

Inner Body and Outward Appearance: The Relationships Between Appearance Orientation, Eating Disorder Symptoms, and Internal Body Awareness

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This study investigated the associations of appearance orientation and eating disorder symptoms with internal body awareness in an eating-disordered group of women and a general sample of women. In the eating-disordered group, appearance orientation was positively associated with internal body awareness. Eating disorders symptoms were negatively related to the awareness of bodily signals. No significant associations were found in the general sample of women. The results indicate that in eating-disordered individuals preoccupation with the body and eating-disordered behaviors are not only negatively associated with hunger, but with awareness of other bodily signals as well.

Various authors have assumed that in Western cultures women experience sexual objectification of the outward body (e.g., Bartky, 1990; Franzoi, 1995; Fredrickson & Roberts, 1997). This objectification reflects that one is treated as a body and not as an individual (Fredrickson & Roberts, 1997). Because attractiveness in women functions as a prime currency for women's social and economic success (Fredrickson & Roberts, 1997), many women evaluate their physical appearance against the culture's female beauty ideal. However, because the Western standards of feminine beauty are unrealistic,

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dissatisfaction with the outward body and dietary restraint have become critical parts of many women's lives (Field et al., 2001; Stice & Shaw, 2002).

According to the objectification theory, this habitual monitoring of outward appearance and dieting has several negative consequences. One of these consequences is that less attention is paid to internal physiological sensations. First, the focus on physical appearance might lead to fewer perceptual resources available for attending to inner bodily signals (Fredrickson & Roberts, 1997). In general, people make judgments about bodily signals by relying on a variety of information sources, some of which originate within the body, whereas others are gathered from external contextual sources (Roberts & Pennebaker, 1995). However, when external cues are interesting but not associated with internal bodily signals, these cues can lead the attention away from these signals (Pennebaker, 1982; Van Wijk & Kolk, 1996). This is because individuals are limited in the amount of information that can be processed, resulting in a selection of information (Pennebaker, 1982). The objectification theory posits that girls and women may come to view themselves to some degree as objects or "sights" to be appreciated by others. As a result, this focus on the outward body, as a distracting cue, might lead to fewer perceptual resources for attending to the inner body (Fredrickson & Roberts, 1997). Second, dieting can have a negative influence on the awareness of inner bodily signals due to the fact that restrained eating requires active suppression of hunger cues. This may lead to a generalized insensitivity to internal bodily cues when dieting becomes an important effort to achieve or maintain a slim body ideal (Heatherton, Polivy, & Herman, 1989; Polivy, Herman, & Pliner, 1990). When appearance orientation and dietary restraint indeed are distracting cues, negative associations can be expected between appearance orientation and bodily signals as well as between eating-disordered attitudes and bodily signals. Bekker, Croon, and Vermaas (2002) studied the associations between appearance orientation and body awareness in non-clinical female students. In contrast to expectations, they found that appearance orientation was positively associated with internal body awareness. It might be that the homogeneous nature of the sample played a role in determining the direction of the relationship. Therefore, in the present study we examined the relationship in a more heterogeneous, general sample of women. It could be that only eating-disordered individuals, suffering from an obsession with their outward appearance, experience their outward body as an outside object competing for attention with inner body signals, while non-eating-disordered individuals experience their outward and inner body as a unity. As a consequence, it might be expected that in the general sample of women there is a positive relationship between appearance orientation and body awareness, while this relationship is negative in eating-disordered individuals. Therefore, the second aim of the present study was to scrutinize these relationships in eating-disordered women as well. A third explanation for the outcome of

the Bekker et al. (2002) study could be that appearance orientation per se is not negatively related to the inner body, but eating disordered symptoms, like restrained eating, are. Indeed, various authors have found negative relationships among eating-disordered cognitions, eating-disordered behavior, and lack of awareness of hunger and satiety in eating-disordered individuals (e.g., Halmi & Sunday, 1991; Koch, Bingaman, Tan, & Stern, 1998; Rolls et al., 1992). However, it is unknown whether other bodily signals (e.g., awareness of sleep, fever) are also negatively related with eating-disordered cognitions and behaviors. Furthermore, it is not known whether eating disorder symptoms are negatively related with internal body awareness in non-clinical women. Therefore, our third aim was to investigate the relationships between eating disorder symptoms and various bodily signals in eating-disordered women as well as in a sample of women representing the general population.

