

ORIGINAL
RESEARCH
PAPERProtective self-presentation style:
Association with disordered eating
and anorexia nervosa mediated by
sociocultural attitudes towards
appearance

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ABSTRACT. OBJECTIVE: We tested the hypothesis that a protective self-presentation style (Lennox and Wolfe, 1984) is associated with eating pathology and anorexia nervosa (AN) and that this association is mediated by sociocultural attitudes towards appearance emphasizing the thin ideal. **METHOD:** We compared the protective-presentation style of women with AN (N=17), partially recovered women (N=110), fully recovered women (N=73), and female controls (N=374). **RESULTS:** Ill women had a more protective self-presentation style than partially or fully recovered women, who in turn had a more protective self-presentation style than controls. Sociocultural attitudes towards appearance fully mediated the association between protective self-presentation and disordered eating. **CONCLUSIONS:** Protective self-presentation may therefore be a risk factor for AN and/or a prognostic factor. Implications for therapy and prevention are discussed.
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INTRODUCTION

Impression management, as developed in social psychology, suggests that people use one, both, or neither of two basic behavioral strategies to adopt desired social images or identities and convey them to others. Both strategies reflect a high degree of concern for social cues and social approval, yet they are theorized to derive from different underlying motives. One strategy, termed “protective self-presentation” (1), “protective impression management” (2), or “getting along” (3), is to avoid failure in interpersonal relations and to foster an image unlikely to engender social disapproval. The underlying motivation of the other strategy, “acquisitive self-presentation” (1), “assertive impression management” (2), or “getting ahead” (3), stems from self-enhancing motives like the desire for power, influence, and status. The seeds of these two basic styles of interpersonal orientation were sown in Goffman’s essay “on

Facework” (4) and developed in the framework of socioanalytic theory (1, 2). Hogan (5) claimed that as people develop these styles over time, they become more and more automatic and unconscious.

Lennox and Wolfe (3) proposed two instruments intended to measure these strategies. Their Concern for Appropriateness Scale (CAS) and Revised Self-Monitoring Scale (RSMS) are conceptually derived from Snyder’s Self-Monitoring Scale (6) and measure, respectively, a withdrawn, passive, fearful approach (“protective self-presentation”) and an outgoing, active approach (“acquisitive self-presentation”) to social interaction. Although scores on these questionnaires are continuous and not dichotomous, most people tend to score higher on one than the other, and self-monitoring literature refers to those who tend to have higher scores on the CAS as “protective self-presenters” and those who tend to have higher scores on the RSMS as “acquisitive self-presenters”. Both the CAS

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(7) and the RSMS (8) have been shown to display test-retest reliability, justifying the assumption in most research that they are relatively stable personality traits.

Protective self-presenters are described as often experiencing negative emotions such as embarrassment and shame (2) and as complying with external guidelines and authorities, especially under the threat of punishment (1). The CAS has been found to be negatively associated with individuation, self-esteem, extraversion, and emotional stability (9), and positively with perfectionism (9) and maladaptive social behavior (3). In contrast, acquisitive self-presenters are self-confident (1), and the RSMS correlates positively with individuation, self-esteem, extraversion (9), leadership (10), sales ability (11), self-confidence (12) and work-related social skills (13), and negatively with neuroticism and social anxiety. Self-monitoring thus appears to go hand in hand with social and psychological health, robustness, and adaptation. Based on such claims and findings, it is of interest to extend self-presentation research beyond the fields of social psychology and consumer, advertising and marketing research, to issues related to health and clinical psychology. In this paper we propose a link between protective self-presentation (concern for appropriateness) and eating pathology.

Protective self-presentation is of great potential relevance to eating problems. Pertinent in this context is the relationship established in consumer and marketing research between self-presentation and the degree to which people are influenced by other individuals, by society and by the mass media. More specifically, protective self-presenters have been shown to be particularly influenced by advertisement appeals showing how to avoid social risk (14, 15), to be extremely concerned with the reactions of others, and to have heightened sensitivity to social and cultural influences ranging from interpersonal interaction to mass communication (16, 17). Other pertinent correlates of the CAS are consumer conformity (18), susceptibility to peer pressure (19), and cosmetic use in women (20).

