

THE MEDIATING ROLE OF SELF-CONCEPT IN THE RELATIONSHIP BETWEEN ATTACHMENT INSECURITY AND IDENTITY DIFFERENTIATION AMONG WOMEN WITH AN EATING DISORDER

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The purpose of this study was to test structural relationships among developmentally-based factors, such as attachment anxiety and avoidance, and self-concept, which may lead to varying levels of identity differentiation among eating disordered women. We tested a model in which self-concept mediates the relationship between attachment insecurity and differentiation of self among eating disordered women. The sample consisted of 330 women with eating disorders who were referred to an eating disorders treatment program for assessment. Individuals completed self-report questionnaires at intake. Results indicated that higher attachment avoidance was associated with lower identity differentiation indirectly through poorer self-concept. In addition, higher attachment anxiety was directly related to lower differentiation of self, and higher attachment anxiety was also indirectly associated with lower identity differentiation through poorer self-concept. Results are consistent with a developmentally-based theory that suggests attachment dimensions rooted in early family experiences have an impact upon the quality of one's self-concept, which in turn directly impacts on one's identity. Targeting attachment avoidance or anxiety when treating women with eating disorders may result in improved self concepts and more differentiated identities.

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Women are most often affected by eating disorders during adolescence and early adulthood, which is also an important period of identity development. Although difficulties with self-concept and identity differentiation exist in other clinical and nonclinical samples, problems with identity development have been identified as a core feature of those with eating disorders (Bruch, 1978). Research has shown that individuals with Bulimia (BN) and Anorexia Nervosa (AN) commonly struggle with separation and individuation from family (O'Kearney, 1996). Bruch (1978) suggested that a characteristic of AN is the failure of an adolescent girl to develop autonomy and separation from parental figures. Similarly, Bowlby (1988) suggested that a family environment that cannot provide adequate security, emotional availability, and attunement to match a child's specific needs results in either problematic dependency or detachment between children and parents. One could argue that a poor match between family environment and a child's needs would lead to the development of a disrupted attachment behavioral system, and that this would negatively impact self-concept and later identity development among those who concurrently develop AN or BN.

Some researchers (Latzer, Hochdorf, Bachar, & Canetti, 2002) found that individuals with eating disorders tend to be less encouraged by parents to engage in personal activities that foster independence. Conversely, a number of studies suggested that families who encourage independence enable their adolescents to develop a clear identity (Holmbeck & Wandrei, 1993). Deci and Ryan (1995) reported that individuation and positive self-concept during adolescence is best facilitated by continuous attachment to parents, which consists of encouragement of autonomy while emphasizing connectedness.

The purpose of this study was to test structural relationships among developmentally-based factors, such as attachment dimensions and self-concept, which may lead to varying levels of identity differentiation among eating disordered women. We test a model in which self-concept mediates the relationship between attachment insecurity and differentiation of self among eating disordered women. In doing so, we provide a description of the potential pathways from attachment insecurity to self-concept and identity development.

ATTACHMENT AND EATING DISORDERS

Bowlby (1973) postulated that attachment is an inborn system that motivates an infant to seek proximity to a caregiving adult to facilitate survival of the infant. Infants' initial proximity-seeking attachment behaviors result in repeated interactions with a caregiver that become encoded into the implicit memory system as internal working models of the self and others. Internal working models function as cognitive-affective-interpersonal schemas that define the level of one's attachment security or insecurity. According to Bowlby (1973), when infants experience their caregivers as emotionally available and loving, infants develop an internal working model of the self as loved and valued and a model of others as loving and safe. However, attachment insecurity in the form of attachment anxiety develops when the child experiences their caregiver as inconsistent or unpredictable which leads to a model of the self as unlovable and a model of others as idealized (Bartholomew & Horowitz, 1991). Attachment insecurity in the form of attachment avoidance develops when infants have experiences of their caregivers as absent, neglectful, or rejecting which leads to a model of self as unworthy of love and a model of others as unloving or rejecting (Bartholomew & Horowitz, 1991; Ward, Ramsay, & Treasure, 2000).

