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OBESITY, CHILD-FEEDING ATTITUDES, AND REACTIVE EATING: AN INTERGENERATIONAL STUDY

by

Cosby Steele Rogers

A Dissertation Submitted to
the Faculty of the Graduate School
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of the Requirements for the Degree
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Approved by

Helen Canaday
Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

Dissertation Adviser _____

Committee Members _____

_____

_____

_____

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ROGERS, COSBY STEELE. Obesity, Child-Feeding Attitudes, and Reactive Overeating: An Intergenerational Study. (1977)
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The present study was conducted in order to assess the relationships among levels of obesity/leanness, reactive eating, and child-feeding attitudes of a group of college women and the child-feeding attitudes of the students' mothers. The four types of child-feeding attitudes which were of interest in this study were those related to the use of food as: (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection. A 30-item Likert Scale called the Child-Feeding Opinion Questionnaire (CFOQ) was developed to assess these attitudes among the students and mothers. A six-item reactive eating scale was developed to assess the frequency and magnitude of anxiety-related overeating among college students. Triceps skinfold thickness measurements were used as an index of obesity/leanness among daughters.

Subjects for the study included 221 college women and their mothers (Total N = 442). The investigation was conducted in Blacksburg, Virginia where the daughters were students at Virginia Polytechnic Institute and State University.

Pearson correlation coefficients computed between mothers' and daughters' scores on each subscale of the CFOQ were generally low. There were no significant relationships between the degrees of obesity/leanness among the college women and their own child-feeding attitudes as measured by scores on the CFOQ scales. There were also no significant relationships between the daughters' degrees of obesity/leanness and their mothers' CFOQ subscale scores. Reactive eating scores of the college women were related to neither their own nor their mothers' CFOQ scores.

Daughters' reactive eating scores were positively correlated with their skinfold thickness measurements ($r = .19$, $p. < .005$).

Among college daughters, the following CFOQ subscale scores were significantly and positively related: (a) Reward and Punishment ($r = .45$, $p. < .0001$); (b) Reward and Soothing ($r = .49$, $p. < .0001$); (c) Reward and Affection ($r = .35$, $p. < .0001$); (d) Punishment and Affection ($r = .15$, $p. < .05$); and (e) Soothing and Affection ($r = .59$, $p. < .0001$).

Among mothers, the following CFOQ subscale scores were significantly and positively related: (a) Reward and Punishment ($r = .40$, $p. < .0001$); (b) Reward and Soothing ($r = .49$, $p. < .0001$); (c) Reward and Affection ($r = .42$, $p. < .0001$); and (d) Soothing and Affection ($r = .60$, $p. < .0001$).

When responses to each item on the CFOQ were coded into an "agree" or "disagree" category, chi-square comparisons between mothers' and daughters' responses yielded significant differences on 17 of the 30 statements. Only one item on subscale Reward yielded significantly different responses from mothers versus daughters. Six of the seven items on subscale Punishment yielded differences between mothers and daughters; six of the nine items on subscale Soothing and three of the seven items on subscale Affection yielded significant differences. Examination of the items which yielded differences between mothers and daughters indicated that, in general, more daughters than mothers favored the use of food in a contingent manner. More daughters than mothers favored the giving of favorite foods to reward school grades. Likewise, more daughters than mothers favored the withholding of food to punish undesirable behaviors. More mothers than daughters favored the use of food for soothing children who are hurt, crying, or studying for tests. However, more daughters than mothers favored snacks for children who

have fallen, sweets for pressured school children, and cookies or crackers for disappointed children. More mothers than daughters agreed with statements indicating that food provides an appropriate vehicle for the expression of affection.

To the extent that the present study showed low correlations between mothers' and daughters' child-feeding attitudes as well as between these attitudes and obesity/leanness or reactive eating among daughters, the findings failed to support an hypothesis found in the literature that child-feeding patterns are related to reactive eating and obesity in adulthood. A low correlation found between reactive eating and obesity/leanness among college women in the sample challenged previous claims that reactive overeating is a key etiological factor in obesity. Several significant intercorrelations found between CFOQ scores for both mothers and daughters indicated that a generalized set of food-related attitudes may exist: i.e., individuals who tended to favor the use of food in a contingency manner for one type of situation also tended to favor its use in other ways. The findings of a number of significant differences between mothers' and daughters' responses to items on the CFOQ could not be fully explained, because of the intergenerational nature of the study. Historical trends, age differences, and experiential factors were discussed as possible contributors to the differences in attitudes of the mothers and daughters.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Obesity is one of the most complex problems facing professionals who are concerned with the physical and psychological well-being of individuals. The successful marketing of a deluge of diet books, weight-loss programs, and reducing aids attests to the magnitude of wide-spread attempts by individuals to control their weight. The fact that the market for weight control aids and programs continues to thrive reflects the reality that attempts by most adults to reduce their body weight are met with transient success and are, therefore, repeated periodically.

