Abnormal Eating and Dissociative Experiences

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A total of 656 male and female college students completed the Eating Disorder Inventory (EDI) and a modified version of the Dissociative Experiences Scale (M-DES). There were significant correlations between dissociative experiences and each of the EDI subscales, especially for women. Even among women, however, dissociation was more strongly related to aspects of ego dysfunction than to abnormal eating per se. This finding sets limits on the hypothesized association between dissociative disorder and eating disorder. © 1995 by John Wiley & Sons, Inc.

Eating disorders and dissociative disorders have been linked since the time of Janet (1907), and with increasing contemporary interest in both kinds of syndromes this connection has been revived (Chandarana & Malla, 1989; Temoshok & Atkisson, 1977; Torem, 1986). However, most of the evidence supporting this connection has been indirect. For example, Russell (1979) noted that many bulimic patients reported feelings of depersonalization and derealization during episodes of binging and purging (see also Abraham & Beumont, 1982; Beumont & Abraham, 1983). Similarly, the bulimic patients surveyed by Torem (1986) frequently reported that their binges were involuntary, and accompanied by an amnesia-like loss of time. A number of investigators have found high levels of hypnotizability in bulimic patients (Covino, Jimerson, Walton, Franko & Frankel, 1994; Kranhold, Baumann, & Fichter, 1992; Pettinati, Horne, & Staats, 1985), or in college women with symptoms of abnormal eating (Barabasz, 1991; Groth-Marnat & Shumaker, 1990)—a finding that is relevant because hypnosis is sometimes considered to involve nonpathological dissociative states (Hilgard, 1977), and because high hypnotizability is also found in patients with dissociative disorder (for a review, see Kihlstrom, Glisky, & Angiulo, 1994). Finally, childhood sexual abuse has been implicated in the histories of patients with both eating disorder (Palmer, Oppenheimer, Dignon,

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A fuller report of this study is available from either author.

Valdiserri and Kihlstrom

Chaloner, & Howells, 1990) and dissociative disorder (for a review, see Spiegel & Cardeña, 1991).

There is, to our knowledge, no study of the comorbidity of eating disorder and dissociative disorder, independently assessed, in a representative sample of the patient population. However, there is some evidence that individuals with eating disorder score high on scales measuring dissociative symptomatology. Thus, Demitrack, Putnam, Brewerton, Brandt, and Gold (1990) found that both anorectic and bulimic inpatients scored higher on the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) than age- and sex-matched normal controls; in general, anorectics scored higher than bulimics. These findings have been confirmed by other investigators (Covino et al., 1994; Goldner, Cockhill, Bakan, & Birmingham, 1991).

A similar pattern may be observable in nonpatients. Sanders (1986) found that college women who reported a tendency toward binge eating scored higher than nonbingers on the Perceptual Alteration Scale (PAS), a measure of dissociative tendencies. Unfortunately, the PAS contains several items relating to body image and abnormal eating (e.g., "My body is too heavy"), and it is not clear whether the group differences observed by Sanders were contaminated by this overlap in content. The present study was intended to gather further data on the relationship between abnormal eating and dissociative experiences in a normal population of college women, using instruments that eliminated the possibility of content overlap.

METHOD

Subjects

A total of 656 university undergraduates (270 men, 386 women) provided data for this study. In return for their participation, the subjects received credit toward the research participation component of their introductory psychology course. The age of the subjects ranged from 16 to 45 (M=18.89, SD=4.69); 84% of the subjects were 17–20 years of age.

Procedure

As part of a routine in-class survey session, the subjects completed a battery of questionnaires, including the original form of the Eating Disorders Inventory (EDI; Garner, Olmstead, & Polivy, 1983) and a slightly modified version of the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986). The two questionnaires were widely separated in the survey packet.

EDI

The original EDI is a 64-item self-report instrument based on the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979; Garner, Olmsted, Bohr, & Garfinkel, 1983). It consists of eight subscales: Drive for Thinness (DT), (lack of) Interoceptive Awareness (IA), Bulimia (BU), Body Dissatisfaction (BD), Ineffectiveness (IE), Maturity Fears (MF), Perfectionism (PE), and Interpersonal Distrust (ID). The scale was administered and scored in the standard manner.