Researchers have examined attachment in adults in terms of these two dimensions of attachment anxiety and attachment avoidance (Brennan, Clark, & Shaver, 1998). Individuals displaying an anxious pattern of attachment tend to be ambivalently dependent in relationships, they tend to fear abandonment, and they tend to hyperactivate their affective experiences (Tasca et al., 2009). Individuals displaying a dismissing avoidant pattern of attachment may dismiss the necessity for relationships, maladaptively attain self-sufficiency in emotional matters (Main, Kaplan, & Cassidy, 1985), and they tend to deactivate their emotions (Tasca et al., 2009).

In the past decade researchers have used attachment theory to understand the development and maintenance of factors related to eating disorders (Barone & Guiducci, 2009; Illing, Tasca, Balfour, & Bissada, 2010; Tasca et al., 2006; Tasca et al., 2009; Troisi, Massaroni, & Cuzzolaro, 2005; Ward et al., 2000; Ward et al., 2001). However, the literature as it stands now is far from definitive, and authors have called for more research on the associations between attachment style, eating disorder diagnosis, and eating disorder psycho-

pathology (Ward et al., 2000). Having said this, individuals with eating disorders tend to have more insecure forms of attachment compared to nonclinical samples (Barone & Guiducci, 2009; Illing et al., 2010; Soares & Dias, 2007; Troisi et al., 2005). Some researchers found that individuals with bulimic behaviors, including those diagnosed with either AN or BN, had higher rates of preoccupied anxious attachment, whereas those with the restricting type of AN had higher rates of avoidant attachment (Candelori & Ciocca, 1998; Ward et al., 2001). However, Illing and colleagues reported that attachment insecurity cuts across the eating disorders, such that attachment insecurity was predictive of eating disorder symptoms and treatment outcomes even after controlling for variations in the outcomes accounted for by eating disorder diagnosis. A recent small pilot study by Barone and Guiducci (2009) assessing attachment using the Adult Attachment Interview (AAI; Main, Goldwyn, & Hesse, 2003) found that individuals with eating disorders reported a history of caregiver relationships characterized by neglect, rejection, and role-reversal. This latter study is consistent with Bruch's (1978) hypothesis that eating disorders and problematic early family interactions are related.

Attachment anxiety and avoidance has also been linked to negative affect, body dissatisfaction, and eating disorder symptoms in clinical samples of women with eating disorders (Illing et al., 2010; Tasca et al., 2006, 2009). Troisi and colleagues (2006) found that early separation anxiety and insecure anxious attachment associated with rejection and abandonment were significant predictors of high levels of body dissatisfaction in women with BN and AN. The eating disordered individual's focus on her body may allow her to avoid the anxiety related to individuating from the family to establish adult peer relationships. This may be particularly relevant for individuals whose families exhibited problematic attachment relationships (e.g., intrusiveness and excessive control at one extreme, or indifference and neglect at the other extreme). Eating disorder symptoms may become the individual's way of maintaining some equilibrium in the face of problematic affect. Further, attachment insecurity in the eating disordered individual implies an internal working model of self that is negative; therefore the individual is more likely to struggle with developing a healthy and consistent self-concept.

SELF-CONCEPT AND EATING DISORDERS

Some authors have referred to BN and AN as disorders of the self and have examined the associations between aspects of self-concept such as self-esteem, body size estimation disturbances, and body image attitudes, and eating disorder symptoms (Stein & Corte, 2007). Researchers and theorists define self-concept as containing three elements: self-esteem, self-efficacy, and stability of the self (Bandura, 1977; Morey, 1996). Self-esteem is an aspect of one's self-concept that is evaluative and involves judgments about one's own worth (Jacobs, Bleeker, & Constantino, 2003). Bowlby (1988) argued that children who experience secure attachments tend to develop an internal working model of the self as valuable, worthwhile, and lovable. This in turn creates a positive cognitive set about the self that is carried into adolescence and adulthood. A significant proportion of individuals with eating disorders have insecure attachments, and these are associated with negative views of the self and low self esteem (Sharpe et al., 1998; Troisi et al., 2005). Low self esteem is likely a maintenance factor and a known risk factor for developing an eating disorder (Fairburn, Cooper, & Shafran, 2003; Fairburn et al., 2005).

Self-efficacy, self-competence, or self-confidence (Paterson, Power, Yellowlees, Park, & Taylor, 2006), refer to one's appraisals and beliefs about one's abilities. The basis of self-efficacy has its origin in the internal working models of self that develop during the process of separation-individuation beginning in infancy (Bretherton, 1991; Mahler, 1986). Paterson et al. (2006) found self-competence to be the main predictor of eating pathology in a sample of individuals with AN.

