Sex Roles (2007) 57:557–568
DOI 10.1007/s11199-007-9281-6

ORIGINAL ARTICLE

Perceived Gender Role Prescriptions in Schools, the Superwoman Ideal, and Disordered Eating Among Adolescent Girls

Janell Lynn Mensinger · Deanne Zotter Bonifazi · Judith LaRosa

Published online: 9 August 2007

Abstract In this study of 866 adolescent girls from US private schools we examined disordered eating. Based on the feminist theory of conflicting gender roles, we hypothesized that girls with greater disordered eating attitudes would be more likely to: (1) perceive more conflicting gender role prescriptions at school, and (2) endorse the superwoman ideal. We also predicted that the mechanism through which perceptions of conflicting gender role prescriptions at school influenced disordered eating was an individual's endorsement of the superwoman ideal. The data supported this mediation model. Girls with perceptions of more intense behavioral prescriptions for excellence in academics, appearance, dating, and the androgynous gender role, tended to endorse the superwoman ideal which, in turn, was associated with greater disordered eating.

Keywords Disordered eating · Superwoman ideal · Gender roles · School environment

The first author dedicates this manuscript to Sue Rosenberg Zalk, former Editor of *Sex Roles*. Dr. Zalk was my mentor when I began this line of research in graduate school. Her knowledge about and passion for the study of gender was inspiring, and her genuine concern for students reassuring. She has been dearly missed since her premature passing in July, 2001.

The research conducted for this manuscript was drawn from a dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy at The Graduate Center of CUNY. Sincere appreciation is given to the first author's dissertation advisor, Dr. Setha Low, Dr. Ira Sacker, colleagues at H.E.E.D., the participating schools, and the participants themselves who all helped make this study possible.

J. L. Mensinger · J. LaRosa
Department of Preventive Medicine and Community Health, State University of New York, Downstate Medical Center, Brooklyn, NY, USA

D. Z. Bonifazi
Department of Psychology, West Chester University, West Chester, PA, USA

J. L. Mensinger (✉)
Reading Hospital & Medical Center,
P.O. Box 16052, Reading, PA 19612–6052, USA
e-mail: mensingerJ@readinghospital.org

Introduction

It is believed that the prevalence of anorexia and bulimia nervosa among adolescent girls continues to climb (Society for Adolescent Medicine 2003). However, because of the secretiveness of eating disorders, few people actually seek treatment for their condition (Hudson et al. 2007) making accurate incidence rates difficult to ascertain. Epidemiological research has shown that anorexia nervosa in particular represents the third most common chronic illness among adolescent girls, after obesity and asthma (Lucas et al. 1991). In one large school-based study (n=81,247), 56% of the 9th grade girls reported having engaged in at least one of the following behaviors in order to lose or control weight: fasting or skipping meals, using diet pills or speed, smoking cigarettes, vomiting on purpose after eating, and/or using laxatives (Croll et al. 2002). In a study using a sample of 8- to 10-year-old children, Thomas et al. (2000) reported that approximately half of the girls and boys surveyed were dieting at least some of the time. Another study found 13% of girls in this same age group (i.e., 8–10 year olds) were *always* on a diet (Shapiro et al. 1997). Despite evidence that the majority of school girls think about their weight and actively diet, little research has been

done to understand the social pressures that girls perceive within their school's peer environment (Jimerson and Pavelski 2000; Johnson and Roberts 1999).

Gender Roles and Disordered Eating

Gender role prescriptions, or socially sanctioned expectations about behaviors traditionally associated with being a woman or a man, have been implicated by many clinicians and researchers in the development of eating disorders (e.g., Boskind-Lodahl 1976; Klingenspor 1994; Paxton and Sculthorpe 1991; Timko et al. 1987). Yet, several decades of research on gender roles and disordered eating have offered little clarity to the topic. A tacit debate exists in the literature over whether young women are more likely to exhibit disordered eating if they conform to the stereotypically masculine gender role or if they conform to the stereotypically feminine gender role. Some studies have shown the former to be true; that is, a positive association between young women who adhere to the masculine gender role (such as being competitive or emphasizing one's career) and disordered eating (e.g., Cantrell and Ellis 1991; Silverstein et al. 1990; Striegel-Moore et al. 1990; Thorton et al. 1991). Other studies suggest the latter; that is, a positive association between women who adhere to the feminine gender role (such as needing approval or caretaking) and disordered eating (e.g., Behar et al. 2002; Boskind-White and White 1986; Brown et al. 1990; Cash et al. 1997; Jackson et al. 1988; Lakkis et al. 1999; Martz et al. 1995).

Murnen and Smolak (1998) performed a meta-analysis of the extant literature in order to examine the relationship between disordered eating and adherence to gender roles. Although a total of 68 studies were considered for inclusion in the meta-analysis, only 23 were ultimately eligible for use in the analysis. The overall effect size for femininity was positive and statistically significant (d=.14), and for masculinity, it was negative and statistically significant (d=−.13). However, for both masculinity and femininity, effect sizes significantly varied across the studies used in the analysis. It is interesting that the diagnostic category (anorexia vs. bulimia) appeared to be an important factor; larger effects were found in anorexic populations. Despite the suggestion that women who endorsed a more feminine gender role tended to report greater disordered eating, whereas those endorsing a more masculine gender role tended to report less disordered eating, the authors cautioned against making any firm conclusions given the small and heterogeneous effect sizes, as well as the small sample size with respect to the number of studies eligible for the analysis. They suggested a need for more research attention to the issue in order to elucidate the relationship between gendered role behaviors and the development of disordered eating.