These findings are of particular relevance to eating disordered individuals, who tend to be extremely concerned with others' evaluations of them and sensitive to cues from their social environment about the appropriateness of their behavior and appearance. Eating pathology often begins with exaggerated conformity to current social norms of thinness. Bruch (21) claimed that future anorexics live a life of accommodation and always show early signs

of over-submissive behavior. Claude-Pierre (22) described the anorexic as a social chameleon, lacking a self, "a willow wand buffeted by the winds of others' needs, blowing back and forth in accordance with what she perceives others demand of her". According to self-psychology (23, 24), eating disorder patients feel and behave like selfless souls serving others' needs, which means that they are constantly adapting to external social circumstances. Furthermore, eating disorders have been associated with poor self-esteem (25), perfectionism (26), and maladaptive social behavior (27), which have independently been found to be associated with protective self-presentation (concern for appropriateness). All these arguments point to a likely potential association between protective self-presentation and eating pathology.

Whereas acquisitive self-presenters are also concerned with socially appropriate behavior, we hypothesized that their positive outlook on life, extraversion and high self-esteem would serve to protect them from eating pathology. In addition, a defensive fear of fatness is usually the dominant underlying motive for women to lose weight in the context of eating disorders, rather than a positive, acquisitive desire for beauty. In contemporary Western society, obese women are discriminated against, mocked and labeled as being lazy, unintelligent, unhygienic, incompetent, and lacking in will power (28, 29). This is a clear example of social risk to which protective rather than acquisitive self-presenters have been shown to be particularly sensitive.

Our first objective was to compare the protective and acquisitive self-presentation styles of a group of women with anorexia nervosa (AN) with that of a group of female controls, to test the hypothesis that the former but not the latter would tend to be protective self-presenters and score higher than controls on the CAS but not on the RSMS. We also hypothesized that recovery from AN would be accompanied by a decline in the fearful, defensive protective self-monitoring style. Even stable personality traits tend to change to some extent with changing levels of psychopathology, and recovery from AN is often accompanied by a regression to the mean of levels of personality traits underlying with the disorder (30-33). We therefore expected the scores of women recovering and recovered from AN to fall intermediately between those of the currently ill group and the controls.

Our second objective was to examine the hypothesis that protective self-monitoring would be positively associated with the degree

of disordered eating in women, and that this association would be mediated by sociocultural attitudes towards appearance. Since protective self-presenters are more sensitive than other individuals to social risk avoidance messages, we assumed that the messages to which they are sensitive would include the message that women should be thin and not fat, transmitted on multiple levels in Western society (34). "All cultures that have eating disorders have the thin ideal", writes McCarthy (35), "further, no culture that does not have the thin ideal has eating disorders". We tested this mediation hypothesis in two independent samples, a group of women with a current or past Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV) diagnosis of AN and a large control sample of women with no history of an eating disorder.

METHODS

Participants

Five hundred and seventy-three females aged 14-36 participated in the study. They were a subset of women participating in a larger study on the genetics of AN and comprised two groups:

- 1) Two hundred and ten women with a current or past DSM-IV diagnosis of AN, mostly students, recruited from the community via announcements in newspapers, on the internet and on college campuses. Three hundred and twenty-two women were initially screened by telephone for past or present anorexic symptoms by the first author. Full DSM-IV criteria for a lifetime diagnosis of AN were subsequently confirmed for 219 of them by two psychologists (first two authors), using the eating disorders section of the Structured Clinical Interview for DSM-IV (SCID-IV) (36). Even though we relied on self-reported clinical information, SCID-based current and lifetime diagnoses of AN have been shown to be highly reliable (37). An expanded version of the eating disorders section was used to determine recovery status according to current AN symptomatology. Ten women whose current recovery status was unclear because they were suffering from bulimia nervosa were excluded from the first, but not the second analysis. A further nine were excluded because of a lack of consensus on their recovery status. For the first analysis, the remaining 200 women were stratified into three subgroups as follows:
 - a) seventeen women with a current diagno-

sis of AN: these women strictly fulfilled all DSM-IV criteria for AN at the time of participation in the study;

- b) one hundred and ten women partially recovered from AN: these women weighed above 85% of expected weight for height and age and/or had been menstruating regularly for at least three months. However, they had lingering bingeing/purging symptoms (not severe enough to warrant a diagnosis of bulimia nervosa) and/or obsessions about food, and/or fear of weight gain;

- c) seventy-three women recovered from AN: recovery was defined as weight above 85% of expected weight for height and age, regular menstruation for three months at least (unless birth control pills were taken), no regular bingeing or purging symptoms for at least eight consecutive weeks.