Stability is a third element defining self-concept. An individual has a sense of continuity (or stability) over time by creating a narrative about the self in which the various aspects of self are organized (Jacobs et al., 2003). Coherent narratives of the self are the hallmark of attachment security (Main, Hesse, & Goldwyn, 2008), and incoherent narratives of the self occur at a high rate among eating disordered women (Barone & Guiducci, 2009). Stability of self-esteem is associated with general health and well-being, whereas an unstable self-esteem reflects fragile and vulnerable feelings of immediate self-worth (Kernis, 2002). Instability of the self is characteristic of various clinical disorders including depression (Kernis, 2002) and eating disorders.

Some studies that have examined self-concept in eating disorders have conceptualized self concept as a cognitive construct, and used body-image as a proxy for self-concept (Stein & Corte, 2003, 2007). Stein and Corte (2003) proposed that negative body image and a high number of negative self-schemas are aspects of self that underlie the development of eating disorders. Stein and Corte (2007) found that a fat self-schema (a measure of self-concept) mediated the relationship between overall self-concept and eating disordered attitudes and behaviors in women with BN and AN. Stein and Corte's (2003, 2007) view of self-concept is consistent with a particular definition of self-esteem as body esteem. In the present study, we explored other aspects of self-concept not specific to body esteem in order to expand on the current knowledge regarding self-concept. We did so by considering not only general self-esteem, but we also included self-efficacy and stability of the self when conceptualizing self-concept.

IDENTITY AND EATING DISORDERS

A developmental outcome of self-esteem, self-efficacy, and stability of the self is a well established identity by early adulthood. Erikson (1950), in part, conceptualized identity as a developmental stage of late adolescence. He stated that identity is a process of defining a unified self that is both connected to others without role confusion, and separate from others without a sense of alienation (Erikson, 1950). Similarly, Kaplan (1986) defined identity as involving both the ability to be differentiated (i.e., independent from others), and the ability to be affiliated (i.e., valuing relationships without being overly dependent). For Erikson (1950), identity development is an important transition stage to adulthood and the capacity for intimacy.

One's ability to develop a coherent identity may also be linked to early attachment bonds with primary caregivers (Jacobs et al., 2003). Secure attachment to caregivers fosters a coherent identity by promoting active exploration and mastery of the environment thus enabling an individual to develop autonomy, while simultaneously encouraging the individual to depend on caregivers in times of stress and high need (Kenny & Hart, 1992). The availability of a secure base promotes self-regulation of emotions partly because individuals do not need to be preoccupied with the availability of

caregivers. This results in a positive self-concept which in turn allows for differentiation of self. Differentiation of the self, which is a key element of identity formation, is defined as: the thoughtful examination of situations; the ability to be fully aware of one's emotions; and the ability to experience strong emotion without disruption; or if the situation requires it, to shift to a state of calm reflection and reasoning (Skowron & Dendy, 2004).

Researchers found that individuals with eating disorders have difficulty attaining a stable, coherent, and differentiated identity. That is, these individuals often fail to define themselves as competent or adequate, and/or struggle with seeing their personal value as separate from those on which they are highly dependent (Cozzi & Ostuzzi, 2007). Stein and Corte (2007) found overall support for an identity impairment model in those with eating disorders. Namely, they found that women with BN and AN had fewer positive self-schemas, more negative self-schemas, and higher interrelatedness among their self-conceptions (indicating a less fully developed and differentiated identity) compared to a control group. Gordon (2000) found that individuals with BN do not feel they have the capacity to be in a relationship while remaining autonomous.

Despite anecdotal and clinical descriptions of the central role of poor identity development among women with eating disorders (Bruch, 1978), few research studies have examined identity in eating disordered individuals, and none have focused on the structural relationships between attachment, self-concept, and identity. The present study examined attachment anxiety and avoidance, self-concept, and identity within a structural equation modeling framework to evaluate the interrelationships among these constructs as they occur among eating disordered women. We hypothesized that (1) self-concept would mediate the relationship between attachment anxiety and identity, and that (2) self-concept would mediate the relationship between attachment avoidance and identity (see Figure 1 for the hypothesized structural model).

