The relationship between mothers' eating restraint and their children's attitudes and behaviors

NICOLE M. RUTHER and CHARLES L. RICHMAN
Wake Forest University, Winston-Salem, North Carolina

Dieting practices and beliefs of fourth-grade children and their mothers were studied. The children's self-esteem, locus of control, and eating restraint were also assessed. Fifty children and their mothers were administered an eating restraint scale. The children were also administered self-esteem and locus of control scales. Although the children's eating restraint, self-esteem, and locus of control were not related, the mothers' eating restraint was found to be positively related to their daughters' eating restraint and internality scores. No relationship was found between the mothers' eating restraint and their sons' eating restraint and internality scores. The results are discussed in terms of same-sex identification processes.

In the 1990s, society emphasizes being thin and "looking right." Slender models in magazines are portrayed as the "ideal." Such media presentations affect the attitudes of people at all ages. In a survey in London, researchers found that 12-year-old children considered themselves too fat and coped with these feelings by eating less. In addition, these preadolescents reported guilt when they ate too much (Collins, 1988). Although children may learn the attractiveness of being thin from society, another influential component may be their parents' attitudes toward food, eating, and eating restraint.

In children's early years, particularly mothers exert a strong and direct influence over their children's behavior (see, e.g., Patterson, 1982). In addition to such direct control, mothers may also indirectly influence their children's behavior through modeling (see, e.g., Bandura, 1977; Mowrer, 1960). Thus, it is plausible to assume that young children's eating behaviors are at least partially due to such direct reinforcement or modeling. Bandura and Huston (1961) and Zimmerman and Koussa (1979) have shown that affectionate and rewarding models are frequently imitated. If we assume that most mothers are affectionate toward their children, as well as powerful influences, on the behaviors and attitudes of their children, these findings suggest further reasons for why children may imitate their mothers' behavior, including their eating behaviors (Mazur, 1990). In addition to assessing the relationship between the eating behaviors of mothers and their children, we carried out this study to provide data relevant to the understanding of the development of pre-clinical symptoms of eating disorders.

When individuals diet through restricting the foods they consume, they exhibit eating restraint, which is most extreme in anorexics. Restrictor anorexics are characterized by voluntary weight loss, which they accomplish by consuming abnormally small amounts of food (Schlundt & Johnson, 1990). Control is an issue for anorexics. Since adult anorexics feel helpless in controlling the rest of their lives, they exert control over their eating (Rezek & Leary, 1991). As Bruch (1988) suggested, by limiting their consumption, anorexics increase control over the environment: eating is the one behavior anorexics may control (Rezek & Leary, 1991). Bruch (1973) also asserted that by maintaining control over their own bodies anorexics are attempting to create their own identities (Harding & Lachenmeyer, 1986).

These perspectives suggest that anorexics possess an external locus of control regarding their environment and, as a result, strive for control over their bodies. Employing Reid and Ware's (1974) multidimensional I-E Scale, Harding and Lachenmeyer (1986) reported support for this model by showing that 30-year-old anorexics were external. However, Strober (1982), who used Nowicki and Strickland's (1973) I-E Scale, found that adolescent anorexics demonstrated an internal locus of control. Evidently, the relationship between locus of control, chronological age, and anorexia is not clear. Hood, Moore, and Garner (1982), however, suggested that anorexics demonstrated an increase in externality as they grew older. Certainly, the different measures used by Harding and Lachenmeyer (1986) and Strober (1982) may account for their different results. Based on the age of the children tested, in accordance with Strober's (1982) findings, a direct relationship between eating restraint and internality was predicted.

Another factor related to anorexia is low self-esteem (Cooper & Taylor, 1988; Grant & Fodor, 1986; Post & Crowther, 1985; Willmuth, Leitenberg, Rosen, & Cadot,

This study was supported by the Wake Forest University Research and Publication Fund and was a Senior Honor Thesis conducted by the first author. Reprint requests should be sent to C. L. Richman, Psychology Department, Wake Forest University, Winston-Salem, NC 27109.

1988). Grant and Fodor (1986) found that self-esteem was the most influential factor in predicting anorexic behaviors in children between the 10th and 12th grades. It should be noted that Mendelson and White (1985) assessed the relationship between self- and body-esteem in overweight and average weight children and found that, in general, girls had lower body-esteem than boys did.

