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Eating Pathology and Female Sibling Relationships: Social Comparison and Competition Between Sisters

Stephanie J. Preston
Pacific University

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Eating Pathology and Female Sibling Relationships: Social Comparison and Competition Between Sisters

Abstract
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Thesis

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EATING PATHOLOGY AND FEMALE SIBLING RELATIONSHIPS: SOCIAL COMPARISON AND COMPETITION BETWEEN SISTERS

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STEPHANIE J. PRESTON

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APPROVED:

Daniel J. Munoz, Ph.D.
Abstract

The present study expanded upon current research on risk factors for eating pathology by exploring the predictive power of and correlations between variables of social comparison and competition with a sister. Seventy-one women responded to measures of general social comparison, social comparison with a sister, physical-appearance-related social comparison, general competitiveness and competitiveness with a sister, as well as a measure of eating pathology. The results suggest that competitiveness with a sister and physical-appearance-related social comparison are correlated with eating pathology. In addition, competitiveness with a sister is a significant predictor of eating pathology, and explained 30% of the variance in eating pathology in this sample. Implications for treatment and assessment are discussed.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>i</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>REVIEW OF THE LITERATURE ON COMPETITIVENESS AND SOCIAL COMPARISON</td>
<td>3</td>
</tr>
<tr>
<td>Competitiveness</td>
<td>3</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>6</td>
</tr>
<tr>
<td>ON SIBLING RELATIONSHIPS</td>
<td>9</td>
</tr>
<tr>
<td>Competition and Sibling Relationships</td>
<td>10</td>
</tr>
<tr>
<td>Social Comparison and Sibling Relationships</td>
<td>10</td>
</tr>
<tr>
<td>METHOD</td>
<td>14</td>
</tr>
<tr>
<td>Participants</td>
<td>14</td>
</tr>
<tr>
<td>Measures</td>
<td>14</td>
</tr>
<tr>
<td>RESULTS</td>
<td>17</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>19</td>
</tr>
<tr>
<td>Limitations</td>
<td>21</td>
</tr>
<tr>
<td>Strengths</td>
<td>22</td>
</tr>
<tr>
<td>Implications</td>
<td>22</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>24</td>
</tr>
<tr>
<td>APPENDIXES</td>
<td></td>
</tr>
<tr>
<td>A. INFORMED CONSENT</td>
<td>29</td>
</tr>
<tr>
<td>B. DEMOGRAPHICS QUESTIONNAIRE</td>
<td>31</td>
</tr>
<tr>
<td>C. IOWA-NETHERLANDS COMPARISON ORIENTATION MEASURE</td>
<td>32</td>
</tr>
<tr>
<td>D. PHYSICAL APPEARANCE COMPARISON SCALE</td>
<td>35</td>
</tr>
<tr>
<td>E. COMPETITIVENESS INDEX</td>
<td>36</td>
</tr>
</tbody>
</table>
F. ADULT SIBLING RELATIONSHIP QUESTIONNAIRE ......................................38
G. EATING ATTITUDES TEST-26 .................................................................46
Eating Pathology and Female Sibling Relationships: Social Comparison and Competition Between Sisters

Eating disorders, such as anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified (EDNOS), affect millions of people and their families (American Psychiatric Association, 2010). The mortality rate from anorexia is over 10 times the expected mortality rate (Birmingham, Su, Hlynsky, Goldner, & Gao, 2005), and some researchers have asserted that anorexia has the highest mortality rate of any mental disorder (Agras, 2001; Harris & Barraclough, 1998). Eating disorders (EDs) are associated with cardiovascular problems, neurological complications, gastrointestinal issues, liver failure, dental and dermatological abnormalities, and many other serious health concerns (Mitchell & Crow, 2006), as well as comorbid psychological issues such as substance abuse, anxiety, and depression (Agras, 2001). Eating Disorder Not Otherwise Specified, which is often the diagnosis for sub-threshold eating pathology, also has deleterious effects; research has shown that the prognosis and cost of treatment for EDNOS are similar to individuals with full-syndrome eating disorders and there is evidence of increased comorbidity (Schmidt, Lee, Perkins, Eisler, Treasure, Beecham, et al., 2008). Given the seriousness of disordered eating, there is a need for research on correlates and common experiences of individuals who are diagnosed with eating disorders.

Although several studies have found the related construct of perfectionism to be associated with disordered eating (see Stice, 2002, for a review), competitiveness has not been researched as frequently. Competitiveness can be defined as the desire to win in interpersonal situations or surpass others in terms of some ability or characteristic (e.g., Houston, Farese, & La Du, 1992; Peden, Stiles, Vandehey, & Diekhoff, 2008). The literature on competitiveness and
women with eating disorders has focused on athletes and sports competition (i.e., Picard, 1999; Stoutjesdyk & Jevne, 1993) whereas levels of competitiveness in the personalities of women who are not athletes, per se, has not been widely examined. The results of research on competitiveness in women who are not specifically athletes is mixed; some researchers have concluded that competitiveness alone is not associated with eating pathology but hypercompetitiveness is (Burkle, Ryckman, Gold, Thornton, & Audesse, 1999), whereas others have found associations between high levels of competitiveness and eating disorder symptoms (Peden et al., 2008).

In the process of competing with others, we often compare ourselves to determine how we are doing. Social comparison theory (Festinger, 1954) states that we have a drive to evaluate ourselves and that when objective targets for comparison are not available, we compare ourselves to those around us. There have been quite a few studies examining the relationship between social comparison and eating pathology or body dissatisfaction (i.e., Corning, Krumm, & Smitham, 2006; Lin & Kulik, 2002; Lindner, Huges, & Fahy, 2008; Thompson & Heinberg, 1993), several of which show links between the two constructs. According to these studies, women who compare themselves more frequently or who feel they lose in comparisons with other women are more likely to be dissatisfied with their bodies or engage in disordered eating.

An important consideration in social comparison is the person with whom one is comparing oneself (i.e. the target of comparison). Miller, Turnbull, and McFarland (1988) differentiated between universal and particularistic targets; a universal target is one that gives information on general standing and a particularistic target is someone similar to the individual, with whom they identify or share a bond. Miller et al. found that individuals prefer to compare themselves with particularistic targets. Research on social comparison in women has also shown
that they tend to place more importance on comparisons between themselves and friends than targets such as USA citizens or celebrities. (Heinberg & Thompson, 1992). Heinberg and Thompson found that family was not a very salient target for comparison; however they did not differentiate between family members. Based on the research regarding particularistic targets, sisters may be a more salient target for women because they are more similar to the individual than fathers or even mothers.

Little research exists about the effects of sibling relationships on mental health. Several studies have shown the benefits of including siblings in the treatment of eating disorders (e.g., Honig, 2007; Lock & Le Grange, 2005), but very little research has been done to explore the effect of the sibling relationship on the development of eating disorders. The aim of this paper is to investigate the possible connection between eating pathology and sibling relationships that are characterized by high levels of competition and social comparison.