DES

The DES is a 28-item self-report instrument commonly used in screening within clinical populations (Steinberg, Rounsaville, & Cicchetti, 1991; for a review, see Kihlstrom et al., 1994). Subjects indicate the percentage of time that they experience each of 28 aspects of absorption and imaginative involvement, amnesia and other symptoms of dissociation, and depersonalization—derealization. In order to conform more closely to the style of other questionnaires in the survey battery, the wording of the DES items was altered slightly. These modifications have no effect on the reliability of the DES (Angiulo & Kihlstrom, 1993); however, in order to avoid confusion, henceforth the version used in this study will be called the Modified DES (M-DES).

RESULTS

In general, the mean scores on the eight subscales of the EDI, and on the M-DES, were comparable to those in the normative samples reported by Garner (1991; see also Garner et al., 1983; Kihlstrom et al., 1994; Williams, Schaefer, Shisslak, Gronwaldt, & Comerci, 1986). Individual t tests revealed significant (all p < .05) gender differences on several EDI subscales: DT, IA, BU, BD, and ID. There was no gender difference in scores on the M-DES (t = 1.26, n.s.).

Factor Analysis of EDI Subscales

Exploratory factor analysis (varimax rotation) of the EDI subscales yielded three factors with eigenvalues greater than 1, accounting for 74% of the variance: Factor 1, labeled Abnormal Eating (following Polivy & Herman, 1987), consisted of DT, BU, and BD; Factor 2, labeled Ego Dysfunction (following Vanderheyden, Fekken, & Boland, 1988; see also Garner, Olmsted, Polivy, & Garfinkel, 1984; Laessle, Tuschl, Waadt, & Pirke, 1989), consisted of IA, IE, MF, and ID; Factor 3 was a singelton consisting of PE. When the analysis was restricted to two factors, which accounted for 62% of the variance, PE joined the Ego Dysfunction factor. An oblique (direct oblimin) rotation showed that the correlation between the two factors was r=.32 (for other factor analyses, see Welch, Hall, & Norring, 1990; Welch, Hall, & Walkey, 1988).

Abnormal Eating and Dissociative Experiences

Table 1 shows the correlations between each of the standard EDI subscales and total M-DES score. It also shows the correlations involving two superordinate scales created in light of the factor analysis reported above: Abnormal Eating is the sum of the DT, BU, and BD subscales; Ego Dysfunction is the sum of the IA, IE, MF, PE, and ID subscales, employing unit weightings of the items. The highest correlations with M-DES involved those subscales tapping personality attributes putatively correlated with ego dysfunction (especially IA, IE, and MF), rather than expressions of abnormal eating (DT, BU, and BD) per se. Comparing the superordinate Abnormal Eating and Ego Dysfunction scales, the differences between corresponding correlations were significant (p < .01) in all cases: all subjects, t(653) = 4.86; men, t(267) = 3.70; women, t(383) = 2.83.

The factor analysis of the eight EDI subscales was repeated, adding M-DES score as a ninth variable. The unconstrained solution yielded three factors accounting for 69% of the variance: M-DES showed substantial loadings on both Ego Dysfunction and Perfectionism; its loading on Abnormal Eating was negligible. In a solution restricted to two

Valdiserri and Kihlstrom

Table 1.	Correlations	between	EDI	Subscales
and M-DI	ES Score			

Variable	All	Males	Females
Drive for Thinness	.14	01	.26
Interoceptive Awareness	.32	.29	.36
Bulimia 1	.17	.19	.17
Body Dissatisfaction	.08	05	.20
Ineffectiveness	.24	.21	.27
Maturity Fears	.24	.21	.26
Perfectionism	.16	.09	.20
Interpersonal Distrust	.10	.05	.13
Abnormal Eating	.13	01	.25
Ego Dysfunction	.32	.25	.38

Note. For the sample as a whole r=.08 is significant at the p<.05 level; for the male and female subsamples taken separately, the significant values of r are .12 and .10, respectively. EDI = Eating Disorders Inventory; M-DES = modified version of the Dissociative Experiences Scale.

factors, accounting for 58% of the variance, M-DES loaded substantially on Ego Dysfunction but negligibly on Abnormal Eating. The oblique rotation showed that the correlation between the two factors was r = .30.