First, it was hypothesized that in the general sample of women the outward body and inner body are experienced as a unity. Consequently, it was expected that appearance orientation and body awareness would be positively associated with each other. Second, it was postulated that the focus of eating-disordered women on the outward body would be negatively related to the awareness of inner bodily signals. Third, it was hypothesized that in eating-disordered women, eating disorder symptoms would be negatively associated with various bodily signals and not only with hunger and satiety. We also supposed that there would be a negative relationship between eating disorder symptoms and body awareness in the general sample of women. However, due to low scores of this group on eating disorder symptoms, this relationship might be weak. We controlled for somatisation, symptom perception, and external information as these variables have proven to be related with internal body awareness (Bekker et al., 2002; Van Wijk & Kolk, 1996).

METHOD

Procedure

A random sample of the Dutch population was approached by means of random phone calls. From each letter of the alphabet several people with a surname beginning with this letter were called and asked to participate. Of the 878 people that were called, 518 agreed to participate, a 59% response rate. Questionnaires were mailed to them and completed questionnaires were returned by mail. Furthermore, a group of 153 eating-disordered women were recruited via Dutch (specialized) institutes. Of the 153 eating-disordered individuals that were recruited, 118 participated, a 76% response rate. Questionnaires were given to these participants by the therapist. Completed questionnaires were sent back by mail. Inclusion criteria were age ≥ 18

and a diagnosis by a clinical specialist of anorexia nervosa, bulimia nervosa, binge eating disorder, or eating disorder not otherwise specified.

Participants

From the 518 people, there were 373 women (mean age = 39.0 years, $SD = 12.7$). They varied in age, occupation, family composition, and place of residence. Nearly all respondents were born in The Netherlands (98%). The eating-disordered sample consisted of 25 women with anorexia nervosa (AN) (mean age = 25.5 years, $SD = 7.5$), 38 women with bulimia nervosa (BN) (mean age = 26.3 years, $SD = 7.27$), 36 women with binge eating disorder (BED) (mean age = 36.1, $SD = 11.57$), and 12 women with eating disorder not otherwise specified (EDNOS) (mean age = 31.5, $SD = 10.1$). Of seven women, the diagnosis was unknown due to anonymous participation. Diagnoses were based on *DSM-IV-TR* criteria (American Psychiatric Association, 2000).

Measures

Appearance orientation was measured by the 12-item Appearance Orientation subscale of the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990; Bekker et al., 2002). This subscale measures the relative importance of aspects of body image, attention to these aspects, and frequency of showing behavior aimed at maintaining or improving outward appearance. The items are rated on a five-point Likert scale (ranging from 1, Definitely Disagree, to 5, Definitely Agree). Cronbach's alpha coefficients were .85 and .87 for the eating-disordered sample and the general sample, respectively.

The Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994; Van Furth, 2000) was used in order to measure eating disorder symptoms. There are four subscales (Restraint, Eating Concern, Shape Concern, and Weight Concern) and seven items measuring the frequency of key behaviors. A global score reflects the average of the four subscales. The items are rated on seven-point rating scales ranging from 0, reflecting 0 Days, to 6, corresponding with 28 Days. Cronbach's alpha coefficients were .74 and .93 for the eating-disordered sample and the general sample, respectively.