*Competitiveness*

Burckle, Ryckman, Gold, Thornton, and Audesse (1999) examined the contribution of competitive attitudes on disordered eating behavior. More specifically, they examined the relationship between disordered eating and hypercompetitiveness and personal development competitiveness. Burckle et al. defined hypercompetitiveness as “a need to be successful at all costs”, and a willingness to exploit and manipulate others or do whatever it takes to succeed. Conversely, personal development competitiveness was defined as a healthy and beneficial drive toward success, but wherein the focus is on the enjoyment and mastery of a task, rather than the end result of success. The aim of personal development competitiveness is self-improvement as opposed to competition with others.
Using a sample of 198 Caucasian college women, the researchers measured levels of
hypercompetitiveness, personal development competitiveness, achievement orientation in several
domains, symptoms of bulimia and anorexia, and social desirability. They found
hypercompetitiveness was correlated with disordered eating, but there was not a correlation
between personal development competitiveness and disordered eating. Disordered eating was
also linked to general competitiveness, but not to motivation to achieve in academics and career.
Disordered eating was correlated to motivation to achieve in appearance. The researchers
concluded that general competitiveness and personal development competitiveness did not
contribute to disordered eating as much as hypercompetitiveness. However, this finding is
inconsistent with other studies that have found competitiveness to be related to levels of body
image dissatisfaction and disordered eating.

Peden, Stiles, Vandehey and Diekhoff (2008) examined the relationship between external
pressures and competitiveness on body dissatisfaction and eating disorder symptoms. They
hypothesized that “the more external pressure to perform well or appear attractive that an
individual receives, the more likely he or she is to have body dissatisfaction and characteristics
of eating disorders, which include disordered eating and disordered exercise regimes. In
addition, [they] hypothesized that the greater the degree of competitiveness that is enforced and
internalized, the more likely the individual is to have body dissatisfaction and characteristics of
eating disorders” (p.420). For their study, the researchers recruited 69 women and 41 men from
introductory psychology and sociology classes and 16 women and 37 men who were part of the
athletic subculture, as defined by their choosing to major or minor in a subject that required a
kinesiology course. Participants responded to a survey titled the Socially Prescribed
Competitiveness Survey, which the researchers constructed to measure competitiveness in a
variety of contexts (i.e., athletic, academic, and appearance-related endeavors), and external pressure to excel in academic, athletic, and appearance-related endeavors.

Concerning the general, non-athlete participant group, the researchers found significantly higher amounts of body dissatisfaction and slightly higher amounts of characteristics associated with eating disorders than in the athlete group. They also found that characteristics of eating disorders and body image disturbances were correlated with greater amounts of external pressure. Also, characteristics of eating disorders were found to occur more frequently among people who were more competitive, compared themselves with others, and who worried about surpassing the abilities of others. Body dissatisfaction was also found to occur more frequently in people who were more competitive. Although this study included both men and women and was based on a fairly small sample size, it is important evidence in support of the relationship between competitiveness and eating disorder symptoms.

Striegel-Moore, Silberstein, Grunbert, and Rodin (1990) examined the relationship between achievement orientation (which included competitiveness) and levels of disordered eating (dieting and bingeing) in college-age women. For their sample, the researchers recruited 668 freshman college females. The researchers administered a questionnaire measuring symptoms of disordered eating and a questionnaire measuring a positive attitude toward work, preference for difficult and challenging tasks, the desire to win in interpersonal situations and fear of success. They found that high levels of interpersonal competitiveness were associated with high levels of disordered eating symptoms. The authors compared their findings to past findings of eating pathology being related to perfectionism and hypothesized that increased levels of pressure to achieve and the opportunity for comparison engendered by communal living on college campuses may be related to the high levels of eating disorders and disordered eating.
Although the college campus setting may have contributed to increased competitiveness and increased eating disorder symptomatology, it is still worth noting that the women who did not have high levels of eating disorder symptoms did not score as high on the measure of interpersonal competitiveness. Thus, this study provides evidence that competitiveness and eating disorder symptoms are positively correlated.

**Social Comparison**

Thompson and Heinberg (1993) tested the relative contribution of weight/shape teasing and social comparison to explain variance associated with body dissatisfaction and eating disturbance. They gave measures of eating disturbance (drive for thinness and bulimia), body image, teasing history, social comparison and general distress/negative affectivity to 146 female undergraduates. By using multiple regression, they were able to determine that teasing and social comparison contributed significantly to the variance in eating disturbance and body image, even when general distress was removed from the analysis. Thus, social comparison, in combination with other factors, is a potential risk factor for eating pathology and is deserving of further research.

Lindner, Huges, and Fahy (2008) examined whether there were higher levels of social comparison and eating pathology in 127 women who were attending a predominantly female college, as opposed to a predominantly male college and a college with approximately an even male-to-female ratio. Participants completed questionnaires measuring the frequency with which they engaged in weight control practices (i.e., caloric restriction, exercise, self-induced vomiting, and diet pill and laxative use), and their engagement in social comparison. The researchers found that the women attending predominantly female colleges had significantly higher levels of
eating pathology than the women attending the predominantly male college. They also found that the women at the predominantly female college had the highest levels of social comparison and the women attending the predominantly male college had significantly lower amounts of social comparison than the women attending the other two colleges. There was a moderately strong positive correlation between scores on social comparison and eating pathology. This study suggests that women who engage in more social comparison tend to engage in more disordered eating.

Based on research indicating that when women compare themselves to images of idealized women’s bodies experience their perception of their own attractiveness decreases, Corning, Krumm, and Smitham (2006) investigated the relationship between eating disorder symptoms and social comparison (particularly body/appearance comparison) with self-esteem as a mediating variable. They tested whether differences in social comparison processes were predictive of eating disorder symptoms. The researchers hypothesized that “a greater propensity to engage in social comparison would differentiate ED-symptomatic women from their asymptomatic peers” (p.340), and also that, because appearance-related social comparisons are particularly salient for women, appearance-related comparison would predict ED symptom status, with more self-defeating comparisons predicting the presence of symptoms. Lastly, they predicted that the level of self-esteem would differentiate women with and without eating disorder symptoms, with the women with symptoms having lower self-esteem, and that self esteem would play a meditational role between body-related social comparisons and eating disorder symptomatology.

The researchers used a sample of 130 undergraduate women, some of whom attended a campus peer-support group for eating and body-related concerns. The women were asked to
complete three measures: one measured propensity for social comparison, one measured self-esteem, and one was an eating disorder diagnostic tool which enabled the researchers to divide the women into “ED-symptomatic” and “asymptomatic” groups. The women also viewed images of women who, to varying degrees, conformed to or deviated from the current cultural body ideal. They were asked to compare their body to the image by filling in the blank in the sentence, “Compared to my own body, this woman’s body is ___ mine” using a 7-point scale ranging from 1 (much worse than) to 4 (about the same as) to 7 (much better than).