- 2) The 374 control women with no history of an eating disorder, mainly students, were recruited via announcements on college campuses and by word of mouth. These women were screened for a possible history of an eating disorder. The following criteria were noted as possible indicators of eating disturbance: a body mass index (BMI, kg/m²) of under 17.5 or over 30 currently or since reaching current height, an ideal BMI of under 17.5, amenorrhea, an Eating Attitudes Test-26 (EAT-26) score of above 20 (38), and body dissatisfaction scores in the highest 10% of all female participants in the original genetic study [N=1126; Eating Disorders Inventory (EDI) body dissatisfaction score >38, items scored 0-5]. Respondents were also asked whether "eating has ever been problematic or a source of distress for you" and the responses of those replying in the positive were examined. Women who described symptoms compatible with eating disorders, or who fulfilled at least one of the other criteria above, were contacted and interviewed with the SCID-IV. Those for whom a lifetime diagnosis of the full clinical syndrome of AN was confirmed were transferred to the AN group. Those with a lifetime diagnosis of bulimia nervosa or eating disorder not otherwise specified, including subthreshold AN (all criteria except amenorrhea or body weight under 85% of ideal weight) and subthreshold bulimia nervosa (frequency of bingeing and purging under twice a week for three months), and those who refused to be interviewed were excluded.

Demographic data for the above groups is shown in Table 1 and clinical data for currently ill, partially recovered and recovered AN women is presented in Table 2.

TABLE 1
Group comparison of demographic variables.

	AN1 (N=17) M (SD) or %	AN2 (N=110) M (SD) or %	AN3 (N=73) M (SD) or %	FC (N=374) M (SD) or %	Group differences F or χ^2 (p)
Age	23.00 (2.94)	22.95 (4.38)	23.73 (3.44)	21.68 (4.01)	F=7.23 (<0.001) C<AN2=AN3*
Mother's education	2.94 (0.90)	2.78 (1.09)	2.82 (1.00)	2.94 (0.95)	F=0.85 (0.47) AN1=AN2=AN3=C*
Father's education	3.00 (0.94)	2.97(1.19)	2.84 (1.03)	3.00 (1.04)	F=0.47 (0.70) AN=AN1=AN2=C*
Body mass index	16.82 (0.98)	19.97 (2.15)	21.50 (1.97)	21.28 (2.29)	F=18.51 (<0.001) AN1<AN2<(AN3=C)*
% married	0	8.3	10.0	7.5	$\chi^2=6.30$ (0.39) AN1=AN2=AN3=C

*The group comparisons are a summary of a series of bi-group contrasts. Group means are described as equal if $p \geq 0.05$, and unequal if $p < 0.05$.

AN1: women with a current DSM-IV diagnosis of AN; AN2: women partially recovered from AN; AN3: women recovered from AN; FC: female controls with no history of an eating disorder.

Parental education: 1: primary school; 2: high school; 3: BA; 4: MA; 5: PhD.

Instruments

- 1) The 20-item CAS (3) measures a passive and withdrawn social orientation characterized by a fear of being different or standing out. It consists of a 7-item Cross-Situational Variability subscale with items such as "I tend to show different sides of myself to different people" and a 13-item Attention to Social Comparison Information subscale comprising items such as "I try to pay attention to the

reactions of others to my behavior in order to avoid being out of place" and "The slightest look of disapproval in the eyes of a person with whom I am interacting is enough to make me change my approach". A 6-point format was used following the recommendation of Lennox and Wolfe, anchored from 0 = strongly disagree to 5 = strongly agree (3). The CAS is internally consistent, with coefficient alpha values ranging from 0.82 to 0.89,

TABLE 2
Comparison of clinical variables across recovery status in women with anorexia nervosa (AN).

