderated the impact of selflessness on ED symptoms across the whole sample. These findings contribute to the description of the masculinity construct as possessing a common variance with the theoretical construct.

Table 5. Selflessness and the masculinity scale of the BSRI in the prediction of ED symptoms in AN and non-clinical participants

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>p</th>
<th>R</th>
<th>R²</th>
<th>ΔR²</th>
<th>p (ΔR²)</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selflessness</td>
<td>.39</td>
<td>&lt;.001</td>
<td>.57</td>
<td>.32</td>
<td>.32</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Masculinity</td>
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<td>.002</td>
<td>.62</td>
<td>.38</td>
<td>.06</td>
<td>.016</td>
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<tr>
<td>Step 2</td>
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<tr>
<td>Interaction</td>
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<td>.016</td>
<td></td>
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</tbody>
</table>

Figure 2. Selflessness (SS) and masculinity scale of the BSRI in the prediction of eating-disorder symptoms AN and non-clinical participants

ns = not significant

*** p < .0001

Masculinity low
Masculinity medium
Masculinity high
of selflessness. Masculine traits moderate the impact of selflessness on the development of EDs - assertiveness, independence, and standing up for one's beliefs are likely to protect against the development of EDs even among those whose self-disturbance might predispose them towards eating problems. Masculinity is important as a protective factor against EDs because it emphasizes individualistic values of self-regard. These results call for a conjoining of feminist and self-psychology perspectives in the effort to understand EDs; such an approach allows the interplay between societal and individual factors to emerge - the socially construed factor of gender interacting with the personality trait of selflessness related to developmental arrest.

The interesting positive correlation between selflessness and femininity among the control group reflects the traditionally giving and caring role played by women that is transmitted from mother to daughter. In contrast, this intergenerational transmission is not present in the AN group, which exhibits higher, pathological levels of selflessness - virtually to the point of self-relinquishment - that in previous studies (33) are linked with death or rejection of life.

The present results lead to several clinical implications. They confirm the validity of the self-psychological approach to the therapy of eating disorders via the promotion of a healthy self in the safe environment of the patient-therapist relationship. The protective role stereotypically masculine traits play similarly confirms the centrality of gender-role identity in the development of EDs. The study also affirms the benefit of treating AN patients from a feminist perspective that makes them aware of the dangers in succumbing to the pressures of society and renouncing their own needs for the sake of fulfilling their voice.

The present study is a first contribution to the possible association between the gender-role identity of parents and daughters. The intriguing disparity in the findings - an intergenerational transmission of gender-role identity existing exclusively among the AN but not among the non-clinical group - appears to support the claim made by family therapists that families of anorexics are characterized by an enmeshed, overprotective structure in which individual boundaries are frequently diffuse and weak (50).

The fact that AN mothers exhibited fewer masculine traits than those of the non-clinical counterparts and their daughters presented a similar pattern may be explained by the fact that mothers who lack masculine traits are unable to pass these characteristics on to their daughters. In other words, less assertive, less independent, and less self-confident mothers rear daughters who lack (some of) the traits necessary to protect the latter against developing eating disorders.

The AN mothers also scored lower on the femininity measure than the mothers of the non-clinical participants. Femininity is conceptualized as a form of communion that includes cooperation, attachment, and the creation of union (51) and reflects an expressive orientation - i.e., warmth and sensitivity (52). Mothers who exhibit fewer feminine traits as measured by the BSRI (“affectionate,” “love children”) may be more detached and less sensitive and empathic to their daughters, thus contributing - in line with the self-psychological approach - to a disturbance of the self that facilitates the development of EDs. In accordance with these findings, Bachar et al. (53) found that mothers of anorexic daughters scored significantly lower on the selflessness scale than control mothers, namely tended less than mothers of normal control daughters to give up, even temporarily, their own needs and viewpoints for the sake of fulfilling their offspring’s.

In addition, mothers to AN girls had lower BMI and higher rates of eating disorders history than mothers of non-clinical participants, suggesting a possible intergenerational transmission of eating disorders besides the transmission of gender-role.

**THE STUDY’S LIMITATIONS**

A number of limitations must be considered. The volunteer basis on which the participants joined the study may be a source of bias, i.e., the sample might not represent the population. Due to missing data in the selflessness questionnaire, our theoretical model was tested on a smaller sample. Therefore, this model should be interpreted with caution pending further replication with larger samples. Only about half of AN participants had parental reports on the BSRI. This group did not differ on femininity and masculinity scores or any other variable from AN participants without parental reports. However, parents’ low compliance may be a potential source of bias to gender role transmission results.

The masculinity construct may reflect a current mental state rather than a stable gender-role orientation. Another possible interpretation of the present findings may be that diminished masculinity resulted from depression or lower self-esteem associated with the eating disorder.
It will be of interest to include these variables in future research in order to examine this alternative model.

Conclusions drawn from the BSRI, a scale developed forty years ago, must be adopted with great caution. Contemporary empirical evidence in an American sample (54) suggests that most masculine traits are no longer regarded as specifically-male characteristics, even though most feminine traits are, both male and female respondents preferring to possess similar traits (i.e., a mixture of both feminine and masculine characteristics as defined by the BSRI). The patterns of desirability ratings nonetheless remained the same in this study - i.e., the respondents from 1972 and 1999 both believe that society still regards the same traits as desirable both "for a man" and "for a woman." The authors point out that these results "might cause one to be less critical of the BSRI" (54). Notwithstanding, these findings appear to explain why the healthy participants adopted more masculine traits while anorexic patients - more sensitive to societal expectations - did not. The sample of AN participants was small, and therefore we were unable to explore hypotheses relating to Bem's (55) four gender-role types (androgyneous, undiffereniated, masculine, and feminine traits). Additional research with a larger sample of AN participants is necessary in order to understand the association between this typology and ED symptomatology. Likewise, while the study compared ED sufferers with a non-clinical group, some effects might be non-specific to EDs. Further studies comparing other clinical samples must therefore be conducted in order to elucidate the unique connection between EDs and gender-role identity.

Authors’ contribution
Kyra Sarner-Levin, Laura Canetti, Bernard Lerer and Eytan Bachar contributed to the conception and design, analysis and interpretation of data and drafting. Yael Latzer and Omer Bonne contributed to the analysis and interpretation of data and drafting. Kyra Sarner-Levin, Laura Canetti, Bernard Lerer and Eytan Bachar contributed to the conception and design, analysis and interpretation of data and drafting.

References
29. Bachar E. The contributions of self-psychology to the treatment of