Estimates of the prevalence of obesity show wide variability and depend largely on the method of measurement and the criterion used to define obesity. A 1975 Nutrition Surveillance report from the Center for Disease Control (U. S. Public Health Service, 1975) estimated the incidence of obesity when it was defined as weight-for-height above the 95th percentile. The mean incidence for children under 18 years of age was 9.4%. When each sex was considered separately, the rates for males were 9.7% for whites and 8.2% for blacks. For females, the rates were 8.8% for whites and 9.6% for blacks. The incidence of excess weight-for-height was greater in children below age 2 and in girls above age 12 than in other age groups.

The National Center for Health Statistics (1976) reported the prevalence of obesity among adults 20-44 years and 45-74 years of age by race, sex, and income level. The rates ranged from 5.1% for black males below the poverty line (ages 45-74) to 35% for black females below the poverty level (ages 20-44). In general, these statistics indicated that the incidence of obesity was greater among women than among men, especially among persons whose income was below the poverty level. Whereas percentages for women were greater for blacks than for whites, the reverse was true for men.

The widespread incidence of obesity has contributed to the "diet industry" which has been estimated at $10,000,000,000 (Lichtenstein, 1973). American consumers who have supported this diet market have done so for a variety of reasons. Among these reasons are warnings by medical professionals that excess weight is a major health problem correlated with heart disease, diabetes, gall bladder, and other health problems (Friedman, 1975; Glueck, Fallat, & Tsang, 1975; Keys, 1975; Petit, 1974; U. S. Public Health Service, 1966). Other consumers have responded because of a societal attitude that the slender figure is the beautiful one (Allon, 1975; Mayer, 1968). Still others have responded to societal attitudes that obesity is immoral and that fat persons are lazy, self-indulgent, weak willed, neurotic, or even criminal (Allon, 1975; Mayer, 1968).

The idea that obese individuals exhibit a number of psychological problems has been a popular topic of research and speculative discussion (Bruch, 1971, 1973, 1975; Buchanan, 1973; Hirsch, 1975b; Mendelson, 1966;

Salzman, 1972) but it is not known whether these problems are a cause or a result of the weight problems.

Perhaps the most documented problem exhibited by obese individuals is the distorted body-image (Bruch, 1973; Glucksman & Hirsch, 1969; Grinker, Hirsch & Levin, 1973; Hirsch, 1975b; Leon, 1975; Mendelson, 1966; Meyer & Tuchelt-Gallwitz, 1968; Sallade, 1973; Stunkard & Burt, 1967). Other psychological characteristics that have been attributed to the obese include: (a) a tendency toward orality (Bruch, 1969; Friedman, 1972, Mendelson, 1966); (b) overcontrol of emotions and indirect expression of hostility (Atkinson & Ringuette, 1967); (c) deficits in initiative, autonomy, self-control, and self-regulation (Bruch, 1975); (d) schizophrenia (Bruch, 1975); (e) low frustration tolerance (Bruch, 1975); and (f) emotional reactivity (Rodin, 1975). A widely theorized and documented theory of obesity attributes an external orientation to obese individuals (Schachter, 1968, 1971). According to Schachter's theory, the inability of the obese person to restrict his food intake is a result of his responsiveness to external food-related cues, such as the sight and taste of food, and of his inability to sense the internal physiological cues of hunger. A number of research studies have supported Schachter's externality theory (Goldman, Jaffa, & Schachter, 1968; Levitz, 1975; Meyer & Pudel, 1972; Nisbett, 1968; Rodin, 1975; Schachter, Goldman & Gordon, 1968; Stunkard & Koch, 1964; Tom & Rucker, 1975).

Despite an enormous number of clinical observations and empirical investigations on obesity, its etiology remains a complex multifactorial problem which is only partially understood. Etiological variables that

have received the attention of researchers may be categorized as biological or psychological. Biological factors include genetics, metabolic disorders, central nervous system damage, early formation of an excess number of adipose cells, reduced activity level, and excessive food intake. The key psychological factor leading to obesity has been postulated to be a type of overeating that may serve as a defensive reaction to brief or prolonged anxiety (Bruch, 1971, 1973, 1975; Stunkard, 1976).

Research on etiological factors in human obesity remains inconclusive. One possible factor that has been the topic of recent discussion by Bruch (1973, 1975) and by Gifft, Washbon, and Harrison (1972) is the early child-feeding situation. Although these authors seem to agree that early feeding has implications for adult eating patterns, these relationships have not been investigated empirically. The present study is concerned with the child-feeding attitudes among a group of college women and their mothers. The study was designed to assess the relationships of these attitudes to the tendency among daughters to overeat as a response to stress and to the degree of obesity among daughters.

Theoretical Orientation

Early clinical reports of obesity were grounded in a psychoanalytic framework in which early experiences were credited with a prominent role in personality formation (Cameron, 1963). According to this view, many individuals become obese as a result of an extreme oral fixation which may have resulted from frustration or oversatiation in infancy (Bruch,

1969; Mendelson, 1966). Later in life, anxiety is postulated to lead adults to regress in their behavior and to seek comfort through oral stimulation (Friedman, 1972).