	AN1 (N=17) M (SD)	AN2 (N=141) M (SD)	AN3 (N=46) M (SD)	Group differences F (p)
Age of onset	14.70 (2.31)	15.59 (2.59)	15.42 (2.14)	0.88 (0.42) AN1=AN2=AN3
Severity of restrictive symptoms*	12.40 (3.00)	13.14 (2.26)	12.61 (2.35)	1.34 (0.27) AN1=AN2=AN3
Severity of bingeing and purging symptoms*	6.47 (5.96)	7.01 (5.77)	4.98 (5.24)	2.57 (0.08) AN1=AN2=AN3
Minimum body mass index	13.74 (1.89)	15.13 (1.74)	15.35 (1.25)	6.27 (0.002) AN1<(AN2=AN3)
Severity of history of depression	3.17 (1.34)	2.04 (1.82)	2.09 (1.55)	0.70 (0.50) AN1=AN2=AN3
Number of other DSM-IV psychiatric diagnoses (lifetime)	2.33 (2.23)	2.83 (2.86)	2.64 (2.36)	0.28 (0.76) AN1=AN2=AN3
Years of illness (all 4 DSM-IV criteria)	6.45 (4.16)	2.92 (2.30)	2.17 (1.45)	21.87 (<0.001) AN1>AN2>AN3

The group comparisons are a summary of a series of bi-group contrasts. Group means are described as equal if $p \geq 0.05$, and unequal if $p < 0.05$.

*Scores based on answers to specific questions in interview.

AN1: women with a current DSM-IV diagnosis of AN; AN2: women partially recovered from AN; AN3: women recovered from AN.

and shows construct validity (39) and test-retest reliability (7). In this study Cronbach's alpha was 0.87.

- 2) The RSMS (3) measures an outgoing, active and flexible approach to social interaction. It consists of a 7-item Ability to Modify Self-Presentation subscale with items like "I have the ability to control the way I come across to people, depending on the impression I wish to give them", and a 6-item Sensitivity to the Expressive Behavior of Others with items like "In conversations, I am sensitive to even the slightest change in the facial expression of the person I'm conversing with". A 6-point format was used as for the CAS. The RSMS has been shown to have sound properties (40), and reasonable internal consistency (41, 42) and test-retest correlations (8). In this study Cronbach's alpha was 0.84.
- 3) The EAT-26 is a 26-item self-report factor-analytically derived scale, validated on a sample of 160 women with eating disorders and 140 female nonclinical controls (43), assessing disturbed eating attitudes and behaviors. This is an abbreviated version of the original EAT-40 (44), which correlates very highly with the original scale ($r=0.98$) (43) and is widely used as a screen for eating disorders. The three subscales of the EAT-26 are Dieting (for example, "I am preoccupied with a desire to be thinner"), Bulimia (for example, "I vomit after I have eaten"), and Oral Control (for example, "I take longer than others to eat my meals"). Scoring for screening purposes is on a 6-point Likert scale with answers ranging from "never" to "always". The three least frequent categories ("never", "rarely" and "sometimes") are scored 0, "often" 1, "usually" 2 and "always" 3. While a high score on the EAT-26 is not necessarily an indication of a clinical eating disorder, Garner et al (38) found that 83.6% of cases based on a cutoff point of 20 were correctly classified. For the purpose of analyses, answers were scored from 0 to 5, to increase variance. The EAT-26 has demonstrated excellent reliability in previous studies and in this study the Cronbach's alpha was 0.93.
- 4) The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) (45) is a valid and reliable instrument developed to assess the importance of appearance and the thin ideal and to index specific aspects of a societal influence on body image and eating disorders. In this study, Smolak's version for use with female adolescents was used (46). Item 14 was omitted since it was deemed culturally inappropriate and has been found to lower reliability (46). Responses were

recorded on a 5-point Likert scale. The SATAQ has an Awareness subscale, assessing recognition of societal attitudes towards appearance (for example, "Most people believe that the thinner you are, the better you look"), and an Internalization subscale, assessing the degree of personal acceptance of these attitudes (for example, "I wish I looked like a swimsuit model"). The SATAQ has been found to be associated with eating-related symptomatology in clinical and non-clinical populations (46, 47) and to be a powerful predictor of eating disorders (48). The internal reliability in this study was 0.90.

Translation of instruments

The Hebrew translation of the EAT-26 (49) has been used widely in Israel for research and for clinical purposes. The CAS, RSMS and SATAQ were translated into Hebrew from English by a Hebrew mother tongue psychologist with an excellent knowledge of English, and professionally edited. Every effort was made to preserve both the overall meaning and the nuances of the original English sentences. An independent English mother tongue psychologist with an excellent knowledge of Hebrew then back-translated the scales and minor discrepancies were discussed and resolved. The Hebrew versions of these scales are available on request from the first author.

