



Social competence and social-emotional isolation and eating disorder psychopathology in female and male adolescent psychiatric inpatients¹

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ABSTRACT. The *ex post facto* study examined the association between interpersonal deficits in peer relations and specific aspects of eating disorder (ED) psychopathology in psychiatrically-hospitalized adolescent girls and boys. Four hundred and ninety-two psychiatric inpatients (286 girls and 206 boys), aged 12 to 19 years, completed self-report instruments that generate assessments of peer relations, ED psychopathology, self-esteem, and depression. Associations between peer and ED variables were examined separately by sex and after controlling for levels of self-esteem and depression. Among males and females social-emotional isolation was positively related to body image dissatisfaction and binge eating both prior to and after controlling for low self-esteem and depressed mood. Among males, but not females, less social competence was related to greater body image dissatisfaction both prior to and after controlling for low self-esteem and depressed mood, and to dietary restriction prior to controlling for low self-esteem and depressed mood. Interpersonal deficits in peer relations are associated with ED psychopathology in both female and male adolescents even after accounting for depression and low self-esteem. Excluding males from research in this area may be problematic as relative to adolescent girls, adolescent boys' experiences with peers may be particularly impacted by ED-related psychopathology.

KEYWORDS. Adolescents. Eating disorders. Peer relationships. *Ex post facto* study.

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RESUMEN. En este estudio *ex post facto* se examinó la asociación entre déficits interpersonales en relaciones de iguales y aspectos específicos psicológicos de los trastornos alimentarios (TA) en adolescentes, varones y mujeres, hospitalizados en unidades psiquiátricas. Cuatrocientos noventa y dos pacientes psiquiátricos (286 adolescentes mujeres y 206 adolescentes varones), entre las edades de 12 y 19 años, completaron instrumentos de auto-informe que generaron la valoración de las relaciones de iguales, psicopatología de trastornos alimentarios, autoestima y depresión. Las asociaciones entre las variables de relaciones de iguales y trastornos alimentarios fueron examinadas, de modo separado, por género y controlando los niveles de autoestima y depresión. Entre adolescentes mujeres y varones, el aislamiento socio-emocional se encontró positivamente relacionado con la insatisfacción, con la imagen corporal y un patrón de atracones, tanto antes como después de controlar los elementos de autoestima y estado de ánimo deprimido. Déficit interpersonales en relaciones de iguales están asociados con psicopatología de trastornos alimentarios, tanto en adolescentes mujeres como varones, incluso después de tomar en consideración el estado de ánimo deprimido y la baja autoestima. La exclusión de los adolescentes varones de investigaciones en esta área puede resultar problemático debido a que, en relación con adolescentes mujeres, las relaciones de iguales de los primeros se pueden ver particularmente impactadas por psicopatología relacionada con trastornos alimentarios.

PALABRAS CLAVE. Adolescentes. Relaciones de pares. Trastornos alimentarios. Estudio *ex post facto*.

Adolescence represents a period of risk for the development of body image disturbance and eating disorders (ED). Adolescents typically experience the onset of one or two ED symptoms rather than multiple symptoms or full-blown diagnoses (Stice, Hayward, Cameron, Killen, and Taylor, 2000; Stice, Killen, Hayward, and Taylor, 1998). Among both adolescent females and males, subthreshold levels of disordered eating and body image disturbance are of significant concern as they are associated with risk for future full-blown ED as well as with psychosocial problems including low self-esteem, and major psychiatric problems, including depression and suicidality (*e.g.*, Crow, Eisenberg, Story, and Neumark-Sztainer, 2008; Johnson, Cohen, Kasen, and Brook, 2002; Paxton, Neumark-Sztainer, Hannan, and Eisenberg, 2006; Stice *et al.*, 1998; Stice *et al.*, 2000). The relatively consistent age at which body image and disordered eating problems intensify suggests that difficulties mastering the developmental tasks associated with the transition from childhood to adolescence might contribute to the onset of these symptoms (Schutz and Paxton, 2007).