Researchers have approached the matter of gender roles and disordered eating from a variety of different perspectives. One approach has been to suggest that women with eating disorders are more likely to have an undifferentiated gender role orientation. This hypothesis was supported in a study by Lewis and Johnson (1985). They proposed that low self-esteem would be related to an absence of self-definition regarding gender role orientation and hence make a young women more vulnerable to disordered eating. In a similar vein, it has also been suggested that an androgynous gender role orientation, where a woman achieves a balance between masculine and feminine behaviors, has a protective effect on eating problems (Heilbrun and Mulqueen 1987). Hepp et al. (2005) supported both of these hypotheses and found that women who endorsed an androgynous gender role orientation tended to score lower on eating disorder pathology whereas undifferentiated women scored higher.

Other researchers have suggested that the relationship between disordered eating and gender roles is more complex (e.g., Barnett 1986; Timko et al. 1987). Briefly, their research shows that many women struggle to create an ideal self that fulfills both professional goals (i.e., masculine roles) *and* deeply ingrained social and personal obligations as wives, mothers, and caretakers (i.e., feminine roles). As opposed to finding a balance between the masculine and feminine gender roles like the androgynous woman does, gender roles prescriptions become conflicting for these women because they are pursued to the extreme. Consequently, these women (who also tend to be perfectionists) become overwhelmed by their need to "have it all"—the perfect job, house, husband, family, and, of course, appearance (Gordon 2000). This theory posits that the excessive pressures of an externalized sense of self and perfectionist achievement in multiple roles are often manifested as disordered eating. Eating disorder researchers have referred to this phenomenon as the "superwoman complex" (e.g., Hart and Kenny 1997; Steiner-Adair 1986, 1989; Smolak and Murnen 2001).

Educational Environments and Disordered Eating

Education researchers have examined the gendered cultures of girls only and coeducational private schools (e.g., Brody et al. 1998; Lee and Marks 1992; Heyward 1995). These researchers, as well as others (e.g., Lee et al. 1994; Mensinger 2001a), have discussed their observations of young women being subjected to gender role prescriptions by teachers and administrators at their schools. For instance, girls from elite private institutions reported that they were told how important it is to act competitively and to excel academically in order to be admitted into the top universities (the only universities they were made to believe were

acceptable to attend). On the other hand, they also reported that their schools made it very clear that they were to exhibit feminine decorum and behave deferentially. Thus, they were not to forget that they were ladies and that appearance matters, first and foremost. We suspected that young women who perceived these kinds of messages and social pressures (i.e., conflicting gender role prescriptions) would be more vulnerable to developing disordered eating.

Striegel-Moore et al. (1991) tested whether a school's social milieu, that is a subculture in which patterns and norms were evident, contributed to disordered eating behaviors in young women. Their research demonstrated less disordered eating among girls who perceived their school as encouraging social support and interpersonal involvement among students. They did not examine how perceptions of gender role prescriptions at school might relate to disordered eating.

Dyer and Tiggemann (1996), Tiggemann (2001), and Mensinger (2001b) also conducted research on school environments and disordered eating. Their focus was on the specific effect of the gender composition of the school. Although Tiggemann (2001) found no differences in disordered eating among girls attending single sex and coeducational schools, the results of analyses done by Dyer and Tiggemann (1996) and Mensinger (2001b) suggest that girls educated in single sex schools report greater disordered eating symptoms. Again, no attention was paid in these studies to how perceptions of peers' gender role prescriptions at school might relate to disordered eating in young women.

The Present Study

The purpose of this project was to address the gap in the literature on disordered eating and perceptions of gender role prescriptions in schools. As mentioned above, nearly a decade ago Murnen and Smolak recommended that more gender roles research was needed in the field of eating disorders due to the inconsistencies found in their meta-analysis. However, given the infrequent work on the topic of gender roles and disordered eating in recent years, little progress has been made. The present study is therefore particularly important because it addresses an area where we lack an understanding and research progress remains stymied. It brings a unique perspective to the topic by positing that the social context of the school is a primary source of learning gender role prescriptions, and that girls' perceptions of the school environment with respect to gender role prescriptions will be related to her engagement in disordered eating. Using an observational study design we performed a cross-sectional survey with adolescent girls in order to determine the presence of these associations.