A theoretical orientation whose proponents have rejected the basic assumptions and hypotheses of psychodynamic theory is that of behaviorism. According to this orientation, behavior is shaped by environmental experiences and may be increased or extinguished through the proper control and timing of reinforcements (Hilgard & Bower, 1966). Subscribing to the basic postulates of learning theory, behavior modification experts have sought to change eating behaviors of obese individuals through a variety of techniques (Horan, 1974; Jordan & Levitz, 1975; Stuart, 1975; Stunkard, 1974).

Stuart (1975) reviewed 38 studies in which various behavioral techniques were used to help overweight subjects lose weight. Although most of these studies reported success in getting subjects to lose weight, seven studies reported no follow-up to determine whether the weight loss was maintained. In seven studies in which there were follow-ups, subjects had regained weight. Several studies were reported in which the weight loss was continued or maintained, but the follow-ups were conducted after only a few weeks or months. Only two researchers reviewed by Stuart reported maintenance of weight loss after 52 weeks. Only one study reviewed followed subjects beyond 52 weeks and, in that study, subjects had regained all weight lost after 68 weeks.

This discouraging challenge to behaviorists has been especially difficult in view of the fact that food is frequently used as an incentive in behavior modification programs. Despite efforts to offer

alternative incentives for weight loss or to pair food with noxious stimuli, subjects cannot easily be denied all foods and be expected to survive. Almost any eating behavior is automatically reinforcing, especially after deprivation. Thus, the nature of the human subject has complicated the use of learning theory as an explanation for the development of obesity and for the behavioral control of this condition.

Ainsworth and Bell (1969) have described a recent shift in the theoretical orientations of many researchers studying child development. These authors claim that new developments in the study of animal behavior, in Piagetian cognitive theory, and in psychoanalytic theory have been the impetus for the shift. In describing the changes in orientation, they stated:

> The implication is still that there is continuity of development from infancy to later years and that patterns of reaction established in infancy may profoundly influence later development. There has, however, been a subtle shift from the hypothesis that an unalterable personality structure is fashioned through experience in the earliest years to the hypothesis that neonatal, neurophysiological, and behavioral structures are transformed through the infant's earliest transactions with his environment and bias his perceptions, and action patterns so that he responds to subsequent situations at least initially in the light of earlier experience. (p. 134)

The theoretical orientation of the present study represents a similar combination of the principles of psychodynamic theory and of learning theory. The basic tenet is that the reward value of food has its roots in infancy when it is learned in the traditional behavioristic sense of the word. In fact, this type of learning is necessary in order for the infant to survive. The psychodynamic postulation that early oral experiences have implications for personality development may then

be interpreted as being due to a primacy effect in early learning. Further, a learned association between food and psychological comfort may be established in infancy and early childhood. If these years may be considered critical periods for learning such an association, this fact may explain, in part, the poor success record of behavior modification programs for weight control.

One important determinant of early feeding behaviors is the set of child-feeding attitudes held by mothers. The major purpose of the present study was to assess the relationships among levels of obesity/leanness, reactive eating, and child-feeding attitudes of a group of college women and the child-feeding attitudes of these students' mothers.

Background for the Study

Although numerous investigations have identified several etiological factors in obesity, much of this research has been conducted with animals. There is little conclusive evidence regarding the etiology of obesity in humans. Bruch (1971, 1973, 1975) attributes the lack of a clear-cut etiological picture for humans to the tendency of researchers to study obese individuals as though all belong to the same group. To advance the usefulness of research in this area, she suggested that the various forms of obesity need to be differentiated. One type of grouping that has been used involves classification according to the age of onset of the obese condition (Grinker, Hirsch, & Levin, 1973). Jeffrey (1974) discussed some of the methodological inconsistencies in research on obesity and, among other things, suggested that individual subjects' data be reported along with group means. This suggestion was made on

the basis that patients with different learning histories would respond differently to various behavior modification programs.

Stunkard (1976) classified obese conditions according to the eating patterns identified. He described two very interesting eating patterns by highly anxious subjects, i.e., the "night eating syndrome" and the "binge eating" pattern.

Bruch (1973) delineated two groups of patients in whom obesity was related to psychological problems - "developmental" obesity and "reactive" obesity. Descriptions of these two types of obesity have been given by Bruch, who suggested that developmental obesity has its onset in childhood, is intrinsically interwoven with the whole development of the child, and is characterized by features of personality disturbance. She suggested that when children reach adolescence their problems are similar to premorbid personality problems of schizophrenics.