A key developmental task of adolescence is the development of peer relationships, and difficulties in interpersonal relationships have been discussed as a potential factor in the development and maintenance of body image disturbance and disordered eating (Fairburn, Cooper, and Shafran, 2003; Soares and Dias, 2007). Studies suggest that adolescents with body image disturbance and disordered eating have difficulties negotiating conflict and expressing their feelings with friends (Schutz and Paxton, 2007; Shroff and Thompson, 2006). Furthermore, social withdrawal and anxiety in social situations

(particularly a fear of negative evaluation) have also been reported among adults and, to a less extent, adolescents with disordered eating (Bulik, Beidel, Duchmann, Weltzin, and Kaye, 1991; Schutz and Paxton, 2007; Streigel-Moore, Silberstein, and Rodin, 1993; Zonneville-Bender, Van Goozen, Cohen-Kettenis, Van Elburg, and Van Engeland, 2004).

The association between social skills, social-emotional isolation, and disordered eating among adolescents with severe psychiatric problems has received little research attention. Given the severity of these adolescents psychiatric problems their peer relationships could be particularly impaired and therefore understanding factors related to these impairments seems necessary. Although body image disturbances and ED are more common among females, the growing documentation of the significance of these problems among males (Hudson, Hiripi, Pope, and Kessler, 2007) indicates the need for studies to both include males and to test for gender differences. For example, since disordered eating and body image disturbances may be perceived as «normative» among girls and atypical among males, such problems may be particularly distressing in males and associated with decreased levels of social competence in peer relations and increased social-emotional isolation. Since specific aspects of disordered eating such as dietary restriction, body dissatisfaction, binge eating, and self-induced vomiting differ in their relationships with various aspects of psychosocial functioning (*e.g.*, Eddy, Celio Doyle, Hoste, Herzog, and Le Grange, 2008) the association between each of these symptoms and peer functioning should be examined separately. Finally, since disordered eating, low self-esteem, and depressed mood often co-occur during adolescence (*e.g.*, Johnson *et al.*, 2002; Lewinsohn, Striegel-Moore, and Seeley, 2000) and each could negatively impact peer functioning, it seems important to control for such factors. Thus, the present *ex post facto* study (Montero and León, 2007; Ramos-Alvarez, Moreno-Fernández, Valdés-Conroy, and Catena, 2008) aimed to examine the association between social competence in peer relations and social-emotional isolation and specific aspects of ED-related psychopathology (*i.e.*, dietary restriction, body image disturbance, binge eating, and self-induced vomiting) in psychiatrically-hospitalized adolescent girls and boys, to explore for gender differences, and to control for the effects of low self-esteem and depression/negative affect.

Method

Participants

Participants were a nearly consecutive series of 492 patients admitted to the adolescent treatment unit of a private, not-for-profit, psychiatric teaching hospital between 1997-2000. They ranged in age from 12 to 19 years ($M = 15.86$; $SD = 1.46$); 286 (58.13%) were female and 206 (41.87%) were male. The majority (79.30%) were Caucasian (10% were Hispanic American, 10% were African American, and .80% were of other backgrounds). Participants were admitted for a variety of serious psychiatric problems (*i.e.*, this was not a specialty ED service) requiring inpatient-level intervention, and no other selection processes were used. Participants were assessed clinically with respect to their appropriateness for participating in the assessment protocols, and very few were excluded. Exclusions were due to difficulty with reading or language comprehension, active psychosis, or agitation or confusion.

Procedures and measures

Assessments were conducted as part of an overall evaluation procedure, completed within one to four days after admission. Institutional Review Board (IRB) human subjects approval was obtained for chart review of the psychological assessments. At the time of admission, and after complete explanation of the assessment procedures, written informed consent was obtained from all participants. For minors, assent was obtained from participants and consent was obtained from their parents or guardians. For this study, we chose specific measures from the assessment battery that would evaluate peer functioning, ED-related psychopathology, self-esteem, and depression.