METHOD

PARTICIPANTS

Participants were 330 adult women, 17 years and older, referred for assessment and treatment of an eating disorder to a Regional Center

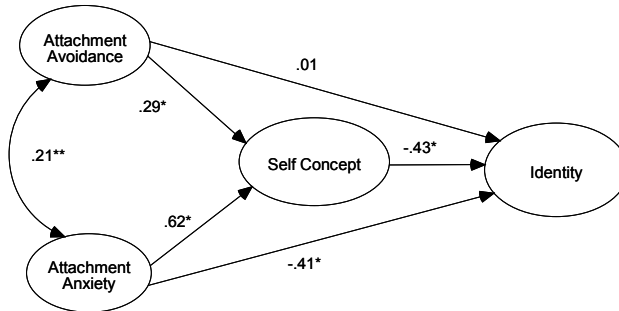


FIGURE 1. Structural Equation Model: Full Hypothesized Model.

Note. * $p < .001$; ** $p = .002$; $\chi^2(28, N = 330) = 66.31, p < .001$, comparative fit index (CFI) = .98, root mean square error of approximation (RMSEA) = .06 (90% confidence interval (CI): .05, .09). Standardized path coefficients are shown.

for Eating Disorders at a general hospital in a medium size urban center. The original sample consisted of 493 possible participants. The sample had a low representation of males ($N = 23$). Some attachment researchers reported that women are more likely than men to be preoccupied (anxious), and men more likely than women to be dismissing (avoidant; Alexander, Feeney, Hohaus, & Noller, 2001; Bartholomew & Horowitz, 1991; Lessard & Moretti, 1998). Because of the gender differences in attachment dimensions and the low frequency of men in our sample, only data from women in the current study were analyzed. Participants were not included if they had a large number of missing values that rendered any of the measures not scoreable ($N = 78$). As well, any participant who had an invalid Personality Assessment Inventory (PAI; Morey, 1991) was removed ($N = 62$; invalid PAI profiles are defined below).

The mean age of the sample was 27.87 years ($SD = 9.84$). The average chronicity of the eating disorder was 8.42 years ($SD = 8.48$). Thirty participants were diagnosed with Anorexia Nervosa-Restricting subtype (AN-R), 34 with Anorexia Nervosa Binge-Purge subtype (AN-BP), 133 with Bulimia Nervosa (BN), 37 with Binge Eating Disorder (BED), and 96 with Eating Disorder Not Otherwise Specified (ED-NOS). The mean Body Mass Index (BMI; kg/m^2) of the sample was 24.16 ($SD = 9.04$). The majority of the participants

were Caucasian (88%), 63% were single, 64% were employed full time or part-time, 34% were full-time students, and 7% were part-time students. The median family income was between \$60,000 and 69,000 Canadian dollars.

MEASURES

Experiences in Close Relationships Scale (ECRS). Attachment anxiety and attachment avoidance were assessed using the ECRS (Brennan et al., 1998), a 36-item self-report questionnaire measuring adult attachment. Items are reported on a 7-point Likert scale (1 = disagree strongly to 7 = agree strongly), with higher scores representing greater levels of attachment anxiety or avoidance. The Attachment Anxiety subscale (18 items) assesses concern with rejection and preoccupation with abandonment. The Attachment Avoidance subscale (18 items) measures fear of intimacy and discomfort with closeness or dependence. Individuals were asked to rate how they generally feel in their current romantic relationship, or for those who are not in a current (regular) relationship (that would include dating, common law, or marriage), how they would feel if they were in a relationship based on a previous experience. The coefficient alphas in this sample were .92 for Attachment Anxiety and .94 for Attachment Avoidance.

In order to generate three observed indicators for the two latent factors (i.e., attachment anxiety and attachment avoidance), three parcels of 6 items from each of the two scales were created (Russell, Kahn, Spoth, & Altmaier, 1998). Exploratory factor analyses using the maximum likelihood method of extraction were conducted separately on the items of the two subscales. Items were rank ordered by magnitude of the factor loadings and successive pairs of the highest and lowest loading items were assigned to each of the three parcels.

ECRS was used as a measure of adult attachment based on the literature stating that early attachment patterns with caregivers and attachment patterns in adult romantic relationships are driven by the same motivational system and represent similar behavioral dynamics. That is, they are considered behavioral homologues (Fraley & Shaver, 2000). The ECRS is considered by some researchers as the benchmark self report measure for attachment dimensions (Mikulincer & Shaver, 2007).