As hypothesized, an ANOVA indicated that women with eating disorder symptoms showed a significantly greater tendency to engage in the process of general, everyday social comparison than did asymptomatic women. Also, ED-symptomatic women responded to the images in a way indicating that they perceived them in a significantly more self-defeating way than did the asymptomatic women. This relationship held even when Body Mass Index (BMI) was controlled. When propensity to engage in social comparison was controlled, responses to the images still significantly predicted ED symptom status. Regarding their third hypothesis, the researchers found that the ED-symptomatic women had significantly lower self-esteem levels than the asymptomatic women. This study provides evidence that women who have a tendency to make social comparisons are more likely to have clinical levels of eating disorder symptoms. Additionally, women with eating disorder symptoms react more negatively to comparisons than women who do not meet criteria for eating disorders.

The studies reviewed provide evidence in support of the relationships between eating pathology, competitiveness, and social comparison. Individuals who are more competitive were found to have increased symptoms of eating disorders and women who have high levels of interpersonal competitiveness were found to be more likely to have high levels of eating disorder
symptoms. Social comparison was found to significantly contribute to the variance in eating disturbance and it was also found to be positively correlated with eating pathology. Women who engaged in more social comparison were found to engage in more disordered eating behaviors and women with eating disorder symptoms tended to engage in social comparison more frequently than their asymptomatic counterparts. Although some of the existing research has attempted to shed light on which targets of comparison and competition are most salient for women with disordered eating, few have examined the role of social comparison and competition between sisters on eating behaviors.

**Sibling Relationships**

The relationship with a sibling has the potential to be the longest lasting relationship a person has. Siblings are thought to affect many aspects of development, including social skills, perspective-taking, cognitive skills, and psychosocial adjustment (Noller, 2005; Riggio, 2000). Whereas a conflictual sibling relationship has been associated with poorer social adjustment (Stormshack, et al 1996), positive sibling relationships have been found a protective factor against mental illness (Gass, Jenkins & Dunn, 2007). Sibling relationships characterized by conflict have also been shown to be related to negative outcomes such as aggressive and antisocial behavior and depression (Aguilar, O’Brien, August, Aoun, & Hektner, 2001; Slomkowski, Cohen, & Brook, 1997; Waldinger, Vaillant, & Orav, 2007). However, little is known about how sibling relationships may be related to eating pathology.
Competition and Sibling Relationships

Although sibling relationships are often a source of support, they can be one of the most conflict-filled relationships in an individual’s social network (Furman & Buhrmester, 1985). Siblings who are same-sex and closer in age tend to have more conflict and rivalry in their relationships (Davis & Meyer, 2008). Siblings tended to react more negatively to competitive situations where a younger sibling outperformed an older sibling in a relevant domain than when the competitor was a peer or friend (Noller, 2005). Noller also found that siblings’ reactions to competitive situations had more to do with the level of warmth or conflict in the sibling relationship than the performance itself, leading her to conclude that “perhaps a warm sibling relationship helps an individual to maintain a positive self-evaluation, whatever the circumstances” (p.18).

For the most part, the literature on competition between siblings, one of whom has an eating disorder, has been limited to anecdotal reports of jealousy or rivalry. Murphy, Troop, and Treasure (2001) stated that, compared to sisters without anorexia, patients with anorexia reported more antagonism toward their sisters and more jealousy of their sisters. Bachner-Melman (2005) similarly found that some of the women she interviewed, all of whom had anorexia, mentioned sibling rivalry, physical and verbal fights, and claims of which parent loved which sibling most. The women described their sibling relationships to be characterized by distance, rivalry, and antagonism, with little or no mention of warmth, friendship, or caring.

Social Comparison and Sibling Relationships

Coomber and King (2008) assessed the self-reports of 47 sister pairs in order to evaluate the Tripartite Influence Model, which asserts that sociocultural agents affect body image
dissatisfaction through the mediators of social comparison and internalization. They found that sisters’ reports were correlated on internalization, body image dissatisfaction, disordered eating, and parental modeling and pressure. Of particular importance to the current study, the researchers also found that sisters were an equivalent social comparison target to peers, which have often been found to be the most salient comparison target for women with disordered eating (McCabe, Ricciardelli, & Ridge, 2006; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999).

Tsiantas and King (2001) examined the similarities between sisters in terms of body image disturbance, sociocultural awareness, and internalization of the thin ideal. They also investigated whether the appearance-based social comparisons of younger sisters resulted in negative self-evaluations. Lastly, they examined whether sociocultural internalization and negative sibling social comparison would be predictive of body image disturbance. Forty-one sister pairs were recruited and filled out self-report questionnaires; the sisters were between the ages of 14 and 25, within a four-year range of each other, and had a minimum of 5 hours of contact with each other per week.

The researchers found that sisters were moderately correlated with each other on measures of body size distortion, body dissatisfaction, and scores on the Body Size Questionnaire. They were also moderately correlated on sociocultural internalization and awareness. Using multiple regression, the authors found that Body Mass Index (BMI), sibling social comparisons, and sociocultural internalization made a significant combined contribution to the predictiveness of body size distortion, body dissatisfaction and body shape concerns in younger sisters. BMI, sibling social comparison, and sociocultural internalization also made a significant combined contribution to body size distortion, body dissatisfaction, body shape concerns and preference for thinness in older sisters. Younger sisters’ appearance comparisons of
their older sister during teenage years also predicted body dissatisfaction and body size concerns. As hypothesized, younger sisters who made appearance-based social comparisons with their older sister had more negative self-evaluations of appearance during childhood and teenage years. In summary, social comparisons are one of several important variables affecting levels of body image, particularly for younger sisters. It should be noted that this study required that participants did not have eating pathology, leaving the door open for further research on more disordered eating.

Rieves and Cash (1996) examined the effects of appearance-related teasing and criticism, sibling social comparison, and maternal modeling of body-image attitudes and behaviors on current body satisfaction. They recruited 152 college women (ages 17 to 35, M = 21.4) and asked them to complete a battery of questionnaires regarding their experiences of appearance-related teasing, effects of sibling appearance, and maternal attitudes toward physical appearance. The participants own body image was also measured, using two scales from the Multidimensional Body-Self Relations Questionnaire, a measure of appearance schemas and one of body image dysphoria. The researchers performed Pearson correlations to determine which of the constructs (i.e., appearance teasing and criticism, sibling comparison, and maternal body-image attitudes) were correlated. Concerning sibling social comparison, the researchers found that “the rated effects of sibling appearance during adolescence correlated significantly with all four body-image measures”. They also found that the perceived effects during childhood were correlated with two of the four measures of body-image (i.e. appearance-invested beliefs and body image dysphoria). These correlations still existed after controlling for BMI.