The present study examined the dieting practices and beliefs of fourth-grade children. An interest in restricting food to lose weight has been identified in 12-year-olds (Collins, 1988); therefore, 9- and 10-year-olds were employed here to determine whether similar attitudes occur prior to age 12. In addition to completing open-ended questions concerning dieting and our subjects' knowledge of it, they also completed an eating restraint questionnaire. The relationship between self-esteem, locus of control, and eating restraint was also assessed. Given previous findings (e.g., those of Grant & Fodor, 1986), children with higher eating restraint were expected to have lower self-esteem. Generalizations from adult anorexic studies to the present research would suggest that external locus of control and eating restraint should be directly related (Harding & Lachenmeyer, 1986), whereas Strober's (1982) results would predict an inverse relationship between external locus of control and preadolescent eating restraint.

Because mothers exert control over their children's eating, we also examined the possible relationship between mothers' and their children's eating restraint scores. Since they often imitate their mothers, children's eating restraint scores were expected to be directly related to those of their mothers.

Recently, Hill, Weaver, and Blundell (1990) found a positive relationship between the eating restraint of mothers and their daughters, but they did not assess this association between mothers and their sons. Several investigators have shown that daughters' relative to sons' response patterns are more similar to their mothers'. For example, Smith, Burleigh, Sewell, and Krisak (1984) found that the MMPI profiles of 15½-year-old girls and their mothers were similar but that mother-son profiles were not. Thus, one of the primary objectives of the present study was to assess the eating restraint of mothers as it relates to their daughters and sons.

Gender differences were anticipated. Grant and Fodor (1986) estimated that 90%–95% of anorexics are female, and Klem, Klesges, Bene, and Mellon (1990) found that women had higher eating restraint scores. In accordance with these findings, we expected girls to have higher restraint scores than boys had.

METHOD

Subjects

The subjects were 50 fourth-grade school students, high socioeconomic status—28 girls and 22 boys from four private schools in North Carolina—and their mothers. Because 6 of the mothers did not return their questionnaires, the data from only 44 subjects—26 girls and 18 boys—were used when the mothers' eating restraint scores were analyzed.

Materials

Each child received a packet containing four different questionnaires. The Piers-Harris Children's Self-Concept Scale (PHCSC) was used to measure self-esteem with a focus on physical self-esteem (Piers, 1969). The scale consisted of 80 statements to which the child responded "yes" or "no." General self-esteem was assessed with the use of a list of 10 positive (*kind, good, happy, pretty/handsome, friendly, clean, smart, healthy, strong, and helpful*) and 10 negative (*mean, sad, dirty, selfish, ugly, unfriendly, weak, stupid, bad, and sick*) adjectives taken from self-concept scales used in previous research (Inderbitzen & Best, 1986; Williams, Best, Boswell, Mattson, & Cadot, 1975) and the total PHCSC scores.

Additionally, the children were administered the Stanford Preschool Internal-External Scale (SPIES) to assess locus of control (Mischel, Zeiss, & Zeiss, 1974). The test consists of 14 scenarios with two alternative responses. One response indicates internal, and the other, external locus of control.

Lastly, the children completed a modified child version of the Herman and Polivy (1975) Restraint Scale, devised by Davis, Best, and Hawkins (1981), to measure their dieting concern and eating behaviors. The original adult restraint scale was administered to the subjects' mothers.

Testing occurred in groups ranging in size from 7 to 22 subjects, at the children's school. The testing session lasted 40 min. Each child received a packet containing all the questionnaires: the PHCSC, the adjective checklist, the SPIES, and the Eating Restraint Scale.

After the children opened the packets, the experimenter instructed them to write their names on the first questionnaire, to answer each question, and to answer the questionnaires in the order in which they found them. The order of the questionnaires varied randomly. Finally, the experimenter instructed the subjects to answer the questions the best that they could since there were no right or wrong answers. The experimenter remained in the room to answer questions. After the children completed testing, they received the Adult Eating Restraint questionnaire to take home for their mothers to complete.

The PHCSC was scored according to the standard method: the higher the score, the higher the child's self-esteem. The standard method, from Mischel, Zeiss, and Zeiss (1974), was used to code the SPIES scores. On this test a high score indicates a more internal locus of control.