- Millon Adolescent Clinical Inventory (MACI; Millon, Millon, and Davis, 1993). The MACI consists of 160 true-false items and was developed and normed with clinical samples (Millon and Davis, 1993; Millon *et al.*, 1993). The MACI comprises 27 clinical scales that tap clinical syndromes, expressed concerns, and personality styles and contains basic validity checks. All participants included in the current study passed the validity checks. The MACI, a widely used assessment instrument (McCann, 1999), has demonstrated good internal consistency, test-retest reliability, and has been validated against various measures by several research groups (Millon and Davis, 1993; Murrie and Cornell, 2002; Romm, Bockian, and Harvey, 1999). In the present study, relevant items from the MACI were used to create variables reflecting four specific ED psychopathology domains and two peer-related functioning variables.
- Body Image Disturbance and ED Feature Measures. Although two MACI scales (Eating Dysfunction and Body Disapproval) assess global constructs related to ED psychopathology, we generated four specific variables given our interest in specific features of eating and body image disturbance. The MACI lends itself well to this approach because it provides «prototypic» items for each scale (these are weighted most heavily in the usual scoring) (Millon *et al.*, 1993). The MACI items identified as prototypic for the Eating Dysfunction and the Body Disapproval scales supported the creation of three specific scales (*Dietary Restriction*, *Body Image*, and *Binge Eating*) and a categorical self-induced vomiting variable. The *Restriction* scale consists of three items assessing extreme attempts to restrict dietary intake (e.g., «*I'm willing to starve myself to be even thinner than I am*») with total scale scores ranging from 0 (no extreme attempts to restrict intake) to 3 (more extreme attempts to restrict intake). The *Body Image* scale consists of 5 items assessing adolescent's thoughts and feelings about their body shape and weight and appearance (e.g., «*I think I have a good body*», a reverse scored item) with scale scores ranging from 0 (low body image concerns) to 5 (greater body image concerns and body dissatisfaction). The *Binge Eating* scale consists of three items (e.g., «*I go on eating binges a couple times a week*») with scale scores ranging from 0 to 3 (with 0 denoting no binge eating and 3 denoting higher severity of binge eating). Self-induced vomiting was assessed categorically with a single item («*I sometimes force myself to vomit after eating a lot*»).

- Peer Relations Measures. We submitted all 11 of the MACI prototypic items addressing social competence in peer relations and social-emotional isolation to a principal component factor analysis with varimax (orthogonal) rotation. Table 1 shows the results of the principal components analysis. Two factors had eigenvalues of one or greater, and this two-factor solution accounted for 53.30% of the overall variance. Table 1 shows the results after the varimax rotation including the items that loaded on each of the two factors, which we labeled *Social competence* and *Social emotional isolation*. Higher scores on the *Social competence* scale reflect less social competence.
- Beck Depression Inventory – 21-item version (BDI; Beck and Steer, 1987) is a well-established inventory of the symptoms of depression. It has been utilized extensively within adolescent populations, and has been shown to have excellent psychometric properties in adolescent patients, including good internal consistency and test-retest reliability (Steer and Beck, 1988; Strober, Green, and Carlson, 1981).
- Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) is a 10-item measure of global self-esteem. A higher total score reflects greater self-esteem. Studies in adolescents have demonstrated good reliability and validity (Rosenberg, 1965; Winters, Myers, and Proud, 2002).

TABLE 1. Principal components analysis, with varimax rotation, for MACI peer relations protypic items.

<i>MACI Item</i>	<i>Factor loading</i>	
	<i>Factor 1 Social Competence</i>	<i>Factor 2 Social- Emotional Isolation</i>
Most other teenagers don't seem to like me	.64	.36
I seem to have a problem getting along with other teenagers	.69	.17
Although I want to have friends, I have almost none	.56	.44
I seem to fit in right away with any group of new kids I meet	.70	.06
I make friends easily	.78	.24
I often feel that others do not want to be friendly to me	.51	.50*
I'm uncomfortable with people unless I'm sure they really like me	.11	.71
I won't get close to people because I'm afraid they may make fun of me	.42	.54
I feel lonely and empty most of the time	.07	.48
I feel left out of things socially	.39	.68
Others my age never seem to call me to get together with them	.40	.57

Notes. Values in bold denote criteria that correspond to each factor. Factor 1 eigenvalue = 4.87, percent of variance = 44.29%. Factor 2 eigenvalue = 1.00, percent of variance = 9.06%.