The researchers then used stepwise multiple regression analyses to determine which of the experiences (i.e., teasing, maternal modeling, and sibling social comparison) contributed
significantly to the 4 measures of current body dissatisfaction. They found that the three experiences accounted for 30% of the variance in Appearance Evaluation, sibling comparison and teasing accounted for 16% of the variance in ASI, and that sibling comparison and two other scales also accounted for 23% of the variance in body-image dysphoria. Lastly, they found that sibling comparison and mother’s perceived overweight preoccupation also accounted for 11% of the variance in the participants’ overweight preoccupation. These predictors were all still significant when controlling for current BMI. This demonstrated shows that sibling social comparison, among other experiences, may be an important predictor of later body dissatisfaction.

The long–lasting relationship between siblings has the potential to affect individuals greatly. Because they are more similar in many ways, siblings may be a more salient target for social comparison than peers or other family members. Additionally, sibling social comparison can have a significant effect on body image. Relationships between siblings when one exhibits eating pathology may be more conflicted and competitive than unaffected sibling relationships, and this correlation deserves further exploration.

The purpose of this study was to examine the relationship between eating pathology and levels of social comparison and competition between sisters. It is hypothesized that social comparison between sisters (both general and physical-appearance-related) and competition between sisters will be correlated with eating pathology. The combined variables of sibling social comparison, sibling competitiveness, general competitiveness, general social comparison, and physical appearance related social comparison with a sister are expected to be predictive of eating pathology. Additionally, it is predicted that social comparison between sisters (general
and physical-appearance-related) and competition between sisters will better predict eating pathology than general social comparison and general competitiveness.

Method

Participants

A total of 130 participants were recruited through online community resources, such as craigslist.com and local newspapers’ online classifieds from March 1, 2010 to June 1, 2010. Advertisements were placed in newspapers and online resources for cities in the Pacific Northwest. The advertisement requested that women age 18 or older who also had at least one sister and concerns about their weight go to the surveymonkey site. Of the 130 participants, one was eliminated due to being male and 58 were eliminated due to missing data. For the remaining 71 participants, the mean age was 27.99 (SD = 8.28) with a range from 18 to 58. Weight ranged from 99 pounds to 310 pounds (M = 153.61, SD = 40.83). The participants’ BMI scores averaged 25.55 (SD = 6.76) and ranged from 16.86 to 51.58. Additionally, 32.4% of participants had a BMI outside normal range (i.e., below 19.9 or above 29.9). In terms of ethnicity, 81.7% identified as White/Caucasian, 7% identified as Asian/East Asian, one person identified as Hispanic/Latina (4.7%), one identified as Pacific Islander/Native Hawaiian (4.7%) and 8.5% selected two races.

Measures

Participants were first directed to a demographics questionnaire. This form included basic information about the participants (i.e., age, gender, race/ethnicity, etc.) as well as a self-report of height and weight. (See Appendix B.)
Social comparison. The Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999) is a measure of how much individuals compare themselves to others with respect to opinions, abilities, achievement and situations. Higher scores indicate a greater tendency toward social comparison. It has good internal consistency, with estimates ranging from .78 to .85 (Gibbons & Buunk, 1999). Corning, Krumm, and Smitham obtained a Cronbach’s alpha of .81 in their research using the INCOM (Corning, Krumm, & Smitham, 2006). The measure’s construct validity is attested to by its predicted significant relationships with self-monitoring, public and private self-consciousness, neuroticism, and social anxiety. Estimates of temporal stability range from .71 for a 3- to 4-week period to .60 after 1 year. This measure was edited slightly from its original version to direct the subject of comparison toward the sister with whom the participant was closest to in age. For example, the item “I often compare myself with others with respect to what I have accomplished in life” was changed to “I often compare myself with my sister with respect to what I have accomplished in life”. This type of editing was only done for the first section, leaving the sections on upward and downward comparison as measures of general social comparison (as opposed to sister-specific social comparison). The benefit of these changes was that the INCOM questionnaire resulted in two scores and could be utilized as a measure of the participant’s social comparison with her sister as well as a measure of the participant’s general social comparison. (See Appendix C.)

Physical-appearance-related social comparison. Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff, 1991) is a measure of how much individuals compare themselves to others with respect to physical appearance. It has an internal consistency of .78 and a 2-week test-retest reliability of .72. This measure was edited slightly from its original version to direct the subject of physical-appearance-related social comparison toward the sister.
with whom the participant was closest to in age. For example, the item “The best way for a person to know if they are overweight or underweight is to compare their figure to the figure of others” was changed to “The best way for a person to know if they are overweight or underweight is to compare their figure to their sister’s figure”. (See Appendix D.)

_General competitiveness._ The Competitiveness Index is a 14-item measure of interpersonal competitiveness in everyday contexts (Houston, n.d.). It has high internal consistency (alpha = .87) and is significantly correlated with other measures of competitiveness, such as the Work and Family Orientation Competitiveness Subscale (Houston, n.d.). (See Appendix E.)

_Competitiveness with sister._ The Adult Sibling Relationship Questionnaire (ASRQ) was developed to examine correlates of individual differences in adults’ sibling relationships (Stocker, Lanthier, & Furman, 1997). The scale was found to have three factors, Warmth, Conflict, and Rivalry, all of which had high internal consistency estimates (.97, .93, and .88 respectively) and high test-retest reliability (.95, .89 and .87 respectively). Scores on the ASRQ were found to correlate with descriptions of sibling relationships. The subscale of the ASRQ labeled Competition was used as a measure of competition between sisters.

_Eating pathology._ The Eating Attitudes Test-26 (EAT-26) was used to measure degree of eating pathology (Garner & Garfinkel, 1979; Garner, Olmsted, Bohr & Garfinkel, 1982). The 26-item version of the EAT was found to correlate with the 40-item version (.98) and has an internal consistency alpha of .90.
Results

Pearson correlations were conducted to determine whether any of the variables measured (i.e., general competitiveness, competitiveness with a sister, general social comparison, social comparison with a sister, or physical-appearance-related social comparison with a sister) were correlated with eating pathology (Table 1). Only competitiveness with a sister, $r(69) = .501$, $p < .01$, and physical-appearance-related social comparison with a sister, $r(69) = .339$ $p < .01$, were found to be correlated with eating pathology.