PROCEDURE

All respondents who reported a history of AN and those who screened positively for a history of an eating disorder were interviewed as explained above. All participants completed a demographic questionnaire, the EAT-26, the CAS, the RSMS and the SATAQ. Both studies were approved by the Israeli Ministry of Health Genetics Committee and the Ethics Committee of the Hebrew University of Jerusalem. All participants signed informed consent forms after receiving a full explanation about the research.

RESULTS

Between group comparisons

T-tests comparing the CAS, RSMS and EAT-26 scores of women with a history of restricting AN with scores of women with a history of bingeing/purging AN were insignificant at the 0.05 level, indicating that CAS, RSMS and EAT-26 scores did not differ between the AN subtypes.

A multiple analysis of covariance (MANCOVA)

TABLE 3

Comparison of CAS, RSMS and EAT-26 scores across recovery status in women with anorexia nervosa (AN).

	AN1 (N=17) M (SD)	AN2 (N=141) M (SD)	AN3 (N=46) M (SD)	FC (N=374) M (SD)	Group differences F (p)
CAS	64.29 (14.03)	56.09 (13.84)	54.93 (12.82)	51.99 (12.02)	7.21 (<0.001) AN1>(AN2=AN3)>FC)
RSMS	40.76 (11.64)	39.79 (9.13)	40.23 (10.00)	39.40 (8.29)	0.47 (0.71) AN1=AN2=AN3=FC
EAT-26	83.12 (20.29)	68.95 (23.86)	48.90 (24.71)	33.62 (16.57)	126.25 (<0.001) AN1>AN2>AN3>FC

Age and body mass index (BMI) entered as covariates

The group comparisons are a summary of a series of bi-group contrasts. Group means are described as equal if $p \geq 0.05$, and unequal if $p < 0.05$. AN1: women with a current DSM-IV diagnosis of AN; AN2: women partially recovered from AN; AN3: women recovered from AN; FC: female controls; CAS: Concern for Appropriateness Scale; RSMS: Revised Self-Monitoring Scale; EAT-26: Eating Attitudes Test-26.

was run entering group status (current AN, partial recovery from AN, full recovery from AN, female controls) as the fixed factor, and CAS, RSMS and EAT-26 scores as dependent variables. Age and BMI, which varied across group status, were entered as covariates.

Neither BMI nor age had a significant effect on CAS, RSMS, or EAT-26 scores. As predicted, a MANOVA revealed significant between-group differences for the CAS and the EAT-26, but not for the RSMS. As expected, the women with a current diagnosis of AN scored highest on the CAS, the control women scored lowest, and the recovering and recovered women scored intermediately between them. EAT-26 scores were highest in the currently ill AN group, significantly lower in the partially recovered AN group, significantly even lower in the recovered group and significantly even lower in the female controls (Table 3).

Mediation hypothesis

The intercorrelations between the CAS, SATAQ, EAT-26, age and BMI in the total sample, within the group of female controls, and within the group of women with a lifetime DSM-IV diagnosis of AN are presented in Table 4.

We tested the hypothesis, in the control group and the AN group separately, that SATAQ scores mediate the effect of the CAS scores on EAT-26 scores. A mediator is a variable that explains how or why another variable affects the outcome (50) and often helps to conceptualize and explain the nature of the relationships among three or more variables. Statistical approaches to the analysis of mediation have been discussed extensively in the psychological literature (51-55). The following conditions, required to demonstrate mediation (53), were shown to hold in both samples (Fig. 1):

TABLE 4

Intercorrelations of the CAS, SATAQ, EAT-26, age and BMI in the total sample (N=684), within the group of female controls (N=360), and within the group of women with a lifetime DSM diagnosis of AN (N=210).

	SATAQ Total (FC,AN)	EAT-26 Total (FC, AN)	Age Total (FC, AN)	BMI Total (FC, AN)
CAS	0.42** (0.42**, 0.53**)	0.28** (0.22**, 0.36**)	-0.06* (-0.08, -0.12)	-0.02 (-0.03, -0.03)
SATAQ		0.58** (0.46**, 0.56**)	0.5 (-0.02,-0.06)	0.00 (0.07, 0.14*)
EAT-26			0.04 (-0.04, 0.08)	-0.03 (0.19**, -0.13)
Age				0.2** (0.32**, 0.01)

*Correlations significant at $p < 0.05$ (all other correlations significant at $p < 0.01$). **Correlations significant at $p < 0.01$ (all other correlations significant at $p < 0.01$). CAS: Concern for Appropriateness Scale; SATAQ: Sociocultural Attitudes Towards Appearance Questionnaire; EAT-26: Eating Attitudes Test-26; FC: female controls; AN: women with a lifetime DSM-IV diagnosis of AN; BMI: Body mass index.