* Conceptually this item was more consistent with factor 2 and was included on this factor.

Data analysis

A series of Pearson's correlations were conducted to examine the association between the two peer variables (*Social competence and Social-emotional isolation*) and specific features of disordered eating (*Dietary restriction, Body image, and Binge eating*). To assess the association between these variables after controlling for self-esteem and depressed mood, partial correlations controlling for Rosenberg Self-esteem

Scale (RSES) and Beck Depression Inventory (BDI) scores were also conducted. Point biserial correlations were used to assess the association between the two peer variables and the categorical variable self-induced vomiting. To explore whether the pattern of results were comparable for females and males, all analyses were conducted separately for females and males.

Results

Description of females and males scores on peer variables, self-esteem, depression, and ED-related psychopathology

Means and standard deviations for females and males for each of the variables assessed are displayed in Table 2.

TABLE 2. Scores on social competence, social-emotional isolation, self-esteem, depression and ED-related psychopathology for females and males.

	<i>Females</i> (<i>n</i> = 286) <i>M</i> (<i>SD</i>)	<i>Males</i> (<i>n</i> = 206) <i>M</i> (<i>SD</i>)
Social competence	1.31 (1.51)	1.30 (1.68)
Social-emotional isolation	2.41 (2.03)	2.15 (1.99)
Self-esteem	25.93 (7.09)	28.43 (7.31)
Depression	19.20 (12.66)	13.78 (11.51)
Restriction	1.05 (1.18)	.32 (.77)
Body image	3.06 (1.99)	1.67 (1.77)
Binge eating	.62 (.94)	.43 (.69)
Purging ^A	17.48% (<i>n</i> = 50)	5.34 % (<i>n</i> = 11)

Notes. Self-esteem = Rosenberg Self-Esteem Scale, Depression = Beck Depression Inventory, Purging = Self-Induced vomiting. ^A Percentage of females and males endorsing the categorical variable self-induced vomiting.

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Tables 3 displays the correlations between *Social competence* and *Social-emotional isolation* and specific aspects of disordered eating, as well as the partial correlations between these variables controlling for RSES and BDI scores for females and males, respectively. Overall, for both females and males body image disturbance and disordered eating were more consistently related to greater *Social-emotional isolation* rather than decreased *Social competence* in peer relations. Many correlations with *Social-emotional isolation* remained significant even after controlling for self-esteem and depressed mood. Prior to and after controlling for RSES and BDI scores, across genders feeling emotionally isolated in peer relations was positively related to body image disturbance. Within males but not females, feeling emotionally isolated in peer relations was positively associated with dietary restriction even after controlling for RSES and BDI scores. The only correlation with *Social competence* that remained significant after controlling for RSES and BDI scores was with body image disturbance among males. Specifically, even

after removing the effects of RSES and BDI scores, among males, difficulties making friends and getting along with peers was associated with greater body image disturbance.

TABLE 3. Correlations between social competence and social-emotional isolation and body image disturbance and disordered eating among females and males (*N* = 492).