In order to assess the differential contribution of the various EDI scales to the prediction of dissociative experiences, a series of stepwise multiple regressions were performed. In these analyses, the three EDI subscales representing Abnormal Eating were entered simultaneously in one step, and the five EDI subscales representing Ego Dysfunction were entered simultaneously in another. When the entire group of 656 subjects was analyzed, the package of five Ego Dysfunction variables entered the regression first, yielding a multiple R=.45; the package of three Abnormal Eating variables entered the regression second, raising the R to .47. This pattern, in which Ego Dysfunction accounted for most of the explainable variance in M-DES scores and Abnormal Eating added relatively little, was repeated when separate regressions were performed on the male (first step, R=.40; second step, R=.46) and female (first step, R=.51; second step, R=.52) groups.

Abnormal Eating in Subjects at Risk for Dissociative Disorder

As a rule, individuals with DES scores above 20 (Steinberg, Rounsaville, & Cicchetti, 1990) or 30 (Carlson et al., 1993) are considered to be at risk for dissociative disorder. However, studies of dissociative experiences in college students indicate that a somewhat higher cutoff may be appropriate in this population (for a review, see Kihlstrom et al., 1994). Accordingly, those 67 subjects scoring in the top 10% of the distribution of M-DES scores (29 men, 38 women) were identified, and their scores on the EDI subscales compared to those of the remaining subjects.

Table 2 shows the mean EDI subscale scores, and the mean scores on the superordinate subscales of Abnormal Eating and Ego Dysfunction, for each of these groups, further classified by gender. Separate 2 \times 2 factorial analyses of variance (ANOVAs) of the eight EDI subscale scores yielded the expected gender differences. More to the point, there were significant main effects of M-DES category on each of the scales (all p < .05)

except IT. These were qualified by significant interactions (p < .05) in the cases of DT, BD, MF, and Abnormal Eating. For these four scales, the difference between low and high M-DES groups was much greater for women than for men.

377

Dissociative Experiences in Subjects at Risk for Eating Disorder

It has been suggested that scores greater than 14 (Garner et al., 1984) or 17 (Norring & Sohlberg, 1988) on the EDI DT subscale may identify individuals who are at risk for developing an eating disorder (see also Garner, 1991; Polivy & Herman, 1987). Only 2 such subjects, both women with scores of 15, were identified in this sample. Accordingly, an overall score for Abnormal Eating was calculated by summing the individual scores on the DT, BU, and BD subscales of the EDI, and another overall score for Ego Dysfunction was calculated by summing the IA, IN, MF, PE, and ID subscales. Separate score distributions were constructed for men and women on each variable, and these distributions were further divided at their 90th percentile. This procedure created a 2 \times 2 \times 2 (Gender by Abnormal Eating by Ego Dysfunction) matrix.

Table 3 shows the mean scores on M-DES for the subjects in each cell. A three-way factorial ANOVA with two levels of each factor (gender, male vs. female; Abnormal Eating, high vs. low; and Ego Dysfunction, high vs. low) revealed a significant main effect of Ego Dysfunction, F(1, 648) = 7.70, p < .01. There were no other significant main effects or interactions, although the two-way interaction between Abnormal Eating and Ego Dysfunction, approached conventional levels of statistical significance, F(1,648) = 3.82, p < 10. In particular, the main effect of gender, and the two-way and three-way interactions involving gender, were all nonsignificant. For both men and women, M-DES scores were highest for those subjects who had extremely high scores on Ego Dysfunction, regardless of whether they also had high scores on Abnormal Eating. Among those who had high scores on Ego Dysfunction than for those who did not.

Table 3 also shows the percentage of subjects in each cell who were identified on the basis of their M-DES scores as at risk for dissociative disorder. Here, the picture changes somewhat. For men, the percentage of subjects "at risk" for dissociative disorder is

Table 2.	Mean EDI	subscale scores,	subjects	classified by	y ge	nder and	M-DES score
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	N	lale	Female		
Gender DES Group ^a	Low	High	Low	High	
EDI subscale					
Drive for Thinness	0.95 (1.95)	1.31 (2.12)	3.11 (3.83)	6.37 (4.95)	
Interoceptive Awareness	1.07 (1.66)	2.21 (2.93)	1.52 (2.47)	3.66 (3.50)	
Bulimia [*]	0.37 (1.02)	1.14 (2.53)	0.64 (1.74)	1.47 (2.33)	
Body Dissatisfaction	4.24 (4.75)	4.92 (5.00)	9.69 (7.32)	13.42 (7.31)	
Ineffectiveness	1.42 (2.78)	2.72 (3.47)	1.44 (2.09)	3.73 (4.34)	
Maturity Fears	2.62 (3.02)	4.83 (4.47)	2.37 (2.61)	4.37 (4.41)	
Perfectionism	3.13 (2.64)	4.17 (3.41)	2.93 (2.71)	4.05 (3.22)	
Interpersonal Distrust	3.07 (3.45)	3.41 (3.59)	1.05 (2.76)	3.00 (2.69)	
Abnormal Eating	5.56 (6.48)	7.07 (8.36)	13.45 (10.30)	21.26 (12.77	
Ego Dysfunction	11.32 (8.56)	17.34 (12.01)	10.30 (7.86)	18.82 (12.17	