Finally, the Eating Restraint Scale for the children consisted of 30 questions. While 15 of these questions were used to compile the eating restraint score, the other 15 were utilized for descriptive means. Analyses were performed on the following questions: (1) How much do you weigh? (2) How much would you like to weigh? and (3) What does it mean to go on a diet? The first two questions were compared to determine whether the subjects wished to gain or to lose weight. Although the responses may not reflect the children's knowledge of their actual weight, they do indicate the children's interest in gaining or losing weight. The answers to the third question were predominantly categorized in terms of either eating healthy or losing weight. Both the children's version and the test sent home to mothers were scored according to the methods suggested by Davis et al. (1981; see also Herman and Polivy, 1975). On these tests, a high score indicated high eating restraint.

RESULTS

In analyzing the data, Pearson product moment correlations were performed for the genders combined and for the girls and boys individually. The genders-combined scores showed that the PHCSC and the adjective checklist were positively correlated [$r(42) = .62, p < .05$], so the two measures of self-esteem were positively related. Mothers' eating restraint scores ($M = 38.4, SD = 22.6$) were positively correlated to (1) their children's internal locus of control scores [$r(42) = .33, p < .05$] and (2) their children's eating restraint [$r(42) = .29, p < .05$]. Thus, mothers who scored high on the eating re-

Table 1
Correlations Between Mothers' Eating Restraint and All Childrens',
Daughters', and Sons' Eating Restraint Scores, Self-esteem, and Locus of Control

	Piers Harris Physical Self-esteem	Piers Harris Total Self-esteem	Adjective Check List	Locus of Control (Internal)	Children's Eating Restraint
All children	+ .07	+ .09	+ .01	+ .33*	+ .29*
Daughters	+ .10	+ .10	+ .08	+ .53*	+ .35*
Sons	+ .10	+ .07	-.14	+ .05	+ .09

* $p < .05$.

straint scale had children who scored high on the internal locus of control scale and on the eating restraint scale. A relationship was not found between the children's eating restraint measure and either their own internal locus of control scores [$r(42) = -.01, p > .10$] or their self-esteem scores [$r(42) = -.28, p > .10$]. The correlations between mothers' eating restraint scores and their children's, daughters', and sons' locus of control, self-esteem, and eating restraint scores are found in Table 1.

The girls' data showed that the mothers' eating restraint was positively correlated with their daughters' [internal locus of control, $r(24) = .53, p < .05$; eating restraint, $r(24) = .35, p < .05$]. The boys' scores, however, on these factors were unrelated to their mothers' scores ($ps > .10$; see Table 1).

Another relationship that arose in the girls' data, but not in the boys', was that between the children's internal locus of control and their adjective checklist scores. Girls who rated themselves more positively on the adjective checklist also reported that they were in control of their environment [$r(24) = .43, p < .05$]; the boys did not show this relationship ($p > .10$).

On t tests performed between boys' ($M = 12.3$) and girls' ($M = 12.5$) eating restraint scores as well as boys' ($M = 7.8$) and girls' ($M = 7.7$) locus of control scores, there were no effects of gender difference ($ts < 1.0$). Finally, girls ($M = 7.9$) had a significantly lower physical self-esteem than did boys ($M = 9.7$; $t(48) = 2.55, p < .05$].

Analyses of the children's understanding of dieting and their desire to gain or to lose weight were performed through assessment of their answers on the open-ended questions of the eating restraint questionnaire. Fifty-seven percent of the girls and 60% of the boys reported that dieting meant healthy eating and 39% of the girls and 34% of the boys reported that it meant to lose weight ($p > .10$). Additionally, 46% of the girls and 67% of the boys stated that they wanted to lose weight [$\chi^2(1) = 2.37, p > .10$], whereas 35% of the females and 14% of the males said they needed to gain weight ($p > .10$). The same percentage of both girls and boys reported that their weight was where they wanted it (19% of both groups).

DISCUSSION

The primary aim of the present study was to assess several personality characteristics of male and female fourth graders in relation to their own and their mothers' eating restraint scores. In accordance with Hill

et al. (1990), we found that the girls' eating restraint scores were directly related to their mothers' scores. A relationship did not exist, however, between mothers' eating restraint scores and their sons'. Perhaps mothers are more concerned with the weight fluctuations of their daughters' than with those of their sons, or perhaps mothers as models have a stronger impact on their daughters' than on their sons' behavior; perhaps girls are more receptive to their mothers' behavior than are boys.

In addition, mothers' eating restraint scores were positively related to their daughters' internal locus of control scores. Again, this relationship was not found between the mothers' and sons' scores. One explanation for these findings is that mothers may have a greater influence on their daughters because girls tend to identify with their mothers more than do sons as a result of same-sex identification processes (see, e.g., Burnstein, Stotland, & Zandor, 1961; Davidson & Smith, 1982). Perhaps the mothers' taking control of their food intake encourages the daughters to do the same. Also, as girls note this control, they may believe that they can control other factors in their environment, resulting in the girls' high degree of internal locus of control.