In describing reactive obesity, Bruch (1973) stated:

> Reactive obesity is the form more commonly observed in adults. The obesity seems to develop in response to an emotional trauma, frequently to the death of someone close to the patient, or when fear of death or injury is aroused. Overeating and obesity appear to serve the function of warding off anxiety or a depressive reaction. (p. 126)

> Reactive obesity is the pattern of the more mature person, who has often been exposed to. . .early psychological conditioning. Such people are often aware that they eat more when they feel worried or tense, and feel less effective and competent when they try to control their food intake. They are often referred to as compulsive eaters, and they are aware of the difference between real hunger and this neurotic need for food. (p. 127)

The mechanism by which individuals develop reactive obesity has been a topic of recent discussion (Bruch, 1971, 1973, 1975; Gifft, Washbon & Harrison, 1972). These writers are generally in agreement

that overeating as a mechanism for coping with anxiety is a behavior which has its roots in early feeding situations. Bruch (1975) stated:

> Behavior, from birth on, needs to be differentiated into two forms, namely that initiated in the individual, and that in response to stimuli from without. For normal development it is essential that there are sufficient appropriate responses to clues originating in the child, in addition to stimulation from the environment. This applies to all areas of development. How it operates can be observed in the feeding situation, which is also the area in which there is most interaction between mother and infant during the first year of life. When the mother offers food only in response to signals indicating nutritional need, the growing child will gradually develop a definite concept of hunger, as something to be appeased by food and as a sensation distinct from other tensions or needs which require other activities for their relief. (p. 112)

Writing on the same topic, Gifft, Washbon and Harrison (1972) stated:

> All mothers perceive crying in babies as problem behavior. . .Offering food will usually quiet a crying baby, even when he cries for quite a different reason than hunger. Bruch thinks that feeding a child every time he indicates displeasure for any reason is an unwise practice. It ties the feeding process too emotionally close to the relief of all troubles. Discerning mothers learn when a cry means hunger, but mothers who automatically seek solution to a crying problem by offering food may be developing worse problems when the child is older. People can become obese because they invariably turn to food as a way to cope with all frustration. (p. 80)

Although Bruch (1971, 1973, 1975) and Gifft, Washbon, and Harrison (1972) seem to agree that mother-infant interaction in the feeding situation has implications for the older child's food intake patterns, no research was found that dealt directly with this issue. Therefore, the present study was designed to assess one aspect of the early feeding situation: i.e., maternal child-feeding attitudes and the relationship of these attitudes to reactive overeating, obesity and child-feeding

attitudes among the offspring of the mothers studied.

The early infant feeding situation was the focal point of discussion by Bruch (1971, 1973, 1975) and by Gifft, Washbon, and Harrison (1972) as precursors for later reactive overeating. No references were found which claimed that the feeding patterns in the preschool and later childhood years contribute to reactive overeating. However, this idea would appear to be a logical extension of the infant-learning hypothesis.

Wagner (1953) reported on changes in feeding policies for children at the Merrill-Palmer School in Detroit. Although, at one time, dessert was not allowed until other food had been eaten, the policy was changed so that dessert became part of the meal. This change in policy reflected an effort to avoid classifying eating as a moral behavior. Wagner indicated attaching a prize or reward value to the "wrong" foods makes them even more desirable.

Spock and Lowenberg (1955) warned against the use of candy as a bribe for eating other foods or for being good. However, they recommended that candy and other sweets be reserved for special or festive occasions. The pairing of dessert with special occasions or with social reward for "being good" may have actually increased its salience for the reactive overeaters.

An hypothesis implied in the present study dealt with the use of food in the preschool and schoolage years. The parental use of food as a soothing agent, as a reinforcement, or as a symbol of affection may have increased the reward value of that food for many children. As the children became adults who could control their own food intake, they could supply their own rewards when comfort was needed. The present

study sought to determine attitudes of a group of mothers as they pertained to the use of food as a vehicle for communicating reward, punishment, comfort, and affection.

One study sought to determine the frequency of the parental use of food as a reward or punishment. Kram and Owen (1972) reported on such use of food by low-income parents. The percentages for various income groups as reported by Kram and Owen are listed in Table 1.

Table 1

Parental Use of Food to Reward or to Punish

	Income Quartile	12-23 months		24-47 months	
		Reward	Punish	Reward	Punish
I	($0-$900)	44	22	57	26
II	($901-$1,300)	42	17	56	29
III	($1,301-$1,900)	40	19	45	30
IV	($1,901-$6,700)	23	6	43	23

Note.--Adapted from Kram and Owen, 1972, p. 14.

The data reported in the Kram and Owen survey indicated that a clear majority of these low-income parents did not use food to punish children, but the percentages were higher for the use of food as a reward. No studies which had been done to determine the percentage of middle-class parents who use food as either a reward or punishment were readily available. One aim of the present study was to determine whether a relationship exists between attitudes on the use of food as a reward, a punishment, a soothing technique, or an expression of affection and reactive eating or obesity among college students.