Table 1

*Correlations Between EAT-26 Score and Social Comparison and Competition Variables*

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<tr>
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<tr>
<td>1. General Competitiveness</td>
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<td>2. Competitiveness with Sister</td>
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<tr>
<td>(ASRQ Competition)</td>
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<tr>
<td>3. General Social Comparison</td>
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<td>(INCOMGeneral)</td>
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<tr>
<td>4. Social Comparison with Sister</td>
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<td>(INCOMSister)</td>
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<tr>
<td>5. Physical-Appearance-Related Social Comparison</td>
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<td>(Physical Appearance Comparison Scale)</td>
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*p < .01*
A multiple regression was conducted in order to determine whether sibling social comparison, sibling competitiveness, general competitiveness, general social comparison, and physical appearance related social comparison with a sister combined were predictive of eating pathology. The linear combination of the predictor variables was significantly related to eating pathology, $F(5, 65) = 5.477, p < .01$. The sample multiple correlation coefficient ($R$) was .54, indicating that approximately 30% ($R^2$) of the variance in eating pathology could be accounted for by the linear combination of the predictor variables. The value for the adjusted $R^2$ was .242. A participant’s score on the measure of sibling competitiveness (ASRQ Competition) was the only predictor variable that contributed significantly to the prediction of eating pathology. The squared semi-partial correlation was .169 and the 95% confidence interval around the regression coefficient for sibling competition was 0.598 to 1.82.

Lastly, hierarchical regressions were used to determine whether sister-related variables (ie., sibling competitiveness, general social comparison with a sister, and physical-appearance-related social comparison with a sister) were better predictors of eating pathology than general social comparison and general competitiveness. The combination of general social comparison and general competitiveness variables was not significantly related to eating pathology, $F(2, 68) = .254, p = .776, R^2 = .007$. The addition of the sister-related variables did produce a combination that was significantly related to eating pathology, $F(5, 65) = 5.477, p < .01$, and resulted in an increase in $R^2$ of .289. When a second hierarchical regression was conducted wherein general social comparison and general competitiveness were added to the sister-related variables, both models (sister-related variables alone and sister-related variables plus general variables) were significant. Their values were $F(3, 67) = 9.181, p < .01$ and $F(5, 65) = 5.477, p < .01$, respectively. However, the addition of the general comparison and general
competitiveness variables did not produce a significant change in $R^2$. $R^2$ was .291 with the sister-related variables and increased to .296 with the addition of the general variables—a change of only .005 ($p = .792$).

Discussion

There were three hypotheses in this study: (1) social comparison between sisters (both general and physical-appearance-related) and competition between sisters would be correlated with eating pathology, (2) the combined variables of sibling social comparison, sibling competitiveness, general competitiveness, general social comparison, and physical appearance related social comparison with a sister would be predictive of eating pathology, and (3) that social comparison between sisters (general and physical-appearance-related) and competition between sisters would better predict eating pathology than general social comparison and general competitiveness. Concerning the first hypothesis, both sibling social comparison and competition between sisters were found to be significantly correlated with eating pathology. When the second hypothesis was tested, only competitiveness between sisters emerged as a significant predictor of eating pathology. When general comparison and general social comparison were added to the variables of competitiveness with a sister, social comparison with a sister, and physical-appearance-related social comparison with a sister, the resulting linear combination did not produce a significant change in the amount of variance in eating pathology that could be accounted for by the combination of the variables when compared with just the sister-related variables. In other words, the sister-related variables accounted for more variance in eating pathology than the general competition and social comparison variables.
Competitiveness with sister and physical-appearance-related social comparison positively correlated with eating pathology. In other words, the more a woman feels competitive with her sister the more likely she is to have higher levels of eating pathology. Also, the more a woman compares her physical appearance with that of her sister, the more likely she is to have higher levels of eating pathology. This is consistent with existing literature, which has found sibling social comparison to be correlated with body dissatisfaction (Rieves & Cash, 1996), and that sisters with anorexia feel more jealousy and antagonism toward their sisters than their unaffected counterparts (Murphy, Troop & Treasure, 2001). It was expected that social comparison with a sister would be correlated with eating pathology as well, though it may not have been because the items focused on comparisons in the realms of school/work or social life, which are not related to appearance.

Of the five variables, only competitiveness with a sister was a significant predictor of eating pathology. This was in partial support of the hypothesis, though it was predicted that all the variables would have been significant predictors of eating pathology. It is particularly interesting that competitiveness with a sister was a significant predictor considering that the literature has not explored the connection between competitiveness between sisters and eating pathology. In this study, competitiveness with a sister accounted for 30% of the variance in eating pathology.

The hierarchical regressions indicated that sister-related variables (i.e, general social comparison with a sister, physical-appearance-related social comparison with a sister, and competitiveness with a sister) were better predictors of eating pathology than general social comparison and general competition. In fact, the general variables alone did not combine to produce a significant prediction equation for eating pathology, whereas the three sister-related
variables did by themselves as well as in addition to the general variables. From this, we can conclude that general competitiveness and general social comparison are not as potent predictors of eating pathology as competitiveness and social comparison with a sister. In other words, a woman’s tendency to compare herself with others on general variables such as work or personal life does not predict her potential for disordered eating and neither does her level of general competitiveness with others. It is when a woman is competitive with or compares herself to her sister that we can use that information to predict eating pathology. The target of competition and comparison is more important than competition or comparison alone, and a sister as a target is more predictive of eating pathology than general society as a target.

Limitations

There are several possible limitations to this study. First, several of the items on several of the measures were reworded to be about a sister, which may have changed the established psychometrics of the measure. Additionally, the INCOM was split into two scores, which was not how the measures’ authors had intended it to be used. Lastly, there were a considerable number of cases with missing data. Part of the reason for this limitation was likely that I asked too many questions; many participants stopped filling out the survey before finishing.

Strengths

Some of the strengths of this study included demographic representation and a wide range of eating habits. The demographics (specifically ethnicity) mirror well the population of individuals with eating disorders. This population is predominantly White, as was the sample for this study (Wildes & Emery, 2001). In addition, the sample consisted of individuals with a wide
range of eating pathology; some had none at all, some had restrictive or binge-purge tendencies and some were obese. This provided the opportunity to determine whether sibling relationship variables were related to eating pathology of all types, and gave more power to the analysis. The findings were consistent with what would be expected based on the literature on particularistic targets. When individuals compare themselves or compete with people who are similar to them, the comparison or competition is more salient and the outcome has a greater effect on their self-concept. In this study, women who were more competitive with their sisters had higher levels of eating pathology than women who tended to be competitive in general, with general targets.