Strober (1982) found that adolescent anorexia and internal locus of control were positively related. The present research, which shows that 10-year-old daughters' internal locus of control was associated with their mothers' eating restraint scores, partially supports Strober's findings; however, the children's own eating restraint was not found to be related to their locus of control scores. It is acknowledged that eating restraint is only one factor involved in anorexia and that other pathological behaviors/attitudes associated with anorexia are necessary for the relationship between anorexia (or the anorexic's eating restraint) and locus of control to occur.

In addition to comparing the children's eating restraint scores with their mothers' scores, we also compared the girls' and boys' eating restraint scores. In contrast to Klem et al. (1990), who found that female adults had higher eating restraint scores than male adults did, we did not find gender differences. This may indicate that gender differences in eating restraint develop later than 10 years of age. Future research with early and late adolescents should either confirm or disconfirm this hypothesis.

The present results indicated that the girls had lower physical self-esteem scores than did the boys, which is consistent with Mendelson and White's (1985) findings. What is also noteworthy is that girls had no greater concern for losing weight than did boys. In fact, 20% fewer girls than boys wanted to lose weight, and twice the percentage of the girls relative to the boys wanted to gain weight. In contrast to the present findings, Connor-Greene (1988) found that college-aged males wanted to gain rather than lose weight. One explanation for her findings might be that many adolescent boys want to gain weight so that they may compete in contact sports (see, e.g., Moore & Richman, 1991). However, 10-year-old, upper middle-class males rarely compete in such sports as tackle football or wrestling in their schools. Only during or after junior high school are these contact sports offered. Although this is one possible explanation for why few of the fourth-grade boys in the present study wanted to gain weight, it does not explain why they wanted to lose weight. Such findings were unexpected, and no explanations are presently offered.

Since the girls had lower physical self-esteem than the boys had, a logical assumption would be that a greater percentage of the girls would want to alter their weight. This was not the case, however. In the present study, an equal percentage (81%) of both genders wanted to alter their figures by either gaining or losing weight. One possible explanation is that although boys may be interested in altering their weight, they do

not allow their weight to affect their self-esteem. Unlike girls, who may put more emphasis on their bodies, boys do not base their self-perceptions on their weight.

Concerning modeling and its impact on the development of attitudes toward eating and body weight, on-going research will provide data obtained from fathers. A relationship between boys' and their mothers' eating restraint was not found, but the boys' scores may be related to their fathers' eating restraint scores. If such a relationship is found, it would provide support for a same-sex identification model with regard to eating—that is, children assimilate their same-sexed parents' views of eating and dieting. Presently, data are not available to either support or refute this hypothesis.