More specifically, in light of the theory that disordered eating may develop, in part, as a result of endorsing the superwoman ideal, we considered whether perceptions of conflicting gender role prescriptions in one's peer environment at school might also contribute to disordered eating. In particular, we examined whether girls perceiving highly pressured behavioral prescriptions for excellence at their school in academic achievement, dating, appearance, and the androgynous gender role (hence conflicting gender role prescriptions) were more likely to engage in disordered eating. Individually these issues may have little to do with the development of disordered eating (with the exception of prescriptions for appearance perhaps). However, when combined, as theorized by feminist authors such as Wolf (1991), Bordo (1993), and Gutwill (1994), we believe that perceived social pressure from their school for girls to excel in all of these gendered role behaviors might have a negative psychological impact manifested in disordered eating. Despite some girls' viewing themselves as different from their peers, research in peer modeling and social reinforcement has nevertheless shown the influential nature of the peer environment on disordered eating behaviors (e.g., Lieberman et al. 2001; Stice 1998).

Thus, in accordance with the literature reviewed, we first hypothesized that perceptions of conflicting gender role prescriptions at school would be related to disordered eating. That is, the more a girl perceives her peers to be engaging in, and hence overachieving in the aforementioned gendered role behaviors, the greater her tendency to report disordered eating. Second, we also predicted that an individual's endorsement of the superwoman ideal would be positively associated with disordered eating. Third we predicted that perceptions of conflicting gender role prescriptions at school would be positively associated with endorsement of the superwoman ideal. Providing all of these relationships were supported, we sought to uncover a possible mechanism explaining the association between perceptions of conflicting gender role prescriptions at school and disordered eating. More specifically, we hypothesized that endorsement of the superwoman ideal mediated the relationship between perceptions of conflicting gender role prescriptions at school and disordered eating.

Method

Participants

This research was conducted at 11 US private schools in a North Eastern Metropolitan Area. Four of the schools were single sex and seven were coeducational. (Since gender composition of the school was not a significant factor in the

model considered, the groups were combined.) Data were collected from 866 adolescent girls between the ages of 13 and 20 years (Mean age=16 years). Seventy-six percent of the sample self-identified as White, approximately 6.5% identified as Black, 6% as Asian/Pacific Islander, 5.5% as Latina, and the remaining 6% identified themselves either as biracial or "other." All participating schools catered to the middle and upper middle classes of a predominately urban population.

Procedure

School health professionals were approached and agreed to participate in a research project that involved a sample of their students in grades 9–12 completing a survey that inquired about the social environment of their school, achievement in multiple roles, and disordered eating. After the data collection, the schools were offered a presentation on eating disorder prevention and/or intervention strategies given by an expert in the field from the H.E.E.D. Foundation (Helping End Eating Disorders). H.E.E.D. is a nonprofit organization dedicated to the prevention and treatment of eating disorders; it was the sponsoring organization of the present study.

Surveys were completed by students during the school day, usually in a health or physical education class. Participants were read a script of instructions that explained the purposes of the research, and they were assured anonymity. Participation in the study was voluntary, however it took place as a class activity, so all of the students began the survey, and a large majority (>90%) completed it. Students were given one full class period (approximately 40 min) to finish the survey. The school administrations signed forms confirming that the project was adopted as part of their curriculum; thus the need for parental consents was waived by the Institutional Review Board of the academic institution with which the first author was affiliated.

Instruments

Gender Role Prescriptions

We utilized the *School Gender Socialization Scale* (SGSS; Mensinger 2003) to assess participant perceptions of the gender role prescriptions (defined as socially sanctioned expectations about behaviors associated with one's gender) for girls within their school. The scale was devised as a result of focus group interviews with adolescent girls and also observations gathered from shadowing girls in the 9th and 10th grade throughout their day at school (Mensinger 2001a). The schools that participated in the qualitative research conducted for the development of the scale involved all-girls and coeducational institutions that were similar in demographics to those involved in the present study, but they were not the same schools used for the collection of the data analyzed in the present report.

The participants of the focus groups were told that their help was needed to design a survey where the purpose was to measure different kinds of gendered role behaviors in which girls at school engaged, and, behaviors that their school encouraged female students to exhibit. The main purpose of the focus groups was to elicit information from the girls about appropriate questions to ask in such a survey (i.e., questions relevant to adolescents today).

The focus groups yielded a total of 48 items. Several items were dropped and revisions were made to some of the items based on the collection of comments from pilot data with 200 high school students. The resulting SGSS measure contained 44 items, and it utilized a 6-point Likert response scale ranging from "strongly disagree" (1) to "strongly agree" (6). Higher scores on an item reflected the participant's perception that her female peers definitely engage in that behavior. Each item involved a behavior that was meant to be associated with a specific type of gender role prescription (e.g., appearance, academics, etc.). The Appendix offers the complete SGSS separated by the individual subscales.

Principal components analyses yielded four factors that utilized 28 of the items. The first component contained nine items reflecting peer behaviors concerning *appearance*; its internal consistency (Cronbach's alpha) was .85. Sample items from the appearance concerns subscale are "Girls at this school compare their bodies to one another" and "Looking good is important to girls at this school."

The second component was a compilation of six items involving *academic concerns*; it had a Cronbach's alpha of .79. Sample items from the academic concerns subscale include "Most girls here work hard to get top grades" and "Girls here consider acceptance into prestigious colleges and universities as very important."