	<i>Females</i> (<i>n</i> = 286)		<i>Social-emotional</i> <i>isolation</i>		<i>Males</i> (<i>n</i> = 206)		<i>Social-emotional</i> <i>isolation</i>	
	<i>Social</i> <i>competence</i> <i>r</i>	<i>Partial r+</i>	<i>r</i>	<i>Partial r+</i>	<i>Social</i> <i>competence</i> <i>r</i>	<i>Partial r+</i>	<i>r</i>	<i>Partial r+</i>
Self-esteem	-.26***		-.47***		-.49***		-.60***	
Depression	.23***		.42***		.48***		.54***	
Restriction	.05	-.07	.20**	-.00	.24**	.10	.38***	.26***
Body image	.22***	.09	.44***	.23***	.48***	.24**	.54***	.27***
Binge eating	.13*	.04	.28***	.14*	.09	.00	.21**	.16*
Purging ^A	-.03	-.10	.11	-.01	.06	-.02	.09	.02

Notes. Self-esteem = Rosenberg Self-Esteem Scale, Depression = Beck Depression Inventory, Purging = Self-induced vomiting.

^A Point-biserial correlations were conducted for the categorical variable self-induced vomiting + BDI and RSES scores were partialled out.

* *p* < .05, ** *p* < .01, ****p* < .001.

Discussion

This study assessed the relationship between social competence in peer relations and social-emotional isolation and specific aspects of ED-related psychopathology in 492 female and male adolescent psychiatric inpatients. Among both females and males greater social-emotional isolation was related to greater body image disturbance and binge eating both prior to after removing the effects of low self-esteem and depressed mood. Among males, social-emotional isolation was associated with greater dietary restriction prior to and after removing the effects of low self-esteem and depressed mood. Decreased social competence remained significantly associated with greater body image disturbance among males (but not females) even after removing the effects of low self-esteem and depressed mood.

Interpersonal difficulties were at least as related (if not more so) to body image disturbance and disordered eating for males as they were for females. It may be that there is more stigma associated with body image disturbance and disordered eating for males relative to females. In particular, among males both social competence in peer relations and social-emotional isolation were related to greater dietary restriction, and the association remained significant for social-emotional isolation after removing the effects of low self-esteem and depressed mood. In contrast, among females social-emotional isolation was only related to dietary restriction prior to removing the effects of low self-esteem and depressed mood. In addition, the only aspect of disordered eating that was significantly associated with social competence after removing the effects of low self-esteem and depressed mood was body image disturbance among

males. Despite the associated psychosocial concerns, body image concerns and dieting are often viewed as a «normative» experience among adolescent girls. The same may not be the true for boys. Therefore, body image concerns and dieting among adolescent females could be considered shared experiences that are viewed as socially acceptable, in contrast shape and weight concerns and dieting among males may intensify their social insecurities and may make it difficult for them to make friends and fit in with peers.

The cross-sectional design of this study does not allow for causal associations to be established. Therefore, it is not clear whether social-emotional isolation leads to body image disturbance and disordered eating or vice versa. Longitudinal research is needed to address this question. The limited number of adolescents, particularly males, in this study endorsing self-induced vomiting limits the conclusiveness of the findings with regard to this aspect of disordered eating. In addition, this study relied on adolescents' self-reports of both their experiences in peer relations and their ED-related psychopathology. Further research adopting multiple methods of assessment including peer- or parent-reports of adolescent's social competence is needed. Finally, adolescents in this study were all hospitalized due to the severity of their psychiatric impairments. Replication of this research with adolescents in the community is needed to assess the generalizability of these findings.

This study adds to a growing body of research documenting an association between adolescents' experiences with peers and disordered eating. In combination with the research supporting the use of interpersonal therapy for adults with bulimia nervosa (*e.g.*, Agras, Walsh, Fairburn, Wilson, and Kraemer, 2000; Fairburn, Jones, Peveler, Hope, O'Connor, 1993) and binge eating disorder (Wilfley *et al.*, 2002) findings from the current study suggest that the utility of interpersonally based treatments should be explored with younger populations with disordered eating. Our findings highlight commonalities along with important differences by gender in the associations between social competence in peer relations and social-emotional isolation and various aspects of body- and ED-related problems. Continued research is needed to replicate and to extend these findings in order to arrive at an improved understanding of the processes through which adolescents' experiences with peers influence (and/or are influenced by) their eating and thoughts and feelings about their bodies. Such information is needed to enhance prevention and early intervention programs.

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