Personality Assessment Inventory (PAI). Two PAI (Morey, 1991) subscales, cognitive depression (DEP-C) and identity problems (BOR-I), were the indicator variables for the self-concept latent factor. The PAI is a self-report questionnaire comprised of 344 items and 22 nonoverlapping full scales measuring clinical constructs. Items are scored on a 4-point Likert scale ranging from 0 (Not at all true) to 3 (Very true). Total raw scores are converted into T-scores based on a census-based normative sample, with higher T-scores indicating greater psychopathology. High scores on the DEP-C subscale indicate low self-efficacy, thoughts of worthlessness and personal failure; high scores on the BOR-I subscale indicate a less stable self-concept, uncertainty about major life issues, and an absence of purpose. The coefficient alphas and mean inter-item correlations for an eating disordered sample were: DEP-C = .85, $r = .41$; and BOR-I = .71, $r = .29$ (Tasca, Wood, Demidenko, & Bissada, 2002) indicating good internal consistency (Clark & Watson, 1995).

The PAI has four validity scales used to identify invalid profiles caused by inconsistent responding (Inconsistency scale); careless or random responding (Infrequency scale); exaggerated negative responding (Negative Impression Management scale); and exaggerated positive responding (Positive Impression Management scale). Any participants with any *T*-scores above the clinical cut off as indicated by Morey (1996; i.e., >73 for Inconsistency; >74 for Infrequency; >91 for Negative Impression; and >68 for Positive Impression) were removed from the analyses.

Differentiation of Self Inventory-Revised (DSI-R). The *I-Position* and *Fusion with Others* subscales of the DSI-R (Skowron & Friedlander, 1998) were indicators for the Identity (Differentiation of Self) latent factor. The DSI-R is a 46-item self-report measure of differentiation of self, scored on a 6-point Likert scale (range: 1 = not at all true of me to 6 = very true of me). Two of the four DSI-R subscales, Emotional Reactivity and Emotional Cutoff, represented intrapsychic and not interpersonal aspects of identity (Skowron & Friedlander, 1998). We were particularly interested in aspects of identity that were more directly associated with the concepts in Erikson's (1950) model of differentiation and separation, and so we used only the interpersonal *I-Position* and *Fusion with Others* subscales (Skowron & Friedlander, 1998). The *I-Position* subscale (11 items) measures one's ability to thoughtfully keep to one's own convictions, even when pressured by others to do otherwise, as well as maintain a

coherent sense of self in relation to others. The Fusion with Others subscale (12 items) assesses the tendency to be overly compliant with others, seek excessive approval and acceptance, and hold few convictions of one's own. Lower scores on these subscales represent lower levels of self-differentiation. Coefficient alphas for this sample were .83 for I-Position and .77 for Fusion with Others.

PROCEDURE

Patients were referred to a Regional Center for the Treatment of Eating Disorders by a family physician or psychiatrist for an assessment and treatment of an eating disorder. During the initial consultation, patients completed a diagnostic interview with a Psychologist and a Psychiatrist in which Axis I disorders were assessed. A diagnosis was based on a consensus between the two clinicians. As a further check on the reliability of the diagnoses, 10% of the reports with identifying and diagnostic information removed were re-evaluated by an independent doctoral level clinician not involved in the original diagnoses. Agreement between the independent assessment and original diagnosis resulted in a Cohen's $\kappa = .95$, indicating very high agreement. After reviewing the files of individuals in which there was a disagreement, the original diagnosis was retained in all cases. Patients also completed a number of self-report questionnaires. Participants provided informed consent for the research. The study was approved by the Research Ethics Board at the institution where it was conducted.

RESULTS

ANALYSES

A two-step process was employed for structural equation modeling (Anderson & Gerbing, 1988): (1) the measurement model was tested for an acceptable fit to the baseline sample data using confirmatory factor analysis (CFA); and (2) the structural model was tested using the maximum likelihood method. AMOS (version 5.01) was used for all analyses. Criteria for acceptable model fit included a comparative fit index (CFI) greater than .95 (Hu & Bentler, 1995). Root mean square error of approximation (RMSEA) values less than .05

indicate good fit, values as high as .08 indicate reasonable fit, values ranging from .08 to .10 indicate mediocre fit, and values above .10 indicate poor fit (Browne & Cudeck, 1993; MacCallum, Browne, & Sugawara, 1996). A chi-square difference test was used to compare nested models (Steiger, Shapiro, & Browne, 1985).