The third component included three items that reflected stereotypical 'feminine' behaviors and four items that reflected stereotypical 'masculine' behaviors. We named it *androgynous gender role norms*. The Cronbach's alpha of the androgynous subscale was .73. An example of a 'feminine' item from this subscale is "Girls here are taught to have compassion when a peer is upset." An example of a 'masculine' item from this subscale is "Most girls here are quick to defend their beliefs."

The final component included six items about peer *dating concerns.* The Cronbach's alpha of the dating subscale was .73. Sample items from the dating subscale include "Being popular with guys is important to girls at this school" and "Going out with guys is a recurring topic of conversation around here."

Subscale scores were derived by adding the responses for each item (after reverse scoring the item on the androgynous subscale that was written in the opposite

direction). Before summing the subscale totals into a composite index that represented perceptions of peers' gender role prescriptions at school, we standardized each subscale score into *z*-scores giving them each a mean of zero and standard deviation of one. The *z*-score transformation was necessary in order to allow each subscale to contribute equally to the overall composite despite the number of items the subscale contained. The range of scores on the SGSS composite (which is sample dependent due to the *z*-score method) spans from a low of −12.15 (−6.3 after removing five outliers at the extreme lower end of the distribution) to a high of 6.06. Higher scores on the SGSS composite indicate that an individual perceives stronger behavioral prescriptions in each of the four domains (i.e., appearance, academics, dating, and androgynous gender role norms). The higher the total score, the more conflicting the perceived gender role prescriptions, and hence the more maladaptive the response is likely to be.

Disordered Eating

The dependent measure adopted for this study was the abbreviated *Eating Attitudes Test* (EAT-26) (Garner et al. 1982). The EAT-26 is a widely used instrument measuring disordered eating attitudes and behaviors where both reliability and validity have been well established (Garner et al. 1982). Sample items include "I am terrified about being overweight" and "I have the impulse to vomit after meals." Cronbach's alpha for the EAT-26 in the present sample was .92, which was higher than a previously reported alpha of .86 found in a nonclinical population (Garner et al. 1982). The improvement in internal consistency may have been due to our decision to utilize a more direct scoring method in order to assure sufficient variation in scores given that we were dealing with a nonclinical population (Lieberman et al. 2001). Rather than assigning the value of (0) to "Never," "Rarely," *and* "Sometimes," and (1), (2), and (3) to the more dysfunctional responses, as done in the clinical scoring method (Garner et al. 1982), we assigned the numeric value of (1) to "Never," (2) to "Rarely," (3) to "Sometimes," (4) to "Often," (5) to "Usually," and (6) to "Always." Total scores were computed by adding the raw scores for each of the items. Scores could range from a low of 26 (symptom free) to a high of 156 (extremely symptomatic). Of note here is that we were not using the EAT as a proxy for clinical eating disorders. Our interest was merely in disordered eating attitudes and behaviors, which may occur outside of a clinical syndrome.

Superwoman Ideal

Murnen, Smolak and Levine's (1994) *Superwoman Scale* (SWS), which has shown significant positive associations with disordered eating (e.g., Hart and Kenny 1997; Herald 1995), was created for a population of college-aged women preparing to enter the workforce. We adapted the scale to be more fitting to adolescents. The superwoman ideal represents perfectionist achievement in multiple roles. A majority of the items were modified to some degree, and several were replaced entirely with new items in order to match common experiences of high school-aged individuals. For example, the former items "Being known as a prominent person in the community is important to me" and "It is important to me that I rise to the top of my profession" were dropped from the old scale. We added "Being popular at school is important to me" and "It is important to me that I rise to the top of my class before graduating high school." Participants were asked to rate the 27 items on a 6-point Likert scale that ranged from "strongly disagree" to "strongly agree." One item was dropped from the scale due to a poor communality estimate with the remaining items. The Cronbach's alpha for the remaining 26 items was .82. Total scores were computed by adding the raw scores for each of the items. Scores could range from a low of 26 to a high of 156, with higher scores indicating greater endorsement of the superwoman ideal. Of note is that in prior literature on disordered eating, gender roles, and the superwoman ideal (e.g., Crago et al. 1996; Silverstein and Perdue 1988; Timko et al. 1987) the *Self-Roles Inventory* (SRI) (Linville 1985) was utilized to measure an individuals' endorsement of the superwoman ideal. We used a slightly updated version of Linville's scale as a means of validating the Superwoman Scale. Given the strong correlation between the two measures [$r(818)=.64$, $p<.0001$], construct validity for the revised Superwoman Scale was established.

Body Dissatisfaction

In order to assess the degree to which participants were dissatisfied with their body, Thompson and Gray's (1995) *Contour Drawing Rating Scale* (CDRS) was administered. Of note is that the CDRS is completed and scored using the same method as Stunkard, Sorensen, and Schulsinger's (1983) formally created *Figure Rating Scale* (FRS). It differs from the FRS only in that it uses updated figure drawings to represent the nine bodies. Respondents are asked to examine figure drawings of nine bodies which range from emaciated to obese as references for rating how they (a) currently see themselves, (b) would ideally like to appear, and (c) what figure they believe that the other sex finds most attractive. A "body dissatisfaction" score is calculated by subtracting the participant's nominated "ideal" body from her "current" body figure rating. That is, if a participant rated her current body as a 5 but would ideally like to be only a 2, her score on the "body

dissatisfaction" variable would be 3. If she rated her current body as a 2 but would ideally like to be a 5, her "body dissatisfaction" score would be a negative 3. In the present sample, body dissatisfaction scores ranged from a low of −6.18 to a high of 6.82. The CDRS has been established as a reliable and valid measure for body dissatisfaction (Thompson and Gray 1995).