Internal body awareness was measured with the 25-item Somatic Awareness Questionnaire (SAQ; Van Wijk & Kolk, 1996). The SAQ assesses the tendency to be aware of or sensitive to internal bodily processes and states that are not typically associated with either illness or particular emotional states. Items are rated on 5-point Likert scales ranging from 1, Never, to 5, Always. The wide variety of bodily signals led us to the assumption that this questionnaire might be multi-faceted. Principal axis factoring and

subsequent inspection of the Scree plot suggested a 2-factor solution, explaining 32.9% of the variance: Internal Body Awareness Anticipation (12 items) reflecting anticipation of bodily signals and the ability to make distinctions between these bodily signals. Factor 2, Internal Body Awareness Noticing (13 items), reflects the ability to notice various bodily signals. Within the eating-disordered group, Cronbach's alpha's were .81 and .71, respectively. Within the general sample of women, Cronbach's alpha's were .83 and .79, respectively.

The Somatic Interpretation Questionnaire (SIQ; Robbins & Kirmayer, 1991; Van Wijk & Kolk, 1996) was used for measuring somatization. The SIQ consists of 13 common physical symptoms, each followed by a somatic, a psychological, and an external cause. Items are rated on four-point Likert scales (ranging from 1, Not At All, to 4, A Great Deal). Cronbach's alpha's were .83 and .85 for the eating-disordered group and general sample of women, respectively.

Symptom perception was measured by the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982; Van Vliet, 1992). The PILL measures the occurrence and frequency of common symptoms and sensations, rated on a five-point Likert scale (ranging from 1, Never, to 5, Very Often). Cronbach's alpha coefficients were .90 and .89 for the eating-disordered sample and the general sample, respectively.

The External Information Questionnaire (EIQ; Van Wijk, 1995) was used to measure the degree and diversity of external information. Items are rated on five-point Likert scales ranging from 1, Completely Disagree, to 5, Completely Agree. Cronbach's alpha coefficients were .73 and .67 for the eating-disordered sample and the general sample, respectively.

Statistical Analysis

We used Box's test to test the heterogeneity of the two groups. It appeared that the value of Box's test was significant ($p < .001$) indicating that the covariance matrices are significantly different and violating the homogeneity assumption. Furthermore, the average age found in the general sample was significantly higher compared to the average age found in the eating-disordered sample. Age might be negatively related with eating disorder symptoms and appearance orientation in the general sample of women. In order to decide whether age has to be controlled in the latter sample, Pearson product-moment correlations were computed between age and appearance orientation as well as between age and the total score on the EDE-Q. Age appeared to be significantly correlated with the total score on the EDE-Q ($r = -.13$, $p < 0.01$), but not with appearance orientation. Considering the significant, but moderate, correlation found between age and the total score on the EDE-Q and the non-significant correlation between age and appearance orientation, we decided not to control for age in the general sample.

First, mean scores were analyzed with *t*-tests. In addition, in the eating-disordered group, the total scores per eating disorder diagnosis were analyzed with *t*-tests and post-hoc (Scheffé) ANOVAs in order to see whether there were differences in scores on the variables between the four groups (AN, BN, BED, EDNOS). Second, bivariate correlations among the independent variables were calculated. Third, in order to test the relationships between the variables, we used structural equations model analyses (Bollen, 1989). Goodness of fit measures used were: the Chi square test χ^2 , the Root Mean Square Error of Approximation (RMSEA), and the Comparative Fit Index (CFI).

RESULTS

Mean Scale Differences

Means and standard deviations for each (sub)scale for both groups plus the *t*-values are presented in Table 1. The results revealed significant differences among the scores of both groups on all (sub)scales. Eating-disordered women scored significantly higher on appearance orientation, eating disorder symptoms, noticing bodily signals, somatisation symptom perception, and external information (all *ps* < .001). The general sample of women scored higher on anticipation of bodily signals (*ps* < .001). Furthermore, simple one-way ANOVAs, followed by the Scheffé method, were conducted to compare the four eating-disordered groups. No significant differences between the groups were found.