Implications

Perhaps the primary implication of these findings is the importance of the assessment of sibling relationships for individuals with eating disorders. Competitiveness between sisters may be important to assess for in women at risk for eating pathology, as exploring the competition in treatment may be beneficial. Conversely, if female siblings are competitive, practitioners may want to assess for eating pathology. It may be that ameliorating the sibling relationship is a worthwhile treatment goal and may improve eating disorder symptoms (or vice versa: reducing eating pathology may lessen competition between sisters). The results of this study support the treatment literature that encourages family involvement in the treatment of eating disorders. The results of this study provide a better picture of eating disorders and the associated risk factors. Knowing that sister competition may be predictive of future eating disorders helps us understand the etiology of these disorders and could improve preventative care.
References


Eating Concerns and Female Sibling Relationships IRB# 215-09 Preston

You are being invited to participate in a research survey about eating concerns and female sibling relationships. Participation in this survey is completely voluntary. This research is being conducted by Stephanie Preston and Daniel Munoz, Ph.D. of Pacific University’s School of Professional Psychology.

This online survey is essentially anonymous and will not collect any personal identifying information about you or the internet protocol (IP) address of the computer from which you submit the survey. The results of this research may be presented or published in the future, but it will not be possible to identify you or your original survey responses.

The survey is being administered via SurveyMonkey.com and will take approximately 20-35 minutes to complete. SurveyMonkey is an online survey distributor and for this survey you will be asked to respond to multiple choice questions and some questions that require further elaboration and filling in the blank. The information collected from the surveys will be stored in a password-protected file on a password-protected computer that is not available for public use.

There is no direct benefit to you as a participant in this research. As with any type of survey research there is a possible risk of emotional discomfort while answering the questions. If you do become uncomfortable during the survey, you may choose to not answer any question or discontinue participation at anytime. If you choose to not answer a particular item, the remainder of your data will still be used. Please feel free to contact the investigator with any concerns. If you notify us that a minor adverse reaction occurred that seems to be a consequence of participating in this study (e.g., an anxiety attack), the investigators must notify the IRB by the next normal working day. In the case of more serious adverse events the investigators will notify the IRB within 24 hours.

There is no form of payment for participation in this research. However, you will be given the opportunity to enter your email address into a drawing for a $50 Target e-gift card.

Your decision whether or not to participate in this research will not affect your current or future relations with Pacific University in any way. If you decide to participate, you are free to not answer any question or withdraw at any time without prejudice or negative consequences. No information from the survey will be collected until you submit your responses, thus you may simply close your internet browser window if you choose to discontinue participation prior to completing the survey. However, due to the anonymity of this procedure, once you submit your survey there is no way to remove your responses from the data set.

During your participation in this project it is important to understand that you are not a Pacific University clinic patient or client, nor will you be receiving any form of medical care as a result of your participation in this study. If you are injured during your participation in this study and it is not due to negligence by Pacific University, the researchers, or any organization associated
with the research, you should not expect to receive compensation or medical care from Pacific University, the researchers, or any organization associated with the study.

We will be happy to answer any questions or concerns you may have at any time during the course of the study. You may contact Stephanie Preston at spreston@pacificu.edu or or Daniel Munoz, Ph.D. at danmunoz@pacificu.edu or 503-352-2621. If you are not satisfied with the answers you receive, please call Pacific University’s Institutional Review Board, at (503) 352 – 1478 to discuss your questions or concerns further. All concerns and questions will be kept in confidence.

Please print this page if you would like a copy of this agreement.

*1. Only click on the “I agree to participate” button below if:
• You have read and understand the information above,
• Do not have any questions,
• Are 18 years of age or older and legally able to grant consent, and
• Agree to participate in this study.
☐ I agree to participate.
☐ I do not agree to participate.
Appendix B

Demographics

1. Age _______________
2. Weight (in pounds):_____________________
3. Height:__________ feet _____________ inches
4. Sex
   a. Male  b. Female  c. Other
5. Race (please circle all that apply)
   a. Asian/East Indian
   b. Black/African-American
   c. Hispanic/Latino
   d. Middle Eastern
   e. Native American (continental U.S.)
   f. Native Alaskan/Aleutian
   g. Native Hawaiian/Pacific Islander
   h. White/Caucasian
   i. Other (please specify)___________________________
Appendix C

Iowa Netherlands Comparison Orientation Measure

Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing particularly “good” or “bad” about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like you to indicate how much you agree with each statement below, by using the following scale.

A     B     C     D     E
I disagree                      I agree strongly
strongly

1. I often compare how my sister is doing with how others are doing.
2. I always pay a lot of attention to how I do things compared with how my sister does things.
3. If I want to find out how well I have done something, I compare what I have done with what my sister has done.
4. I often compare how I am doing socially (e.g., social skills, popularity) with my sister.
5. I am not the type of person who compares myself often with my sister. (reversed)
6. I often compare myself with my sister with respect to what I have accomplished in life.
7. I often like to talk with my sister about mutual opinions and experiences.
8. I often try to find out what my sister thinks when facing similar problems as I face.
9. I always like to know what my sister would do in a similar situation.

10. If I want to learn more about something, I try to find out what my sister thinks about it.

11. I never consider my situation in life relative to that of my sister. (reversed)

Upward comparison subscale

1. When it comes to my personal life, I sometimes compare myself with others who have it better than I do.

2. When I consider how I am doing socially (e.g., social skills, popularity), I prefer to compare with others who are more socially skilled than I am.

3. When evaluating my current performance (e.g., how I am doing at home, work, school, or wherever), I often compare with others who are doing better than I am.

4. When I wonder how good I am at something, I sometimes compare myself with others who are better at it than I am.

5. When things are going poorly, I think of others who have it better than I do.

6. I sometimes compare myself with others who have accomplished more in life than I have.

Downward comparison subscale

1. When it comes to my personal life, I sometimes compare myself with others who have it worse than I do.

2. When I consider how I am doing socially (e.g., social skills, popularity), I prefer to compare with others who are less socially skilled than I am.
3. When evaluating my current performance (e.g., how I am doing at home, work, school, or wherever), I often compare with others who are doing worse than I am.

4. When I wonder how good I am at something, I sometimes compare myself with others who are worse at it than I am.

5. When things are going poorly, I think of others who have it worse than I do.

6. I sometimes compare myself with others who have accomplished less in life than I have.
Physical Appearance Comparison Scale

Using the following scale please select a number that comes closest to how you feel:

<table>
<thead>
<tr>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</table>

1. I compare my physical appearance to the physical appearance of my sister.
   
   1 | 2 | 3 | 4 | 5

2. The best way for a person to know if they are overweight or underweight is to compare their figure to the figure of others.
   
   1 | 2 | 3 | 4 | 5

3. At parties or other social events, I compare how I am dressed to how other people are dressed.
   
   1 | 2 | 3 | 4 | 5

*4. Comparing your "looks" to the "looks" of others is a bad way to determine if you are attractive or unattractive.

   1 | 2 | 3 | 4 | 5

5. In social situations, I sometimes compare my figure to the figures of other people.

   1 | 2 | 3 | 4 | 5

* Reverse-scored
Appendix E

Competitiveness Index

Attitude Questionnaire

Instructions: Use the following response scale in answering the items below. Make sure to read each item carefully and circle the number that best represents your answer.