Data Analysis

Statistical tests of association for continuous variables like scores on the EAT, the SGSS and the SWS are most appropriately modeled using multiple regression procedures (Cohen and Cohen 1983). In situations where grouping variables also apply (e.g., race/ethnicity), multiple regression models can easily handle both categorical and continuous independent variables as well as interaction effects between them, making them highly flexible data analytic strategies. For this reason, regression techniques form the mathematical basis for the majority of parametric statistical modeling procedures employed, including structural equation modeling and analyses of covariance. As demonstrated in MacKinnon and colleagues' paper on methods for testing mediation effects in psychological research (MacKinnon et al. 2002), various tests exist for determining the significance of mediation effects derived from multiple regression models. In the present study we utilize one of the most standard methods discussed in the MacKinnon paper under the "causal steps" approaches. This method was popularized by Baron and Kenny's (1986) seminal article on mediation and moderation. Given that the power of their method has been demonstrated as relatively low, it is a conservative strategy (MacKinnon et al. 2002).

The Baron and Kenny approach to establishing mediation involves fitting a series of regression models. In each of the models it is important to control for the same set covariates. Because race/ethnicity has been shown to be a factor contributing to disordered eating symptoms in previous studies (e.g., Striegel-Moore et al. 2003) we felt it was important to covary the effects of belonging to different ethnic groups. We also controlled for the possible confounding effect of body dissatisfaction since it is considered to be among the strongest risk factors for disordered eating (Polivy and Herman 2002). Doing so served two purposes: (1) it decreased the error sum of squares which improved the power of the model, and (2) it factored out the variance body dissatisfaction contributed to disordered eating scores which enabled us to determine the *unique* impact our independent variables of interest (superwoman scores and/or perceptions of conflicting gender role prescriptions at school) had on disordered eating. Finally, we controlled for the school from which the participant came. Although the number of schools in the present study (n=11) was too small to perform a robust traditional multilevel analysis (i.e., a Hierarchical Linear Model, as in Bryk and Raudenbush 1992), we included school in the model in order to account for the nested structure of the data and hence adjust for the greater similarities among students who attended the same schools. Not doing so would have violated the independence assumption among the observations and hence downwardly bias the standard error estimates. The consequence of this would be an increased probability of committing a Type I error. Thus school was included as a factor purely for statistical as opposed to theoretical reasons. All models were run using Proc GLM in SAS version 9.1.

Results

Descriptive statistics for the EAT, SGSS, and SWS for the total sample and individual racial/ethnic groups are provided in Table 1. Analysis of variance by race indicated no omnibus differences in SGSS or SWS scores after adjusting for differences in subgroup sample size (using the Welch statistic). For EAT scores however, significant differences did exist across the groups [Welch $F(4, 112)=6.18$; $p<.001$]. Post hoc analyses using a Scheffe adjustment indicated that Blacks reported significantly fewer disordered eating attitudes and behaviors than Whites ($p=.005$).

Also for descriptive purposes, Table 2 provides the Pearson correlation coefficients among all of the independent variables, covariate, and dependent variable. Although our primary analyses only involve total SGSS composite scores, the subscales of the SGSS are included in Table 2 for illustration of how they individually relate to disordered eating and endorsement of the superwomen ideal.

In order to test our proposed mediation model we began by regressing disordered eating scores on total SGSS scores after controlling for the effects of race, body dissatisfaction, and school. This model establishes a relationship between the independent variable (perceptions of gender role prescriptions at school—SGSS composite scores) and the dependent variable (disordered eating—EAT scores) and is the first in a series of required regression models for testing a mediation effect. It is often referred to as path c in the mediation literature.

Results indicated that this relationship was in fact present ($\beta=.91$, SE=.30, $t=3.08$, $p=.002$) after accounting for the significant effects of race, school, and body dissatisfaction. As predicted, the more a young woman perceived conflicting gender role prescriptions at school (reflected by higher scores on the SGSS composite), the greater the disordered eating reported.

Table 1 Mean values of disordered eating, superwoman ideal, and total SGSS scores by racial/ethnic groups.