PATH ANALYSIS

In order to test our hypotheses, path analyses for the two subscales of body awareness were obtained separately for the two groups. As can be seen in

TABLE 1 Means and Standard Deviations

(Sub)scale	Eating-disordered sample (<i>N</i> = 118)		General sample (<i>N</i> = 373)		<i>t</i> -value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Appearance orientation	3.85	.61	3.42	.62	6.66***
Eating disorder symptoms	3.77	1.08	1.10	.90	26.59***
Body awareness "anticipation"	3.00	.62	3.27	.64	3.41***
Noticing bodily signals	3.17	.50	2.94	.55	5.72***
Somatisation	2.13	.33	2.03	.34	2.49***
Symptom perception	2.61	.53	2.11	.44	10.23***
External information	5.81	.89	4.84	.20	8.08***

Note. **p* < .05; ****p* < .001.

Table 2, several correlations among appearance orientation, eating disorder symptoms, somatisation, symptom perception, and external information were non-significant. Those correlations were fixed to zero within the hypothesized model for each group separately. In addition, it was assumed that the error terms of anticipating and noticing bodily signals were correlated with each other.

The goodness-of-fit measures indicated that the model fitted the data significantly well: eating-disordered women: $\chi^2 (4, N = 118) = 5.61, p = .23$, CFI = 0.99, RMSEA = .06; general sample of women: $\chi^2 (4, N = 373) = 4.33, p = .36$, CFI = 1.00, RMSEA = .02. In order to simplify the model, non-significant path-coefficients were omitted from the model (Mantel, 1970), resulting in a restricted model. This more parsimonious model, presented in Figure 1 and Figure 2, fitted the data in both groups well: eating-disordered women: $\chi^2 (7, N = 118) = 8.16, p = .32$, CFI = 1.00, RMSEA = .04; general sample women: $\chi^2 (11, N = 373) = 10.25, p = .51$, CFI = 1.00, RMSEA = .00. Although in the general sample of women the relationships between appearance orientation and body awareness as well as between eating disorder symptomatology and body awareness appeared to be positive (see Table 2), no significant, direct relations were found between appearance orientation and eating disorder symptoms, on the one hand, and body awareness, on the other hand. Furthermore, inconsistent with our second hypothesis, in the eating-disordered group we found that appearance orientation was significantly positively associated with anticipation of bodily signals ($\beta = .21$), but did not have a significant relation to noticing bodily signals. Consistent with our third hypothesis, eating disorder symptoms were significantly, negatively related with body awareness in the eating-disordered group. That is, higher scores on eating disorder symptoms were negatively related with anticipation of bodily signals ($\beta = -.29$) and noticing bodily signals ($\beta = -.18$). This relationship was not found in the general sample of women.

TABLE 2 Pearson Intercorrelations among the Independent Variables in Eating-Disordered Sample and General Sample

Scale	1	2	3	4	5	6	7
1. Appearance orientation	—	.32***	.09	.12	.07	.06	.06
2. Eating disorder symptoms	.33**	—	.07	.17**	.18***	.25***	.08
3. Anticipating on bodily signals	.19*	-.11	—	.65***	.27***	.18**	.02
4. Noticing bodily signals	.05	.07	.54**	—	.40***	.48***	.11*
5. Somatization	.05	.30**	.13	.48***	—	.44***	.13**
6. Symptom perception	.08	.31**	.07	.57***	.58***	—	.20***
7. External information	-.04	.16	-.15	.15	.42***	.30***	—

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Eating-disordered sample: under diagonal, general sample: above diagonal.