1. I get satisfaction from competing with others. True False
2. It’s usually not important to me to be the best. True False
3. Competition destroys friendships. True False
4. Games with no clear cut winners are boring. True False
5. I am a competitive individual. True False
6. I will do almost anything to avoid an argument. True False
7. I try to avoid competing with others. True False
8. I would like to be on a debating team. True False
9. I often remain quiet rather than risk hurting another person. True False
10. I find competitive situations unpleasant. True False
11. I try to avoid arguments. True False
12. In general, I will go along with the group rather than create conflict. True False
13. I don’t like competing against other people. True False
14. I don’t like games that are winner-take-all. True False
15. I dread competing against other people. True False
16. I enjoy competing against an opponent. True False
17. When I play a game I like to keep scores. True False
18. I often try to out perform others. True   False

19. I like competition. True   False

20. I don’t enjoy challenging others even when I think they are wrong. True   False
Appendix F

Adult Sibling Relationship Questionnaire

For the following questions, please think about the sister with whom you are closest in age.

1. How much do you and this sister have in common?
   1  2    3  4  5
   Hardly at all       Extremely much

2. How much do you talk to this sister about things that are important to you?
   1  2    3  4  5
   Hardly at all       Extremely much

3. How much does this sister talk to you about things that are important to her?
   1  2    3  4  5
   Hardly at all       Extremely much

4. How much do you and this sister argue with each other?
   1  2    3  4  5
   Hardly at all       Extremely much

5. How much does this sister think of you as a good friend?
   1  2    3  4  5
   Hardly at all       Extremely much

6. How much do you think of this sister as a good friend?
   1  2    3  4  5
   Hardly at all       Extremely much

7. How much do you irritate this sister?
   1  2    3  4  5
   Hardly at all       Extremely much

8. How much does this sister irritate you?
   1  2    3  4  5
   Hardly at all       Extremely much

9. How much does this sister admire you?
   1  2    3  4  5
   Hardly at all       Extremely much

10. How much do you admire this sister?
    1  2    3  4  5
    Hardly at all       Extremely much
11. Do you think your mother favors you or this sister more?

1. I am usually favored
2. I am sometimes favored
3. Neither of us is favored
4. My sister is sometimes favored
5. My sister is usually favored

12. Does this sister think your mother favors her or you more?

1. I am usually favored
2. I am sometimes favored
3. Neither of us is favored
4. My sister is sometimes favored
5. My sister is usually favored

13. How much does this sister try to cheer you up when you are feeling down?

1. Hardly at all
2. Extremadamente
3. Sometimes
4. Usually
5. Extremely much

14. How much do you try to cheer this sister up when she is feeling down?

1. Hardly at all
2. Extremadamente
3. Sometimes
4. Usually
5. Extremely much

15. How competitive are you with this sister?

1. Hardly at all
2. Very little
3. Sometimes
4. Usually
5. Extremely much

16. How competitive is this sister with you?

1. Hardly at all
2. Very little
3. Sometimes
4. Usually
5. Extremely much

17. How much does this sister go to you for help with non-personal problems?

1. Hardly at all
2. Very little
3. Sometimes
4. Usually
5. Extremely much

18. How much do you go to this sister for help with non-personal problems?

1. Hardly at all
2. Very little
3. Sometimes
4. Usually
5. Extremely much

19. How much do you dominate this sister?

1. Hardly at all
2. Very little
3. Sometimes
4. Usually
5. Extremely much

20. How much does this sister dominate you?

1. Hardly at all
2. Very little
3. Sometimes
4. Usually
5. Extremely much

21. How much does this sister accept your personality?

1. Hardly at all
2. Very little
3. Sometimes
4. Usually
5. Extremely much
22. How much do you accept this sister’s personality?

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<td>Hardly at all</td>
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23. Do you think your father favors you or this sister more?

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<td></td>
<td>I am usually favored</td>
<td>I am sometimes favored</td>
<td>Neither of us is favored</td>
<td>My sister is sometimes favored</td>
<td>My sister is usually favored</td>
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24. Does this sister think your father favors her or you more?

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<tr>
<td></td>
<td>I am usually favored</td>
<td>I am sometimes favored</td>
<td>Neither of us is favored</td>
<td>My sister is sometimes favored</td>
<td>My sister is usually favored</td>
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25. How much does this sister know about you?

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<td>Hardly at all</td>
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26. How much do you know about this sister?

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<td>Hardly at all</td>
<td>Extremely much</td>
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27. How much do you and this sister have similar personalities?

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<td>Hardly at all</td>
<td>Extremely much</td>
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28. How much do you discuss your feelings or personal issues with this sister?

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<td>Hardly at all</td>
<td>Extremely much</td>
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29. How much does this sister discuss her feelings or personal issues with you?

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<td>Hardly at all</td>
<td>Extremely much</td>
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30. How often does this sister criticize you?

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<tr>
<td></td>
<td>Hardly at all</td>
<td>Extremely much</td>
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31. How often do you criticize this sister?

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<tbody>
<tr>
<td></td>
<td>Hardly at all</td>
<td>Extremely much</td>
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</table>

32. How close do you feel to this sister?

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<tr>
<td></td>
<td>Hardly at all</td>
<td>Extremely much</td>
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</tr>
</tbody>
</table>
33. How close does this sister feel to you?
1 2 3 4 5
Hardly at all Extremely much

34. How often does this sister do things that make you mad?
1 2 3 4 5
Hardly at all Extremely much

35. How often do you do things to make this sister mad?
1 2 3 4 5
Hardly at all Extremely much

36. How much do you think that this sister has accomplished a great deal in life?
1 2 3 4 5
Hardly at all Extremely much

37. How much does this sister think that you have accomplished a great deal in life?
1 2 3 4 5
Hardly at all Extremely much

38. Does this sister think your mother supports her or you more?
1 2 3 4 5
I am usually I am sometimes Neither of My sister is My sister is supported supported us is supported sometimes supported usually supported

39. Do you think your mother supports you or this sister more?
1 2 3 4 5
I am usually I am sometimes Neither of My sister is My sister is supported supported us is supported sometimes supported usually supported

40. How much can you count on this sister to be supportive when you are feeling stressed?
1 2 3 4 5
Hardly at all Extremely much

41. How much can this sister count on you to be supportive when she is feeling stressed?
1 2 3 4 5
Hardly at all Extremely much