Note. Standard deviations in parentheses. $EDI = Eating \, Disorders \, Inventory; \, M-DES = modified version of the Dissociative Experiences Scale.$

a High M-DES group: M-DES ≥38 for Sample 1, DT ≥25 for women.

378 Valdiserri and Kihlstrom

Table 3. Mean M-DES score and percentage "at risk" for dissociative disorder subjects classified by gender, abnormal eating, and ego dysfunction

A1 18 0	Lo	w	High	
Abnormal Eating Ego Dysfunction	Low High		Low	High
Men				
N	215	22	25	8
М	15.47	22.08	14.62	16.88
SD	10.93	19.18	12.36	13.92
% "At Risk"	9.3	22.7	12.0	12.5
Women				
N	322	21	25	18
Μ	13.54	23.17	19.99	20.56
SD	10.77	10.26	10.87	15.52
% "At Risk"	6.8	19.0	24.0	33.33

Note. M-DES = modified version of the Dissociative Experiences Scale.

greatest in those with high levels of ego dysfunction but low levels of abnormal eating. For women, however, the percentage is highest among those with high levels of both abnormal eating and ego dysfunction. Nevertheless, the majority of men (20 of 29, or 69.0%) and women (22 of 38, or 57.9%) identified as at risk for dissociative disorder had relatively low scores on both Abnormal Eating and Ego Dysfunction.

DISCUSSION

This study revealed a modest relationship between abnormal eating and dissociative experiences in the normal college population. Specifically, there were significant correlations between drive for thinness, bulimic tendencies, and body dissatisfaction on the one hand, and the frequency of dissociative experiences on the other. These correlations were stronger for women than for men. However, insofar as most discussions of the connection between abnormal eating and dissociative experiences have focused on women, the finding that the relationship holds for men as well is of some interest. Individuals (especially women) who scored high on the EDI DT subscale reported more frequent dissociative experiences than those who scored low. By the same token, individuals (especially women) who scored high on the M-DES reported more signs and symptoms of abnormal eating.

On the other hand, the correlations between dissociative experiences and abnormal eating were relatively weak. As a rule, a set of personality attributes related to Ego Dysfunction (low IA, IE, MF, PE, and ID) correlated more strongly with dissociative experience. Factor analysis and stepwise multiple regression confirmed that dissociative experiences were more strongly related to these characteristics than they were to the signs and symptoms of abnormal eating per se. Put another way, the association between abnormal eating and dissociative experiences may be carried largely by the association between dissociative experiences and a set of personality attributes that are also associated with abnormal eating.

Garner et al. (1984; see also Vitousek & Manke, 1994) have proposed a model of eating disorder involving two rather different components: extremely high levels of concern

with weight, appearance, body shape, and eating (i.e., Abnormal Eating) coupled with a cluster of broader personality attributes of self-perceived IE, lack of IA, PE, ID, and MF (i.e., Ego Dysfunction). Within the college population, it appears that dissociative experiences are somewhat more closely associated with ego dysfunction than with abnormal eating per se.

Although dissociative experiences do appear to be linked to signs and symptoms of abnormal eating, even among individuals who are ostensibly normal, it should be noted that there is as yet very little evidence for the specificity of this association. Expressions of abnormal eating are correlated with dissociative experiences, but to our knowledge there has been no comparison of the strength of this relationship, compared to the correlation between eating disorder and other clinical or subclinical psychopathology, such as anxiety and depression, that are not themselves associated with dissociation. Perhaps individuals with tendencies toward eating disorder will display attributes associated with these other forms of psychopathology as well. Theoretical speculations concerning the link between eating disorder and dissociation should probably await such a comparison.

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