Race	Number (*N*)	Mean	SD	Range
Disordered eating[a]				
White	646	*63.38	21.99	30–151
African American	55	*52.00	16.53	30–103
Asian	51	61.98	13.33	44–96
Hispanic	47	58.15	15.88	30–96
Biracial/other	41	63.07	24.58	30–151
Total	840	62.24	21.25	30–151
Superwoman ideal[b]				
White	655	109.24	13.74	52–152
African American	56	111.68	13.56	85–137
Asian	51	107.18	11.95	85–132
Hispanic	48	110.99	13.55	87–150
Biracial/other	42	110.96	14.06	80–144
Total	852	109.46	13.64	52–152
Total SGSS score[c]				
White	658	.0866	2.40	−12.15–6.06
African American	55	.1191	1.91	−3.98–5.83
Asian	52	−1.0532	2.61	−6.46–4.90
Hispanic	48	−.1287	2.59	−6.30–4.78
Biracial/other	43	−.0536	2.14	−4.94–3.76
Total	856	.0003	2.39	−12.15–6.06

**Significantly differs from other* $*p<.01$

[a] The possible range on the EAT scale used to measure disordered eating attitudes and behaviors is 26–156, with higher scores indicating more disordered eating attitudes and behaviors.

[b] The possible range on the Superwoman Scale is 26–156, with higher scores indicating greater endorsement of the superwoman ideal.

[c] Due to the use of *z*-scores, the possible range on the SGSS Scale is sample dependent. About 99.5% of the sample fell between a low score of −6.30 and a high score of 6.06 (five people scored at the extreme low end). Higher scores indicate perceptions of conflicting gender role prescriptions. Lower scores indicate perceptions of a more neutral, or less pressured environment with respect to behavioral prescriptions surrounding gender roles.

The second step to determine the presence of a mediation mechanism between perceptions of gender role prescriptions at school and disordered eating is to model the proposed mediator (superwoman scores) as a function of the independent variable (SGSS composite scores). This is often referred to in the mediation literature as path *a*. After we controlled for school, race, and body dissatisfaction (one must include the same covariates in order to ensure the algebraic equivalence between the difference of the total effect and mediated effect, and the product of the individual paths leading from the independent variable to the mediator and from the mediator to the dependent variable, i.e., $c-c'=ab$), multiple regression analysis suggested that SGSS composite scores were related to superwoman scores (β=2.77, SE=.191, t=14.50, $p<.0001$). Girls who perceived more conflicting gender role prescriptions at school showed a greater endorsement of the superwoman ideal.

The third step for testing a mediation effect is to regress the dependent variable (disordered eating) onto the mediator candidate (superwoman scores) in order to ensure a significant relationship exists here. The path extending from the mediator to the dependent variable is often referred to in the mediation literature as path *b*. After controlling for body dissatisfaction, race, and school, multiple regression results indicated that endorsement of the superwoman ideal was indeed positively associated with disordered eating (β=.2903, SE=.048, t=6.02, $p<.0001$).

The final model required to complete a test of mediation using the Baron and Kenny approach involves regressing disordered eating on both the putative mediator (superwoman scores) and the independent variable (SGSS composite scores). The effect of most interest is that between SGSS composite scores and disordered eating. In the mediation literature we refer to this path as c'. It represents the effect of the independent variable on the dependent variable after accounting for the mediator (and other covariates included in the earlier equations). If this effect is rendered nonsig-

Table 2 Pearson correlation coefficients.

	1	2	3	4	5	6	7	8
1 Total EAT Scores	–							
2 Body dissatisfaction	.44**	–						
3 Superwoman ideal	−.21**	.09	–					
4 Appearance norms	.27**	.20**	.28**	–				
5 Dating norms	.17**	.13*	.29**	.61*	–			
6 Academic norms	−.04	−.04	.30**	−.04	.02	–		
7 Androgynous gender role norms	−.12*	−.09	.25**	−.20**	−.07	.54**	–	
8 SGSS composite (total *z*-scores)	.12*	.08	.47**	.57**	.65**	.63**	.53**	–

N ranged from 807 to 857 depending on pair-wise comparison.

** $p<.0001$ (two-tailed)

* $p<.001$ (2-tailed)

nificant in this model and the effect of the mediator remains significant, a mediation mechanism is supported.

After controlling for school, body dissatisfaction, and race, results of this model indicated that superwoman scores were still related to disordered eating (β=.282, SE=.054, t=5.20, p<.0001). However, the effect of path c' was not significant with superwoman scores also in the model. That is, perceptions of gender role prescriptions at school we no longer associated with disordered eating (β=.1335, SE=.328, t=.41, p=.6846). These findings suggest that a mediation mechanism is indeed present. The effect of perceptions of conflicting gender role prescriptions at school on disordered eating is explained by endorsement of the superwoman ideal.

Discussion

As discussed earlier, relationships between masculine and feminine gender role behaviors and eating disorders have been studied for decades with inconsistent findings. With her theory of the superwoman, Steiner-Adair (1986) attempted to resolve the dilemma by positing that neither traditionally feminine nor traditionally masculine gender role behaviors in particular were associated with disordered eating. Rather, what fueled disordered eating in some women was the conflict and overwhelming pressures that result from a desire to excel perfectionistically in both—that is to be the *ultimate* contemporary woman, hence a superwoman. Given that past research has shown that endorsement of the superwoman ideal is a significant predictor of variation in disordered eating patterns (e.g., Crago et al. 1996; Hart and Kenny 1997; Timko et al. 1987), we hypothesized that (1) a construct measuring a girl's perceptions of peers' gendered role behaviors (i.e., behaviors which in extreme form represent conflicting gender role prescriptions at school) would similarly relate to disordered eating, and (2) girls who endorsed the superwoman ideal in our data would also report more disordered eating. Providing these relationships held true, we hypothesized that endorsement of the superwoman ideal would mediate the effect of perceptions of conflicting gender role prescriptions at school on disordered eating. Each of these hypotheses was supported. Perceptions of conflicting gender role prescriptions at school influenced disordered eating through its association with endorsement of the superwoman ideal.