Statement of the Problem

The present study was designed to assess the child-feeding attitudes among a group of college women and their mothers. The study sought to determine the relationship between the attitudes of the mothers and those of their daughters and to assess the relationships between these attitudes and the tendency among the daughters to overeat when they are anxious. One further purpose of the study was to determine the relationship between child-feeding attitudes and the daughters' degrees of obesity or leanness.

The child-feeding attitudes which were of concern in this study included attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection. The Child-Feeding Opinion Questionnaire was developed and the four attitudinal areas of concern in the study comprised the subscales of this 30-item Likert-type instrument.

Questions to Be Answered

The questions concerning child-feeding attitudes and their relationships to obesity and to reactive eating were the following:

1. What are the relationships between mothers' attitudes and daughters' attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

2. What is the relationship between daughters' degrees of obesity or leanness and their own attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

3. What is the relationship between daughters' reactive eating scores and their own attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

4. What is the relationship between daughters' obesity or leanness and their mothers' attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

5. What is the relationship between daughters' reactive eating and their mothers' attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

6. What are the relationships among daughters' scores on the following Child-Feeding Opinion Questionnaire subscaled: (a) Reward, (b) Punishment, (c) Soothing, and (d) Affection?

7. What are the relationships among mothers' scores on the following Child-Feeding Opinion Questionnaire subscales: (a) Reward, (b) Punishment, (c) Soothing, and (d) Affection?

8. What is the relationship between daughters' reactive eating scores and their triceps skinfold thickness measurements?

9. What are the relationships between mothers' responses and daughters' responses to items on the Child-Feeding Opinion Questionnaire?

Implications of the Study

The topic of the present study has implications for parents, child development specialists, pediatricians, and nutritionists. Research in attitudes toward early feeding patterns and their relationships to the

attitudes and behaviors of offspring is important to those professionals who guide mothers in feeding their children. If a relationship exists between mothers' attitudes and the attitudes and reactive eating patterns or obesity among their children, the evidence may be used in preventing reactive eating. For example, if a mother generally regards food as a soothing agent in times of stress, this feeling may be reflected in the daughter's attitudes or in her tendency to eat when she is under stress. Since overeating as a response to anxiety may precipitate obesity, educational programs may be needed to change the early feeding patterns of parents in order to prevent reactive obesity in the offspring. Parent educators might encourage parents to consider alternative soothing techniques such as touching, holding, or verbally expressing empathy or acceptance of the child's anxiety.

Educators and psychologists who use food as a reinforcement in behavior modification programs may need to consider the learned association of food with success and comfort. Alternative reward systems such as social reinforcement may be preferable if food becomes a mechanism by which an anxious individual can provide himself with comfort when he becomes an adult and can control his food intake.

Limitations of the Study

This study was limited to college women (ages 18 to 24) and to their mothers. The students were all enrolled during the spring quarter, 1977, at Virginia Polytechnic Institute and State University, Blacksburg, Virginia, but came from various locations throughout the state and country. To the extent that most college students may be said to come

from middle-class homes, the subjects may be said to be comprised of a middle-class sample. The study was limited to women since estimates of the prevalence of obesity indicate a higher incidence among women than among men (U. S. Public Health Service, 1976); however, most published research studies on obesity were conducted with males as research subjects.

Assumptions

An assumption in the present study was that mothers' child-feeding attitudes assessed in 1977 were similar to those held when their daughters were young children. It was also assumed that the mothers' attitudes assessed by the scale used in this study were reflective of behaviors used when the daughters were younger. It was further assumed that subjects reliably self-reported their own eating behaviors when they were anxious. A final assumption was that the subjects who volunteered to participate in the study were representative of the general population of college women between the ages of 18 and 24.

Definition of Terms

The following definitions were established for this study:

Anxiety referred to a "special variety of fear experienced in response to an anticipated threat to self-esteem (Ausubel & Sullivan, 1970, p. 426)."

Attitude referred to the definition given by Shaw and Wright (1967) as follows:

> A relatively enduring system of evaluative, affective reactions based upon and reflecting the evaluative concepts of beliefs which have been learned about the characteristics of a social object or class of social objects. (p. 3)

Obesity referred to a body composition in which the triceps skinfold thickness was at or above the 85th percentile for age and sex.

Overeating referred to the process of consuming calories in excess of metabolic needs of one's body.

Overweight referred to a body weight above the 75th percentile for age and sex.

Reactive eating referred to overeating occurring as a response to anxiety. The term was used interchangeably with reactive overeating.

Subjects referred to the college women and their mothers who participated in the final study. College women were also referred to as daughters and as students.

CHAPTER II

REVIEW OF LITERATURE

The multifactorial nature of the problem of obesity is reflected in the diversity of clinical and empirical literature on the topic. Professionals in the fields of child development, psychology, biology, nutrition, and medicine have approached the problem from different perspectives. The areas of concern to professionals in these fields include the characteristics of obese individuals, the etiology of obesity, and treatment programs for the obese condition.