To develop accurate estimates of standard errors of the indirect effects (i.e., mediated effects), Shrout and Bolger (2002) suggested a bootstrap procedure. MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) reported that of 14 methods tested to assess statistical significance of mediated effects, bootstrapping is preferred because it is more likely to maintain statistical power. From 2000 bootstrap samples, AMOS saves the estimates for indirect effects. If the 95% confidence interval (CI) for the estimate of indirect effect does not include zero, then the indirect effect is statistically significant at the .05 level (Shrout & Bolger, 2002).

MEASUREMENT MODEL

A test of the measurement model resulted in mixed support for fit to the data, $\chi^2(29, N = 330) = 106.71, p < .001, CFI = .96, RMSEA = .09$ (90% confidence interval [CI]: .07, .11). All of the loadings of the 10 measured variables on the four factors were significant ($p < .001$). However, while the CFI value indicated a good fit, the RMSEA value and CI suggested mediocre and possibly poor fit. Reviewing the modification indices from AMOS suggested that modeling correlated errors for the Depression–Cognitive and I-Position scales would improve model fit. Both of these scales measure aspects of integrity of the self (i.e., self-efficacy and self-coherence) that may underlie the specific factors that they respectively indicated in the measurement model. With this modification, we re-tested the measurement model which resulted in a good fit to the data, $\chi^2(28, N = 330) = 66.31, p < .001, CFI = .98, RMSEA = .06$ (90% confidence interval [CI]: .05, .09). This modified measurement model was a better fit than the original, $\Delta\chi^2(1) = 40.40, p < .001$. All of the loadings of the 10 measured indicators on the four factors remained significant ($p < .001$), and the factor loadings were almost identical to those in the original measurement model. Therefore, all of the latent variables were adequately measured by their respective indicators. Table 1

TABLE 1. Correlations Among Latent Variables for the Measurement Model

	1	2	3	4
1. Attachment Anxiety	—	.21	.68	-.70
2. Attachment Avoidance		—	.42	-.26
3. Self-Concept			—	-.71
4. Differentiation of Self				—

N = 330. All correlations are significant at $p < .001$.

displays the correlations among the latent factors from the measurement model.

STRUCTURAL MODEL FOR TESTING MEDIATED EFFECTS

To test our mediation hypotheses, we assessed two alternative models. First, we examined the hypothesized model (Model 1) depicted in Figure 1. Next, Model 1 was compared to two alternative models. Models 2 and 3 constrained to zero the direct path from attachment avoidance to identity and from attachment anxiety to identity, respectively. Model 2 assessed the mediating role of self-concept between attachment avoidance and identity. Model 3 assessed the mediating role of self-concept between attachment anxiety and identity.

The results indicated that Model 1: $\chi^2 (28, N = 330) = 66.31, p < .001, CFI = .98, RMSEA = .06$, (90% confidence interval [CI]: .05, .09) fit the data well (Figure 1). All paths were significant except for the direct path between attachment avoidance and identity which was not significant. Model 2, $\chi^2 (29, N = 330) = 66.34, CFI = .98, RMSEA = .06$ (90% CI: .04, .08) also fit the data well (see Figure 2). A non-significant chi square difference test comparing Model 1 to Model 2, $\Delta\chi^2 (1, N = 330) = .03, p > .05$ suggested that the direct path from attachment avoidance to identity did not contribute significantly to model fit, and therefore could be removed from the final model. Model 3, $\chi^2 (29, N = 330) = 88.26, CFI = .97, RMSEA = .08$ (90% CI: .06, .10) was an adequate to poor fit for the data, indicating that it was necessary to retain the direct path between attachment anxiety and identity. A comparison of Models 1 and 3 suggested Model 1 fit the data better, $\Delta\chi^2 (1, N = 330) = 21.95, p < .001$. Therefore, Model 2 was chosen as the best fitting model (see Figure 2).