The findings presented here support those of an earlier study that utilized the school level data associated with this investigation (Mensinger 2005). The study showed that entire schools characterized as having more 'conflicting' environments (as determined by higher aggregated scores on the SGSS) had more disordered eating among female students than did schools characterized as having a less 'conflicting' environment. This relationship was mediated by superwoman scores such that schools rated higher on the SGSS composite tended to be educating more young women who endorsed the superwoman ideal. In turn, increased disordered eating patterns were found at the school. Our findings show that an *individual's* perceptions of gender role prescriptions at school operate similarly with respect to having an indirect association with disordered eating through endorsement of the superwoman ideal.

Although our data support the feminist theory of conflicting gender roles (Bordo 1993; Orbach 1986) we must take precautions in how to interpret the findings. The construct used to measure perceptions of gender role prescriptions is complex. As described in the introduction, it must encompass high ratings on the full range of subscales to represent perceptions of gender role prescriptions that are conflicting. Accordingly, it is the *combination* of perceiving a great deal of appearance, academic, and dating concerns among peers, paired with pressures to behave in both stereotypically masculine and feminine gender roles (as measured by the androgynous subscale) that encourages individuals to endorse the superwomen ideal and in turn be more likely to engage in disordered eating. Notably, when the subscales were considered as individual constructs however, the Pearson correlations (shown in Table 2) indicated that only two of the four (peer dating and appearance concerns) had positive relationships with disordered eating. Perceptions of academic norms had no relationship with disordered eating, and, perceptions of androgynous gender role norms had an inverse relationship with disordered eating.

The inverse relationship between the androgynous subscale and eating problems could be interpreted as contradicting the hypothesis about conflicting gender role prescriptions in schools. We do not believe this to be the case. The items in the androgynous subscale represent both stereotypical masculine and feminine behaviors that are adaptive for young women (e.g., expressing their emotions, defending their beliefs, being self-sufficient). As demonstrated in the literature (Behar et al. 2002; Heilbrun and Mulqueen 1987; Hepp et al. 2005), the data from this investigation suggest that perceptions of peers engaging in these behaviors are associated with less disordered eating. It is only when high scores on the androgyny subscale are paired with high scores in the other three domains (i.e., appearance, academics, and dating), do these behavioral prescriptions become problematic and hence conflicting. Thus, central to the theories relating disordered eating to endorsement of the superwomen and perceptions of conflicting gender role prescriptions at school is that the pressure to engage in both stereotypical feminine and masculine behaviors must be coupled with an excessive emphasis on external appearances and achievements. Research on the notion of the superwoman ideal describes

women who "want it all" as aiming for great looks, a highly respected job, a fabulous social life, a wonderful husband, and talented children (e.g., Orbach 1986; Smolak and Levine 1996; Steiner-Adair 1986). The superwoman is not satisfied with fulfilling ordinary masculine and feminine gender roles like her well-adapted androgynous peer; she wants to achieve perfection in all of her roles.

Finally, the relationship between the superwoman construct and perfectionism deserves attention. Although perfectionism was not directly measured in this study (it is obviously to some extent inherent in the superwoman construct) there has been a great deal of attention to the prospective role of the perfectionist personality and eating disorders (e.g., Fairburn et al. 1999; Wonderlich et al. 2005). Indeed perfectionism has long been associated with clinical eating disorders, as indicated in its presence as a subscale of the Eating Disorders Inventory (Garner and Olmsted 1984). It is likely that perfectionism plays a mediating or moderating role in the model proposed in this paper. One possibility is that perfectionism mediates the relationship between superwoman scores and disordered eating. Or, alternatively, perhaps perfectionism moderates the relationship between perceptions of gender role prescriptions at school and endorsement of the superwoman ideal. This would explain why some women are more negatively impacted by their social environment. Those with a true underlying perfectionist personality may be more vulnerable to demands for external achievement, issues of social comparison, and perceived pressures at school. This would mean that 'conflicting' gender role prescriptions (i.e., high scores on the SGSS) lead to the endorsement of the superwoman ideal and hence more disordered eating only for individuals with a perfectionist temperament. The presence of either of these relationships would help emphasize that the conflicting gender role prescription theory does not suggest that all aspects of the superwomen ideal are bad. To be sure, it can hardly be argued that women should not be encouraged to fulfill multiple gender roles and engage in both masculine and feminine behaviors. The feminist movement has made it possible for women to have both careers and families simultaneously. Clearly, many women do so successfully, are satisfied with their lives, and are free from disordered eating. The possible mediating or moderating role of perfectionism should be explored in future research that involves the study of gender role prescriptions in schools, the superwoman ideal, and disordered eating.