The review includes a statement of the prevalence of obesity, followed by reviews of studies on the characteristics of the obese and of the etiology of obesity. No attempt will be made to review the numerous treatment programs for this problem. Only literature which is relevant to the field of child development, and specifically, to the present study will be reviewed. No attempt will be made to report biological, medical, and nutritional research on this topic.

Prevalence

The actual incidence of obesity is probably unknown. Attempts to estimate its prevalence have varied widely and have been a function of the methods of defining and measuring obesity. Forbes (1975) maintained that the prevalence of obesity in any population group is a function of the stringency of the criteria used for its assessment. "Simply stated,

a cut-off at the 90th percentile dictates a prevalence figure of exactly 10 percent" (Forbes, 1975, p. 205). The wide variability in instruments and techniques used to measure individuals has contributed to the difficulty in using a single national criterion to estimate the incidence of obesity. This variability was of such concern to persons responsible for the nutrition surveillance program administered by the Center for Disease Control that a recent Nutrition Surveillance bulletin (U. S. Public Health Service, 1975) contained a special report on sources of error in weighing and measuring children.

In 1975, the Center for Disease Control reported the incidence of obesity among 18,655 children under 18 years of age who participated in a five-state nutrition surveillance program. In this report, obesity was defined as a weight-for-height ratio above the 95th percentile. The survey indicated that for the total group the incidence was 9.3%. When sexes and races were considered separately, the rates for males were (a) 9.7% for whites, (b) 8.2% for blacks, (c) 11.6% for Spanish Americans, and (d) 12.3% for American Indians. Oriental males had a lower rate of 4.9%. For females, the rates were (a) 8.8% for whites, (b) 9.6% for blacks, (c) 10.8% for Spanish Americans, and (d) 12.1% for American Indians. Again, Oriental females had a lower incidence rate of 5.6%.

The incidence of obesity among adults has been reported in a U. S. Public Health Service bulletin entitled Health: United States 1975 (1976). Estimates of the percent of obese adults ranged from 5.1% for black males (ages 45 to 74) below the poverty line to 35% for black females (ages 22 to 44) below the poverty line (Table 2).

Table 2

Percentage of Obese Adults Ages 20-44 Years and 45-74 Years, by Race, Sex, and Income: United States, 1971-72

(Hanes Preliminary)

Group	Age			
	22-44		45-74	
	Black	White	Black	White
Males				
Above poverty level	11.3	17.0	9.7	13.3
Below poverty level	10.9	9.3	5.1	15.4
Females				
Above poverty level	25.0	18.6	32.4	24.7
Below poverty level	35.0	25.1	32.7	27.6

Note. Adapted from National Center for Health Statistics: Preliminary Findings of the First Health and Nutrition Survey, United States, 1971-72: Anthropometric and Clinical Findings. (DHEW Publ. No. (HRA) 74.1229). Cited in U. S. Public Health Service, 1976, p. 449).

In general, the statistics reported by the Public Health Service indicated that obesity was more prevalent among women than among men, especially among persons whose income was below the poverty level. Although for women percentages were reported to be greater for blacks than for whites, the reverse was true for men.

Assessment of Obesity

Any assessment of obesity is an estimate of actual fat contained in body tissues. Since adipose tissue is spread throughout the human body, its direct assessment is not possible. Therefore, researchers must

still rely on indirect methods of estimating body fat. However, the methods currently available vary in their degree of directness or indirectness.

Perhaps the most widely used indirect estimate of obesity has been simple body weight. However, body weight may vary greatly depending on one's height or build. Thus, a person who is extremely tall may be high in weight even though he is far from obese. Therefore, a somewhat less indirect estimate of obesity involves the use of weight and height ratios.

Some common expressions of overweight and obesity in relation to weight status have been outlined by Christakis (1975) as follows:

> 1. Weight status in relation to average weight for a given height, age, sex, and "body frame," which has never been quantitatively assessed.
>
> 2. Ponderal index (Pi) defined as height divided by the cube root of weight.
>
> 3. Weight divided by height (W/H).
>
> 4. Weight divided by height squared (W/H^2). (p. 209)

According to Christakis (1975), the weight standards for given heights were derived from 1913 Life Insurance Actuarial Tables and from the 1959 Build and Blood Pressure Study.

A commonly-used set of tables for height-weight standards was published by the Metropolitan Life Insurance Company in 1959. These tables included "desirable" weights for men and women over 25 years of age, for small, medium, and large frames, and for various heights. Using the Metropolitan tables, various authors have used the criterion of 10, 15,

or 20% above the desirable weight as cut-off points for defining overweight or obesity.