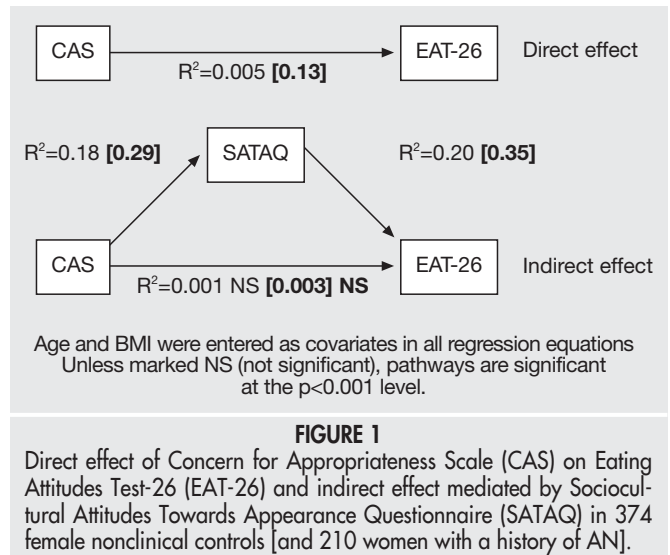
1. the regression path from the CAS to the EAT-26 was significant in the AN group ($df=209$, $F=29.96$, $p<0.001$) and the control group ($df=373$, $F=19.09$, $p<0.001$). Approximately 13% and 5% of the variation in EAT-26 scores respectively were explained by CAS scores;
2. the regression analysis predicting the SATAQ with the CAS was significant both in the AN group ($df=209$, $F=84.38$, $p<0.001$) and the control group ($df=373$, $F=81.38$, $p<0.001$). About 29% and 18% of the variation in the SATAQ were explained respectively by the CAS;
3. the regression analysis predicting the EAT-26 with the SATAQ was significant in the AN group ($df=209$, $F=108.95$, $p<0.001$) and the control group ($df=373$, $F=95.24$, $p<0.001$). About 35% and 20% of the variation in the EAT-26 was explained respectively by the SATAQ;
4. when both the CAS and the SATAQ were used to predict EAT-26 scores, the regression analysis was significant overall in the AN group ($df=209$, $F=29.07$, $p<0.001$) and in the control group ($df=373$, $F=29.5$, $p<0.001$). Respectively, about 36% and 24% of the EAT scores were explained by the CAS, SATAQ, BMI and age together. Whereas the regression coefficient for the SATAQ was significant in the AN sample ($df=209$, $F=69.54$, $p<0.001$) and in the control sample ($df=373$, $F=72.8$, $p<0.001$), the coefficient for the CAS was not significant in either sample (AN group: $df=209$, $F=0.68$, $p=0.41$; control group: $df=209$, $F=0.49$, $p=0.49$). Had the path between the CAS and the EAT-26 been significantly reduced to a value significantly different from 0, the SATAQ would be said to partially mediate the relationship between the CAS and the EAT-26. However, the path between the CAS and the EAT-26 was reduced to a value not significantly different from 0, and can therefore be said to fully mediate the relationship between CAS and EAT-26 scores in both groups, as hypothesized.

Age and BMI were entered as covariates in all the above regression analyses.

We tested for significance between the regression coefficients of the two samples for each of the above regression analyses, by dividing the difference in the standardized correlations by the standard error,

$$\sigma_{Z_1 - Z_2} = \sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}}$$

The z-value did not reach significance for any of the differences between regression coeffi-



icients. So whereas the absolute value of all regression coefficients was larger in the AN group than in the control group, none of these differences were statistically significant.

Finally, the Sobel test (56) was significant in the AN group ($t=6.19$, $p<0.001$) and in the control group ($t=6.24$, $p<0.001$), indicating that the mediation pathway was highly significant in both samples.