Limitations and Concluding Remarks

Among the limitations inherent to the present research design was the cross-sectional nature of the data collected. The temporal ordering of the variables cannot be determined within the context of our study. We assume, only because it is intuitive to do so, that adopting superwoman expectations for oneself leads to disordered eating and not vice versa. But without longitudinal data we cannot establish a statement of causal relations. Even more controversial is the ordering of our independent and mediator variables. It could be argued that individuals who endorse the superwoman ideal are more apt to perceive conflicting gender role prescriptions at school. Although our mediation analysis does not support a model suggesting endorsement of the superwomen ideal leads to perceptions of conflicting gender role prescriptions, we cannot rule out the possibility without temporal ordering.

The next step to be taken in order to establish causal relations, considering that our data support associations between perceptions of gender role prescriptions at school, endorsement of the superwoman ideal, and disordered eating, would be to carry out a longitudinal investigation of these issues. If schools were to adopt a standard survey at both the beginning and end of the academic year including measures of well-being, endorsement of the superwoman ideal, disordered eating, and perceived gender role prescriptions, we could prospectively track the development of disordered eating and the factors preceding them for cohorts of individuals. This kind of screening data could greatly facilitate the school psychologists' ability to intervene preemptively in cases where problems seem to be developing. Conversations with the various health professionals at the participating schools informed us that, even when disordered eating was clearly identified in a student, it was often very difficult to get parents to take this concern seriously. We were told that often these girls lived in households where the mothers were known to be obsessed with their own bodies and diets. With the presence of data to support the claim of a problem, perhaps the concerned school health professional would have more ability to convince the parents and the school administration of a needed intervention.

Given the relatively homogenous student populations served by the private schools utilized in this investigation, another limitation of the present study is the question of generalizability to the public school domain. Peer behaviors and social norms in public schools may be too diverse to characterize in the manner sought using the items of the SGSS. Realistically, the scale might not be as effective in schools with graduating class sizes of several hundred individuals. The graduating class size of this sample ranged from a low of 40–50 students to a high of only slightly over 100. It may be more difficult for a participant to rate her perceptions of peers' behaviors in a social climate as diverse as seen in many public schools. Accordingly, the SGSS should be further validated as a reliable measure of the perceived gender role prescriptions in schools of different demographic constitutions.

Despite the above limitations the data suggest a plausible mediation model of great importance. The strong direct relationship between perceptions of conflicting gender role prescriptions at school and endorsement of the superwoman ideal suggests that young women who see peers engaging in extreme levels of gendered role behaviors are likely feeling undue pressures to excel themselves in multiple roles. The present study suggests that these pressures translate into the adoption of superwoman expectations and may be manifested in a greater tendency to exhibit disordered eating. Hence we believe that our findings, in conjunction with those of Mensinger (2005) mentioned above, implicate gender role prescriptions in the social climate as a critical factor in understanding the development of disordered eating.

Appendix

School Gender Socialization Scale

Total SGSS composite = z(appearance) + z(academic) + z (androgynous) + z(dating).

Appearance concerns (Alpha=.85)

High score indicates that the individual perceives a great deal of concern over appearance among female classmates

1. Being overweight would be difficult for a girl at this school.
2. Girls at this school are pretty self-conscious about their appearance.
3. There is a lot of pressure in this school to be thin.
4. Looking good is important to girls at this school.
5. Girls at this school worry about the kind of clothes they wear.
6. Girls at this school compare their bodies to one another.
7. Girls often get teased for their appearance at this school.
8. Girls at this school tend to conform to the way others do things.
9. Girls here often act in ways that will gain the approval of peers.

Academic norms (Alpha=.79)

High score indicates that the individual perceives a great deal of concern over academics among female classmates

1. Most girls here work hard to get top grades.
2. Getting the highest grades is respected among girls at this school.
3. Girls here consider acceptance into prestigious colleges and universities as very important.
4. Girls here tend to be very ambitious and goal oriented.
5. Most girls at this school would consider themselves intelligent.
6. Studies generally come first at this school.

Androgynous social norms (Alpha=.73)

High score indicates that the individual perceives a great deal of positively oriented stereotypical ‘masculine’ and ‘feminine’ behaviors among female classmates

1. Girls here are taught to have compassion when a peer is upset.
2. Girls here are taught to be sensitive to the needs of others.
3. Girls at this school are discouraged from showing their feelings or being too emotional. (Reverse Coded)
4. Girls here are generally encouraged to take risks.
5. Most girls here are quick to defend their beliefs.
6. Girls here have been taught to be self-sufficient.
7. Teachers here show a lot of respect for the intellectual abilities of the girls at this school.

Dating norms (Alpha=.73)

High score indicates that the individual perceives a great deal of concern over dating among female classmates

1. Going out with guys is a recurring topic of conversation around here.
2. At this school, it is important to the girls to be friendly with and go out with guys.
3. Many girls here seem to like hanging out with guys more than hanging out with other girls.
4. Being popular with guys is important to girls at this school.
5. Most girls here probably spend time preparing to look their best for weekend nights out (especially if there is potential to meet guys).

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