Grande (1975) and Garn, Clark, and Guire (1975) discussed the limitations of using the traditional relative weight standards in determining obesity. Grande pointed out that relative body weight may be poorly related to actual fatness. For example, ". . . sedentary persons may be excessively fat and not overweight, whereas people doing heavy physical work and athletes are often overweight but not overfat" (p. 189). Thus, the traditional use of overweight standards may not be an accurate estimation of actual body fatness. Grande reviewed a number of studies in which researchers had compared a variety of direct measures of body fat in individuals to their relative body weights. Among the more direct measures of body fat are (a) measurement of skinfold thickness, (b) underwater weighing or gas displacement, (c) estimating the fat-free portion of the body from water content of the body, (d) determination of total body water and extracellular water, (e) estimating fat from body potassium, and (f) inert gas (nitrogen or cyclopropane) uptake. Grande discussed each method in terms of its theoretical limitations. A prime limitation discussed was that expensive equipment and highly trained personnel required for many of these measures made them impractical. One exception was the measure of skinfold thickness, a relatively simple procedure involving the use of calipers by a trained person to measure the skinfold thickness (in millimeters) at a site such as the triceps or scapular region. The practical advantages of the skinfold thickness appeared to make it a desirable measure of body fat.

Garn, Clark, and Guire (1975) compared relative body weight and triceps fat fold as estimates of obesity in various age groups. These authors used 20% overweight as the criterion for obesity measured by body weight. For the triceps skinfold, the cut-off point for obesity was at or above the 85th percentile. The comparison was made to see how the relative weight of obese children and adolescents matched the 20% overweight line. Results indicated that for adult women the 20% overweight line of the obese group reasonably approximated the 85th percentile for the triceps fat fold. For infants and young school-age children, however, the obese (via fat-fold) were well below the 20% overweight line. These comparisons indicated that although relative body weight was a poor indicator of body fat among adolescent females, it closely approximated a more direct measure of body fat among adult women.

Characteristics of the Obese

Descriptions of the characteristics of obese persons have focused not only on personality traits, self-concept, reactivity and sensitivity, but also on the tendency toward an external responsiveness to food-relevant cues.

Personality Traits

Psychological aspects of obesity were reviewed by Craddock (1973) and by Kiell (1973). Studies reported by Craddock indicated that a larger proportion of obese than nonobese patients had had an unhappy childhood or a nervous breakdown. Additionally, more obese than nonobese

adults reported having worries at the time of the study. In writing a general description of obese adult patients, Craddock stated:

> Many of them are people who eat under the minor stresses of everyday life instead of, or as well as smoking, drinking alcohol or tea or biting their nails. They are often hypersensitive individuals whose reactions to life is passive rather than active, and they have been conditioned to eating as a reward since early childhood. (p. 59)

Craddock further described studies which indicated that obese persons frequently lacked love from parents or other affectional sources. In such cases overeating was thought to have had a compensatory function. Reports by Craddock (1973) and Silverstone (1968, 1974) indicated less neuroticism, but more anxiety in obese than in nonobese patients.

An obese person may suffer adjustment problems of a psychosocial nature although may not be neurotic. The actual magnitude of this type of problem has been difficult to assess adequately since overeating may be serving a compensatory function for many individuals. Further, Russell (1966) pointed out that most studies of neuroticism in obese patients were done on highly selected, nonrepresentative groups. Stunkard (1966) also pointed out that care must be taken to determine whether any neuroticism or psychopathology present in obese patients is indeed relevant to their obesity.

Wunderlich (1974) used the California Psychological Inventory to compare personality characteristics of 10 male and 13 female super-obese young adults with the norms. Females scored higher than the norm did on dominance and psychological-mindedness but lower on responsibility, socialization, communality, and femininity. Males scored lower than the normative group did on capacity for status, sociability, social presence,

sense of well-being, socialization, communality, achievement via conformance, tolerance, and intellectual efficiency. Although subjects' mean scores were significantly different from the standardization group, they were within one standard deviation of the normative group on all scales except socialization for females and communality and intellectual efficiency for males. The author concluded that there was no common response-profile among super-obese persons.

Atkinson and Ringuette (1967) assessed 21 very obese adults by interviews and by the Minnesota Multiphasic Personality Inventory. Clinical psychologists judged the group to exhibit average physical activity, moderate anxiety, and mild to moderate depression. A tendency toward an above-average use of fantasy, overcontrol of emotions, and indirect expression of hostility was also reported. Rationalization was judged to be the most frequently used defense mechanism among these subjects.

Sallade (1973) found no significant differences between obese and nonobese children in terms of emotional adjustment measured by the California Test of Personality or in terms of social adjustment measured by the Ohio Social Acceptance Scale.