DISCUSSION

We found that women with AN displayed a more protective self-presentation style than control women with no history of an eating disorder, and that partially and fully recovered from AN fell between these two groups. The groups did not differ significantly in their levels of acquisitive self-presentation. One possible interpretation of these results is that a protective self-presentation style is a risk factor for AN and declines with recovery. Since levels of self-esteem (32), novelty seeking and reward dependence (31) have been shown to increase and levels of harm avoidance and persistence (31) to decrease with recovery from AN, it is certainly possible that the level of protective self-presentation, also associated with the disorder, decreases.

However, we do not know the recovered women's level of protective self-presentation prior to the onset of AN and at the beginning of their illness. The group of currently ill women had a significantly lower minimum BMI than the other groups and length of illness was negatively associated with recovery level. The recovered women may therefore have dis-

played lower initial levels of protective self-presentation than the women who had not recovered, with lower levels predictive of a good prognosis.

We found further that a protective self-presentation style was significantly and positively associated with disordered eating attitudes and behavior, both in a group of women with a current or past DSM-IV diagnosis of AN and in a group of control women with no history of an eating disorder. Once again, the cross-sectional nature of our data limits interpretations of these results, since we are unable to declare a direction of causality between the variables.

However, in women both with and without a history of AN, the association between protective self-presentation and disordered eating was fully mediated by sociocultural attitudes towards appearance. The assumption that the endorsement of the prevailing cultural thin ideal emerges first and subsequently leads to eating problems is intuitive and underlies the entire literature on the sociocultural causes of eating disorders. In the lack of prospective, longitudinal research, we will therefore assume this developmental chronology. The most plausible interpretation is therefore that women concerned with social appropriateness (protective self-presenters) tend to endorse, *inter alia*, prevailing cultural attitudes towards appearance, including the importance of being thin. The endorsement of the thin ideal in turn predisposes them to disturbed eating attitudes and behaviors, and presumably in extreme cases to AN. Our results certainly support this interpretation, which provides the basis for the continuation of our discussion.

Young women often set themselves the goal of trying to transform their bodies to match the thin ideal (57), and the awareness and internalization of the slim ideal has been a major focus in eating disorders research over the past decade (47, 58, 59). Stice et al. (58) suggested that sociocultural attitudes towards appearance may mediate the effect of other factors associated with weight loss efforts. We propose one such variable is a protective self-presentation style of social behavior, which is associated with a general tendency to be influenced by interpersonal messages.

What counts as a desirable, socially “appropriate” identity varies sharply from one cultural-historical setting to another (60). In contemporary westernized societies, a steady diet of stereotyped thin images persists in the media, which motivates many women to strive for thinness. This no doubt plays a role in promoting body dissatisfaction (57, 61) and in triggering dieting and pathogenic weight control

practices (58, 62, 63). However, some studies have failed to find a significant correlation between media exposure and attitudes towards weight, body image and eating (64-66). Our results fit in with a body of research detailing the influence of media beyond simple exposure. Not all women exposed to the media are similarly influenced by the messages to which they are exposed. Women concerned with appropriateness (protective self-presenters) may be more influenced than others by the culturally “appropriate” body shape, motivating them to take health-compromising measures in their attempts to attain it.

Media influences, however, constitute only one level of transmission of sociocultural messages. The interpersonal influence of significant others such as friends, educators, family, peers and coaches is also considerable. For example, appearance-related negative verbal commentary, or teasing, has consistently been shown to be related to disturbed eating attitudes and behavior in adolescent and adult samples (67-71). Moreover, covariance structure modeling and prospective studies suggest that teasing may be causally related to the onset of body image and eating disturbances (72, 73). Teasing, especially by family members, also increases the risk of developing a clinical eating disorder (74-77). We suggest that the objective level of teasing and negative comments may predict eating disorder symptomatology less than the manner in which comments are perceived, internalized and interpreted by the individual. Protective self-presenters may be more sensitive than others to weight-related teasing.

Although young girls may be aware of the adult cultural ideal of thinness, this ideal may not become personally relevant until their bodies change to look more like those of adults (78). Adolescence is typically characterized by an intense preoccupation with appearance and identity development, heightening the susceptibility to pressures and influences from the media (79). Teenagers are believed to be among the heaviest users of many forms of mass media, particularly magazines (80). In addition, peer environment and influences play an increasingly important role in adolescence (81). Adolescent girls often talk about dieting and weight issues, and the peer group’s degree of weight concerns influences and predicts a girl’s own behavior (82, 83). Adolescence is a time when girls internalize social messages regarding links between femininity, slimness, and attractiveness and is probably a period of heightened sensitivity to appearance-related comments (84). Adolescence is also the peak

onset period for disordered eating and eating disorders.