REFERENCES

- BANDURA, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- BANDURA, A., & HUSTON, A. C. (1961). Identification as a process of incidental learning. *Journal of Abnormal & Social Psychology*, **63**, 311-318.
- BRUCH, H. (1973). Psychiatric aspects of obesity. *Psychiatric Annals*, July, **3**(7), 6-10.
- BURNSTEIN, E., STOTLAND, E., & ZANDER, A. (1961). Similarity to a model and self-evaluation. *Journal of Abnormal & Social Psychology*, **62**, 257-264.
- COLLINS, M. E. (1988). Education for healthy body weight: Helping adolescents balance the cultural pressure for thinness. *Journal of School Health*, **58**, 227-231.
- CONNOR-GREENE, P. A. (1988). Gender differences in body weight perception and weight-loss strategies of college students. *Women & Health*, **14**, 27-42.
- COOPER, P. J., & TAYLOR, M. J. (1988). Body image disturbance in bulimia nervosa. Second Leeds Psychopathology Symposium: The psychopathology of body image (1986, Leeds, England). *British Journal of Psychiatry*, **153**, 32-36.
- DAVIDSON, E. S., & SMITH, W. P. (1982). Imitation, social comparison, and self-reward. *Child Development*, **53**, 928-932.
- DAVIS, S. W., BEST, D. L., & HAWKINS, R. C., II. (1981). *Sex stereotypes, weight and body image in childhood and adolescence*. Paper presented at the meeting of the Society for Research in Child Development, Boston, MA.
- GRANT, C. L., & FODOR, I. G. (1986). Adolescent attitudes toward body image and anorexic behavior. *Adolescence*, **21**, 269-281.
- HARDING, T. P., & LACHENMEYER, J. R. (1986). Family interaction patterns and locus of control as predictors of the presence and severity of anorexia nervosa. *Journal of Clinical Psychology*, **42**, 440-448.
- HERMAN, C. P., & POLIVY, J. (1975). Anxiety, restraint and eating behavior. *Journal of Abnormal Psychology*, **84**, 666-672.
- HILL, A. J., WEAVER, C., & BLUNDELL, J. E. (1990). Dieting concerns of 10-year-old girls and their mothers. *British Journal of Clinical Psychology*, **29**, 346-348.
- HOOD, J., MOORE, T. E., & GARNER, D. M. (1982). Locus of control as a measure of ineffectiveness in anorexia nervosa. *Journal of Consulting & Clinical Psychology*, **50**, 3-13.
- INDERBITZEN, H. M., & BEST, D. L. (1986). Children's attitudes toward physically handicapped peers. *Journal of Applied Developmental Psychology*, **7**, 417-428.
- KLEM, M. L., KLESGES, R. C., BENE, C. R., & MELLON, M. W. (1990). A psychometric measure of restraint: The impact of race, gender, weight and marital status. *Addictive-Behavior*, **15**, 147-152.
- MAZUR, J. E. (1990). *Learning & Behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- MENDELSON, B. K., & WHITE, D. R. (1985). Development of self-body-esteem in overweight youngsters. *Developmental Psychology*, **21**, 90-96.
- MISCHEL, W., ZEISS, R., & ZEISS, A. (1974). Internal-external control and persistence: Validation and implications of the Stanford Preschool Internal-External Scale. *Journal of Personality & Social Psychology*, **29**, 265-278.
- MOORE, S., & RICHMAN, C. L. (1991, June). *Guilt for missing a workout and low self-esteem of students who report looks as their primary motivation to exercise*. Paper presented at the American Association of Applied and Preventive Psychology, Washington, DC.
- MOWRER, O. H. (1960). *Learning theory and the symbolic processes*. New York: Wiley.
- NOWICKI, S., & STRICKLAND, B. R. (1973). A locus of control scale for children. *Journal of Consulting & Clinical Psychology*, **40**, 148-154.
- PATTERSON, G. R. (1982). *Coercive family processes*. Eugene, OR: Castilia Press.
- PIERS, E. V. (1969). *Manual for the Piers-Harris Children's Self-Concept Scale*. Nashville, TN: Counselor Recordings and Tests.
- POST, G., & CROWTHER, J. H. (1985). Variables that discriminate bulimic from nonbulimic adolescent females. *Journal of Youth & Adolescence*, **14**, 85-98.
- REID, D. W., & WARE, E. E. (1974). Multidimensionality of internal versus external control: Addition of third dimension and non-distinction of self versus others. *Canadian Journal of Behavioral Science*, **6**, 131-142.
- REZEK, P. J., & LEARY, M. R. (1991). Perceived control, drive for thinness and food consumption: Anorexic tendencies as displaced reactance. *Journal of Personality*, **59**, 129-142.
- SCHLUNDT, D. G., & JOHNSON, W. G. (1990). *Eating disorders: Assessment and treatment*. Boston: Allyn & Bacon.
- SMITH, P. E., BURLEIGHT, R. L., SEWELL, W. R., & KRISAK, J. (1984). Correlation between the Minnesota Multiphasic Personality Inventory profiles of emotionally disturbed adolescents and their mothers. *Adolescence*, **19**, 31-38.
- STROBER, M. (1982). Locus of control, psychopathology, and weight gain in juvenile anorexia nervosa. *Journal of Abnormal Child Psychology*, **10**, 97-105.
- WILLIAMS, J. E., BEST, D. L., BOSWELL, D. A., MATTSON, L. A., & GRAVES, D. J. (1975). Preschool racial attitude Measure II. *Educational & Psychological Measurement*, **35**, 3-18.
- WILLMUTH, M. E., LEITENBERG, H., ROSEN, J. C., & CADOR, S. (1988). A comparison of purging and nonpurging normal weight bulimics. *International Journal of Eating Disorders*, **7**, 825-835.
- ZIMMERMAN, B. J., & KOUSSA, R. (1979). Social influences on children's toy preferences: Effects of model rewardingness and affect. *Contemporary Psychology*, **4**, 55-66.

(Manuscript received January 4, 1993.)