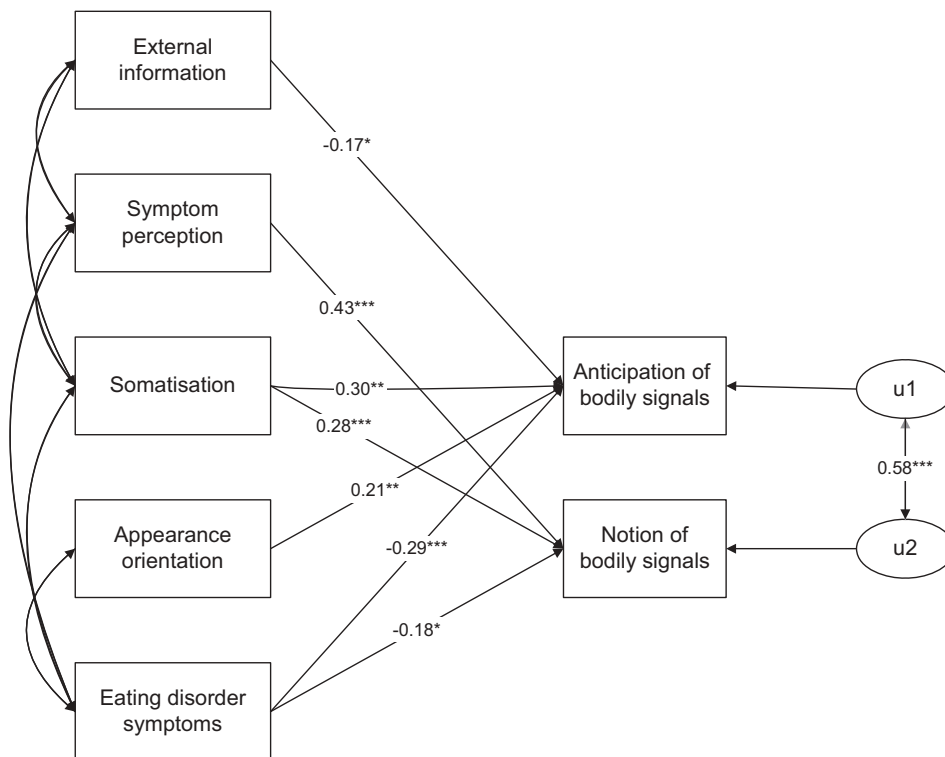


FIGURE 1 Restricted path model for eating-disordered women.

DISCUSSION

The present study was aimed to investigate the relationships of appearance orientation, eating disorder symptoms, and body awareness in a general sample of healthy women and an eating-disordered group of women. Our results showed the associations of appearance orientation and eating disorder symptoms with body awareness, after controlling for somatisation, symptom perception, and external information.

It is important to discuss some limitations of the present study. The principal limitation of this study is its cross-sectional nature, leading to an inability to determine a causal order among the variables. Therefore, future longitudinal studies might provide us with evidence for the direction of the relationships. Furthermore, we only used self-reported measurement instruments, which makes the validity of the findings weaker compared with a broader study in which observational or multiple reporter data also were collected. For example, some people, in particular eating-disordered individuals, may not be able to provide accurate information about bodily