According to the Social Comparison Theory (85) people engage in a process of self-evaluation, comparing themselves to others who they believe possess desirable social and cultural traits and engaging in behaviors designed to achieve the desired characteristics. Social comparison processes are central both to the development of a social self-identity and in the cultivation of norms and values related to an “ideal” physical self. However, our results are also compatible with the Social Learning Theory (86), which emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others. Harrison and Cantor (62) suggest that the social cognitive process of modeling serves as the mechanism underlying the relationship between media exposure and eating disorder, by modeling beauty ideals, suggesting the importance of achieving them, and providing instructions on how to lose weight.

From a cross-cultural perspective, it appears that people in individualistic cultures are more concerned with appropriateness than people in collectivist cultures (87, 88). This is in line with the rarity of eating pathology in collectivist societies, beyond the obvious explanation of a lack of westernized media and culture.

Intriguingly, we found an association between a vasopressin receptor AVPR1A promotor region microsatellite and EAT-26 scores (89), as well as an association between the same microsatellite and the CAS (90). Recently, we have confirmed an association between this microsatellite and AN (manuscript in preparation). This suggests that concern for appropriateness may be both environmentally and genetically based and that the vasopressin receptor gene may be contributing risk for AN, at least in part, via concern for appropriateness.

The results of this study have implications for eating disorder prevention programs and therapy, in which protective self-presentation style could be targeted. Concern for appropriateness could be lowered by developing assertiveness, encouraging the courage to differ, and strengthening a sense of self. In addition, eating disorder therapists would do well to be aware of the high concern for appropriateness of most of their patients, whose responses may correspond to perceived “appropriateness” instead of reflecting genuine feelings and needs. Since a protective self-presentation style is mediated by sociocultural attitudes towards appearance, instigating change at this level may be an alternative or additional therapeutic goal. Interventions can be developed to buffer

vulnerable women from the effects of media exposure, to encourage parents and teachers to support healthy attitudes toward body weight, to increase awareness of the impact of comments encouraging dieting and criticizing weight and shape, and to develop skills to counteract such negative social influences (91).

The strengths of our study include large numbers and interview-based diagnoses. Additionally, eating disorder patients typically included in research projects come exclusively from specialized clinics, resulting in biased samples of more seriously compromised individuals (92). The community sample recruited in the current study represents a more representative sample of women with AN (93, 94).

However, we relied to a large extent on subjective self-report measures, which are vulnerable to social desirability. Parameter estimates may therefore be inflated by common method variance. Also, weight and height were reported and not verified. Research has shown that whereas anorexic underweight women report their weights remarkably reliably (95-97), healthy control participants tend to slightly underreport their weight, especially as BMI rises (96, 98). While the correlation between actual weight and reported weight is typically above 0.95 (99), the accuracy of self-reported weight may well vary slightly across groups. Another limitation of this study is that it did not examine to what extent a protective self-presentation is specific to AN by including a psychiatric control group. However, since the SATAQ has been examined almost exclusively in research on disordered eating and eating disorders, its mediation of the association between protective self-presentation and disordered eating is likely to be specific to eating disorders.

Prospective studies are lacking in eating disorders research, but self-presentation style could and should be included in such research, to identify or negate protective self-presentation as a risk factor for disordered eating and for AN. Future research should also address the role of protective self-presentation in body dissatisfaction and in bulimia nervosa, binge-eating disorder, and eating disorders in males. Further research on protective self-presentation style stands to contribute much towards a much-needed “translation of the social psychology of how certain groups perceive media ads or public health messages with regard to overeating or undereating, or how certain media campaigns could be evaluated for their effectiveness in reducing eating disorders” (100).

In summary, we propose that girls and women are not equally affected by sociocultural mes-

sages. Protective self-presenters may tend, more than others, to be aware of and to internalize the message that being slim is praiseworthy and being fat is condemnable, rendering them susceptible to eating disorders. This line of thought stands to contribute to our understanding of the awareness and internalization mechanisms of sociocultural attitudes towards appearance, to the treatment of eating disorders, and to prevention programs and campaigns.

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