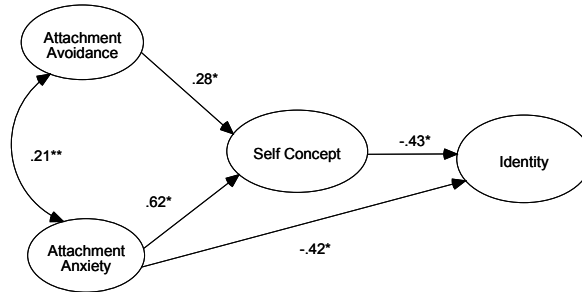


FIGURE 2. Structural Equation Model: Best Fitting Model

Note. * $p < .001$; ** $p = .002$; $\chi^2 (29, N = 330) = 66.34$, comparative fit index (CFI) = .98, root mean square error of approximation (RMSEA) = .06 (90% confidence interval (CI): .04, .08). Standardized path coefficients are shown.

SIGNIFICANCE LEVELS OF INDIRECT EFFECTS

The results of the bootstrap method for testing indirect effects indicated that the mean indirect effect from attachment avoidance through self-concept to identity, $b = -.11$ (CI: $-.17, -.06$), $p = .002$, was significant and accounted for approximately 15% of the variance in identity. The mean indirect effect from attachment anxiety through self-concept to identity, $b = -.27$ (CI: $-.39, -.19$), $p = .001$, was significant and accounted for 19% of the variance in identity.

DISCUSSION

This study examined the role of self-concept as a mediator between attachment anxiety or avoidance and identity (differentiation of self) in a clinical sample of women with eating disorders. Regarding the first hypothesis, we found that higher attachment avoidance was associated with lower identity differentiation indirectly through poorer self-concept. Regarding the second hypothesis, higher attachment anxiety had a direct bearing on lower differentiation of self, and higher attachment anxiety was also indirectly associated with lower

identity differentiation through poorer self-concept. The results are consistent with a developmentally-based theory that suggests that attachment dimensions rooted in early family experiences have an impact upon the quality of one's self-concept, which in turn has a direct impact on one's identity (Erikson, 1950; Jacobs et al., 2003; Kaplan, 1986). Moreover, our findings are consistent with research using the gold standard of attachment interviews (i.e., AAI) demonstrating an overrepresentation of general attachment insecurity in individuals with eating disorders (Barone & Guiducci, 2009). In particular, Barone and Guiducci (2009) found a very high rate of attachment avoidance in individuals with eating disorders, consistent with the association we found between attachment avoidance and poor identity differentiation in individuals with eating disorders.

The results of the current study place poor self-concept as a central construct in the development of an inadequately defined identity among eating disordered women. Self-concept, comprised of self-esteem, self-efficacy, and stability of the self, is thought to develop during adolescence as an outcome of the quality of early attachment relationships (Jacobs et al., 2003). Individuals with a poorly developed self-concept characterized by low self-esteem, for example, may struggle with differentiating from their family of origin in such a way that does not allow for optimal interdependence. As a result, confusion around roles and poor self-definition may develop. Bruch (1978) argued that such problems of identity are commonplace among young women with an eating disorder.

As suggested by the findings, attachment insecurity represents a particular developmental vulnerability to a problematic self-concept in eating disordered women. However, there was a difference between attachment avoidance and attachment anxiety in terms of their structural pathways to differentiation of the self. For attachment avoidance, the results indicated that devaluation of relationships and discomfort with closeness that characterize this attachment dimension do not lead directly to a poorly differentiated self in eating disordered women. Rather, those with attachment avoidance place undo emphasis on self-definition, achievement, and self-critical perfectionism. Perceived failures in these areas will have devastating effects on their self-esteem (Blatt & Blass, 1990). Perfectionism and unrealistically high personal standards are also hallmarks of some individuals with an eating disorder (Sherry, Hewitt, Besser, McGee, & Flett, 2004). Hence, the perceived failure that often accompanies unrealistically high standards, may lead to chronic

problems with self-concept, and then to struggles with identity development for eating disordered individuals with high attachment avoidance.

On the other hand, attachment anxiety had both a direct and indirect association with identity. The direct association can be accounted for by the preoccupation with relationships and high need for approval inherent in attachment anxiety. This likely results in seeking out others for reassurance, and perhaps to defer to others when there is disagreement or uncertainty. Hence, eating disordered individuals with high attachment anxiety will have difficulties in differentiating from family of origin and establishing an independent identity. The indirect effect suggests that being preoccupied with the fear of losing relationships may give rise to negative cognitions about the self and uncertainty about one's worth, which negatively impact the development of a healthy self-concept (Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000). In turn, an impaired self-concept among eating disordered individuals with high attachment anxiety may result in excessively relying on others to define one's sense of self.