42. How much does this sister feel jealous of you?
1 2 3 4 5
Hardly at all Extremely much

43. How much do you feel jealous of this sister?
1 2 3 4 5
Hardly at all Extremely much
<table>
<thead>
<tr>
<th>Question</th>
<th>Scale</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>44. How much do you give this sister practical advice? (e.g. household or car advice)</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>45. How much does this sister give you practical advice?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>46. How much is this sister bossy with you?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>47. How much are you bossy with this sister?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>48. How much do you accept this sister’s lifestyle?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>49. How much does this sister accept your lifestyle?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>50. Does this sister think your father supports her or you more?</td>
<td>I am usually I am sometimes Neither of My sister is My sister is supported supported supported us is supported sometimes supported usually supported</td>
<td></td>
</tr>
<tr>
<td>51. Do you think your father supports you or this sister more?</td>
<td>I am usually I am sometimes Neither of My sister is My sister is supported supported supported us is supported sometimes supported usually supported</td>
<td></td>
</tr>
<tr>
<td>52. How much do you know about this sister’s relationships?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>53. How much does this sister know about your relationships?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>54. How much do you and this sister think alike?</td>
<td>1 2 3 4 5</td>
<td>Hardly at all       Extremely much</td>
</tr>
<tr>
<td>Question</td>
<td>Scale</td>
<td>Response</td>
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</tr>
<tr>
<td>55. How much do you really understand this sister?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extremely much</td>
</tr>
<tr>
<td>56. How much does this sister really understand you?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extremely much</td>
</tr>
<tr>
<td>57. How much does this sister disagree with you about things?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extremely much</td>
</tr>
<tr>
<td>58. How much do you disagree with this sister about things?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
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<td></td>
<td></td>
<td>Extremely much</td>
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<tr>
<td>59. How much do you let this sister know you care about her?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
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<tr>
<td></td>
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<td>Extremely much</td>
</tr>
<tr>
<td>60. How much does this sister let you know she cares about you?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
</tr>
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<td></td>
<td></td>
<td>Extremely much</td>
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<tr>
<td>61. How much does this sister put you down?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extremely much</td>
</tr>
<tr>
<td>62. How much do you put this sister down?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
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<td></td>
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<td>Extremely much</td>
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<tr>
<td>63. How much do you feel proud of this sister?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extremely much</td>
</tr>
<tr>
<td>64. How much does this sister feel proud of you?</td>
<td>1, 2, 3, 4, 5</td>
<td>Nearly at all,</td>
</tr>
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<td></td>
<td></td>
<td>Extremely much</td>
</tr>
<tr>
<td>65. Does this sister think your mother is closer to her or you?</td>
<td>1, 2, 3, 4, 5</td>
<td>Usually closer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sometimes closer</td>
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<tr>
<td></td>
<td></td>
<td>Not closer to either</td>
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<td>Sometimes closer</td>
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<td>Usually closer</td>
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</table>
66. Do you think your mother is closer to you or this sister?

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<tbody>
<tr>
<td></td>
<td>Usually closer to me</td>
<td>Sometimes closer to me</td>
<td>Not closer to either</td>
<td>Sometimes closer to sister</td>
<td>Usually closer to sister</td>
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67. How much do you discuss important personal decisions with this sister?

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<td>Hardly at all</td>
<td>Sometimes</td>
<td>Much</td>
<td>Extremely</td>
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68. How much does this sister discuss important personal decisions with you?

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69. How much does this sister try to perform better than you?

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70. How much do you try to perform better than this sister?

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71. How likely is it that you would go to this sister if you needed financial assistance?

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72. How likely is it that this sister would go to you if she needed financial assistance?

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73. How much does this sister act in superior ways to you?

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<td>Sometimes</td>
<td>Much</td>
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74. How much do you act in superior ways to this sister?

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<td>Sometimes</td>
<td>Much</td>
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75. How much do you accept this sister’s ideas?

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<td>Extremely</td>
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76. How much does this sister accept your ideas?

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</table>
77. Does this sister think your father is closer to her or you?

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<tbody>
<tr>
<td></td>
<td>Usually closer to me</td>
<td>Sometimes closer to me</td>
<td>Not closer to either</td>
<td>Sometimes closer to sister</td>
<td>Usually closer to sister</td>
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</table>

78. Do you think your father is closer to you or this sister?

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<td>Not closer to either</td>
<td>Sometimes closer to sister</td>
<td>Usually closer to sister</td>
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</table>

79. How much do you know about this sister’s ideas?

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<td>Hardly at all</td>
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80. How much does this sister know about your ideas?

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</tbody>
</table>

81. How much do you and this sister lead similar lifestyles?

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Appendix G

Eating Attitudes Test-26

1. I am terrified about being overweight.
   always usually often sometimes rarely never

2. I avoid eating when I am hungry.
   always usually often sometimes rarely never

3. I find myself preoccupied with food.
   always usually often sometimes rarely never

4. I have gone on eating binges where I feel I may not be able to stop.
   always usually often sometimes rarely never

5. I cut my food into small pieces.
   always usually often sometimes rarely never

6. I am aware of the calorie content of foods I eat.
   always usually often sometimes rarely never

7. I particularly avoid foods with high carbohydrate content (bread, rice, potatoes, etc.)
   always usually often sometimes rarely never

8. I feel that others would prefer if I ate more.
   always usually often sometimes rarely never

9. I vomit after I have eaten.
   always usually often sometimes rarely never

10. I feel extremely guilty after eating.
    always usually often sometimes rarely never
11. I am preoccupied with a desire to be thinner.
always usually often sometimes rarely never
12. I think about burning up calories when I exercise.
always usually often sometimes rarely never
13. Other people think I’m too thin.
always usually often sometimes rarely never
14. I am preoccupied with the thought of having fat on my body.
always usually often sometimes rarely never
15. I take longer than others to eat my meals.
always usually often sometimes rarely never
16. I avoid foods with sugar in them.
always usually often sometimes rarely never
17. I eat diet foods.
always usually often sometimes rarely never
18. I feel that food controls my life.
always usually often sometimes rarely never
19. I display self-control around food.
always usually often sometimes rarely never
20. I feel that others pressure me to eat.
always usually often sometimes rarely never
21. I give too much time and thought to food.
always usually often sometimes rarely never
22. I feel uncomfortable after eating sweets.
23. I engage in dieting behavior.
always usually often sometimes rarely never

24. I like my stomach to be empty.
always usually often sometimes rarely never

25. I have the impulse to vomit after meals.
always usually often sometimes rarely never

26. I enjoy trying new, rich foods.
always usually often sometimes rarely never

27. Have you gone on eating binges where you feel that you may not be able to stop? (Eating much more than most people would eat under the circumstances).
   a. No b. Yes (if Yes, how many times in the past 6 months?________________)

28. Have you ever used diet pills, laxatives, or diuretics (water pills) to control your weight or shape?
   a. No b. Yes (if Yes, how many times in the past 6 months?________________)

29. Have you ever made yourself sick (vomited) to control your weight or shape?
   No b. Yes (if Yes, how many times in the past 6 months?________________)