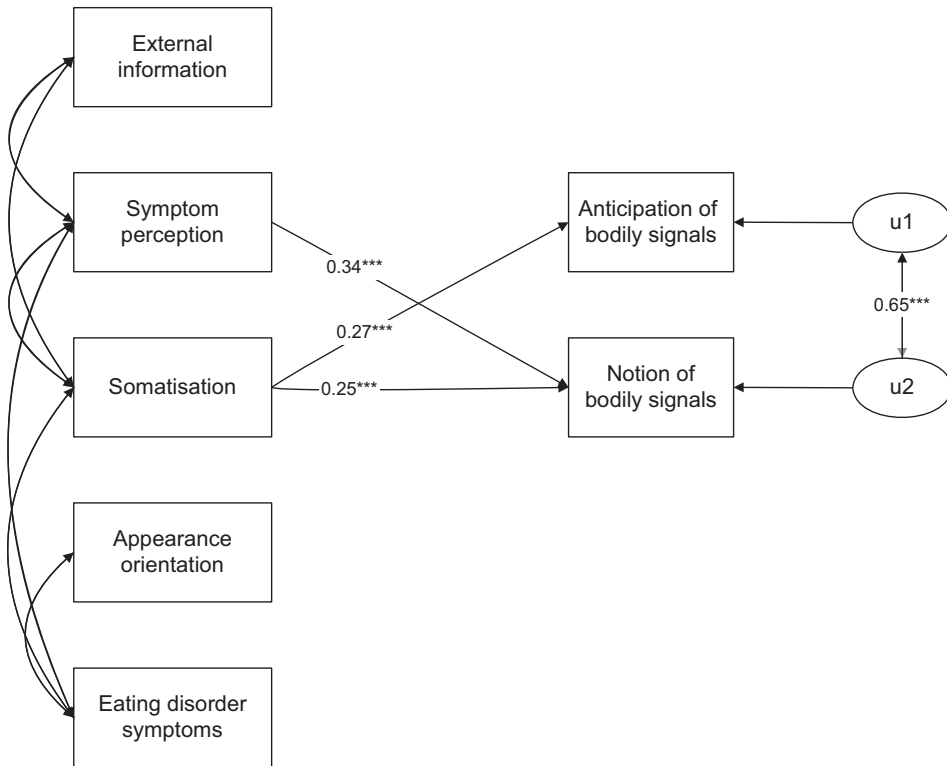


FIGURE 2 Restricted path model for the general sample of women.

signals, because they have difficulty recognizing and expressing these internal states (Vitousek, Daly, & Heiser, 1991). In addition, denial and minimization of symptoms may be deliberate. Various authors have found that denial and minimization of symptoms are common among eating-disordered individuals (e.g., Vitousek et al., 1991). However, because it was announced that no information about the results would be given to the institutes, this last problem was probably not seriously inflicting their answers.

Finally, some remarks regarding generalizability are in order. Because eating disorders are relatively uncommon in the general population, within the present study, eating-disordered women were recruited via several Dutch institutes. However, a potential problem is that patients seeking treatment for their eating disorder differ from eating-disordered women not seeking treatment, for example in severity of symptoms (Field, 2004). Furthermore, the eating-disordered women participated voluntarily and it was not possible to investigate the reasons for non-responding. Selection effects can therefore, not be ruled out. Despite these limitations, the present study enabled us to scrutinize the associations appearance orientation and eating disorder symptoms can have in groups who differ in terms of focus on the outward body and eating-disordered behavior.

Within this study, we found no evidence for the assumption that in the general sample of women, appearance orientation competes with attention for bodily signals. Appearance orientation did not have a negative relation to internal body awareness. Therefore, it seems plausible that appearance orientation does not distract the attention from inner, bodily signals. Second, instead of the expected negative relation in eating-disordered women, we found a positive relation between appearance orientation and anticipation of bodily signals. In addition, in this eating-disordered sample no significant relation was found between appearance orientation and notion of bodily signals. These results indicate that also in this latter sample appearance orientation does not compete with one's attention for inner, bodily signals. In contrary, because of the positive relation found between appearance orientation and anticipation of bodily signals, it might be assumed that the focus on the outward body is positively related to the focus on the inner body.

We found support for the idea that eating disorder symptoms might lead to less body awareness as we found a negative association for the eating-disordered group. So, although the focus on outward appearance itself is positively related with the anticipation on bodily signals, dietary restraint and the strong concerns with food, weight and shape, found in the eating-disordered group, might indeed compete with attention for inner, bodily cues. Another explanation might be that eating-disordered individuals are able to perceive and label internal sensations accurately, but deny the experience of it. This is often posited with regard to the experience of hunger (e.g., Hetherington & Rolls, 2001).

We conclude that appearance orientation and eating disorder symptoms have important relationships with internal body awareness in eating-disordered individuals, but not in a non-clinical group. Second, our findings suggest that the negative relationship found in eating-disordered women between eating disorder symptoms and body awareness is not limited to hunger and satiety, but can be generalized to other bodily signals, like fatigue and energy-level, as well. This can have important implications for the treatment of eating disorders. The present results suggest that it is also important to look at the awareness of other bodily signals.

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