Although a number of researchers have called for the development of attachment based interventions (Lopez & Brennan, 2000), such intervention for the eating disorders are currently nonexistent. The results from previous research (Tasca et al., 2006; Tasca et al., 2009), indicated that attachment dimensions have a direct and indirect effect on the severity of eating disorder symptoms. The results of the current study suggest that attachment anxiety and avoidance also affect identity differentiation among those with an eating disorder, but that the processes of these effects may differ. These differences, based on attachment style, may require tailored clinical strategies to help eating disordered women to reduce role confusion and to develop mature interdependence with important others in their lives.

Therapy with an interpersonal and attachment focus may prove beneficial for eating disordered individuals struggling with attachment, self concept, and identity issues (e.g., Tasca, Mikail, & Hewitt, 2005). Such a therapy might involve an assessment of: attachment history, current attachment or interpersonal patterns that affect emotional states, and the impact of identity differentiation on current relationships and affect modulation. For example, eating disordered women with attachment avoidance may benefit from specifically targeting self-concept issues related to self-efficacy and self-esteem.

Perfectionistic high standards may be particularly detrimental to attachment avoidant individuals whose self-esteem is likely severely affected by an achievement orientation and extreme self-criticism associated with perceived failures. Clinical interventions might focus on identifying, experiencing, and expressing negative affects associated with self-criticism (Wallin, 2007). Further, increasing the avoidantly attached individual's comfort with closeness starting within the therapeutic context, may mitigate the corrosive effects of their self-criticism and improve their ability to connect with others, which is central to the interdependence required for a cohesive identity.

Eating disordered women with attachment anxiety would benefit from a dual focus on self-concept and identity differentiation. First, clinicians may focus on further developing interpersonal boundaries to improve the relationships of the anxiously attached. This clinical focus may directly and positively affect these individuals' ability to develop an identity that is more differentiated and less dependent on the moods and opinions of important others. Second, the self-worth of eating disordered women with high attachment anxiety tends to be significantly reduced because of preoccupation with loss of relationships and because of high need for approval that often can not be met. The affective instability that occurs in these individuals underlies an unstable self-concept. A therapeutic focus on increasing reflective functioning (Fonagy, Gergeley, Jurist, & Target, 2002), the ability to envision mental states in self and others or have a theory of mind, may mitigate the affective instability, thus stabilizing the self-concept and improve the likelihood of developing a more coherent identity.

We acknowledge several limitations to this study. First, the data for this study were cross-sectional in nature, and so causal statements about the links between attachment, development of self-concept, and identity cannot be made. A longitudinal study that manipulates some variables would give more direct evidence of causality. For example, feedback conditions specifically targeted at reducing self-criticism may attenuate the indirect relationship between attachment avoidance and problems with identity differentiation. Second, we used a self-report measure of attachment anxiety and avoidance that was based on consciously available information about how individuals see themselves in adult intimate relationships (Mikulincer & Shaver, 2007). Although there is evidence to suggest that early parental attachment and adult attachment relationships are

highly similar (Fraley & Shaver, 2000), we acknowledge that the majority of the present sample was not currently married or living common law, and thus this may have affected their ratings of attachment avoidance and anxiety. Replicating these results with the Adult Attachment Interview (Main & Goldwyn, 1998), for example, would strengthen the validity of the findings. Third, the majority of the sample was Caucasian women from middle income families, and one could argue that identity differentiation is a culturally bound concept. However, these participant characteristics are common among eating disordered samples (e.g., Striegel-Moore, Wilson, Wilfley, Elder, & Brownell, 1998). In addition, the sample only included women so we cannot make inferences about attachment, self-concept, and identity differentiation in men with eating disorders.

The results suggest that attachment dimensions and associated problems with self-concept are useful to understanding problems with identity development among eating disordered women. The model presented and tested here might also be useful in informing therapeutic interventions tailored specifically to attachment style which likely varies within the eating disordered population. Therapy for eating disordered patients with attachment avoidance could focus on reducing unrealistically high standards and accompanying self-criticism, and also to improving affective communication and interpersonal connectedness in order to indirectly promote healthy interdependence. Treatment of patients who experience attachment anxiety may emphasize reflective functioning and interpersonal boundaries to result in a more stable self-concept and also to directly increase differentiation of self.

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