Bruch (1975) described excess weight as ". . . only the visible symptom of failures in many areas of functioning with serious deficits in initiative, autonomy, experience of control and self-regulation" (p. 111). "Fat as well as anorexic patients suffer from the misconception of being the misshapen product of somebody else's actions" (p. 112). She further described the obese individual as ". . . lacking the conviction of living his own life" (p. 113). A number of traits of

obese persons parallel traits of schizophrenics, according to Bruch. Like the schizophrenic, the obese person may have

> . . . low frustration tolerance and will react with sullen withdrawal and undermining hostility to unexpected demands, and, unable to derive satisfaction or enjoyment from available opportunities, he will react with excessive suffering in the face of difficulties and seek comfort in eating. (Bruch, 1975, p. 113)

Although a number of researchers have attempted to determine whether there exists a set of personality characteristics which may be said to describe the "obese character", such attempts have met with little success. This lack of success may be due to the fact that such studies have failed to delineate specific types of obesity, whether based on etiological factors or specific eating patterns. Bruch (1973) categorized obesity into "developmental" versus "reactive" obesity. Stunkard (1976) described the "binge eating" and "night eating" syndromes. To date, research aimed at documenting personality characteristics of obese individuals has not been conducted within the framework of specific types of obesity.

A major problem which placed limitations on the conclusions that could be drawn from research efforts to classify personality characteristics of the obese arose from a question about the direction of the cause-effect relationship. If a particular set of descriptive traits could have been derived, it still would not have been known whether the obesity caused one to have the traits or whether the particular traits were etiological factors in the onset or continuation of obesity.

Self-Concept

Nutritionists, psycho-therapists, and child development specialists have been concerned with the consequences of self-concept for one's psychological development. Self-concept is considered to be one of the most important correlates of healthy development (Ausubel & Sullivan, 1970). The body-image is one specific aspect of the general self-concept. Studies of body-image have included the impact of facial disfigurement, poor genital development, physical handicaps, or other body disfigurement upon emotional adjustment. Persons with nonvalued body-images are generally reported to have poor self-concepts. Obesity is a condition of body structure which is subject to social evaluation and thus may affect one's self-image. Societal attitudes that condemn obesity can be expected to contribute to negative self-evaluations among individuals who consider themselves to be obese.

A few studies have provided evidence for a relationship between obesity and psychosocial development. Results of a study by Richardson, Goodman, Hastorf, and Dornbusch (1961) indicated that children prefer drawings of other children in the following order: (a) a normal child, (b) a child with crutches, (c) a child in a wheelchair, (d) a child with the left hand missing, (e) a child with a facial disfigurement, and (f) an obese child. In a replication study, conducted by Wolfe (1973), it was found that among kindergarten children, the obese child was rejected significantly more often by girls, whereas the wheelchair child was rejected significantly more often by preschool boys. These findings indicated that peer rejection of obese children begins to occur in early years, perhaps because of adult modeling. Additionally, the findings

indicated possible sex differences in responses to obesity: i.e., that obesity is more salient for females. The psychological significance of such peer devaluation has been summarized by Ausubel and Sullivan (1970) as follows:

> The individual's ego response to his own physical disability is largely a reflection of the social reaction it elicits. If the latter is negative, therefore, he responds with feelings of self-depreciation, guilt, hypersensitivity, self-consciousness, and anxiety in facing new or competitive situations (Carter & Chess, 1951; Cruickshank, 1951; Mohr, 1948). Many children seek to compensate for their physical disadvantage with excessive activity and attention-getting behavior (Jones & Bayley, 1950); others become demanding and egocentric or exhibit regressive behavior. (p. 699)

A more direct assessment of the relationship between obesity and self-image was conducted by Stunkard and Mendelson (1967). One-hour interviews were conducted with 74 obese adults who were asked to describe how they viewed themselves in a mirror. Not all obese persons revealed disturbances in body-image, but the intensity of disturbances fluctuated greatly in short periods of time depending on mood or unpleasant emotional experiences. These authors concluded that body-image disturbances predisposed these subjects to esteem-lowering experiences and depressive moods which in turn reinforced the disturbed body-image. It was also concluded that, although there were variations because of depressive moods, those subjects who had body-image disturbances persisted in the disturbance over long periods of time. Weight reduction appeared to have little effect on body-image. It was further concluded that three factors predispose an obese person to a disturbed body-image: (a) age of onset of obesity, (b) presence of emotional disturbances, and (c) negative evaluation by others during

the formative years. . In interpreting this study, it must be understood that many of the conclusions drawn were the result of clinical judgment. Further studies with validated instruments are needed to make results generalizable.

Another study of the relationship between obesity and self-perception has been conducted by Glucksman and Hirsch (1969). In this study, three male and three female adults with an average weight of 334 pounds were tested on body size perception before and after weight loss. A control group of four nonobese patients was used. Perception of their own body size was measured by use of a slide projector device which distorted normal body size. Each subject was asked to adjust the slide so that it portrayed an accurate picture of his own body size. Results indicated that obese subjects overestimated their own body sizes during and following weight loss whereas nonobese subjects underestimated their body sizes. Results were interpreted as meaning that, although subjects' body sizes had changed, their body-images had remained stable. The generalizability of these findings is questionable because of the small sample size. Nevertheless, results of the study indicated that further research is needed to determine whether the resistance to change is also true in childhood. A lag in body-perception change following weight loss appeared to further complicate the problem of weight control in that the static poor self-concept may have remained a variable contributing to the anxiety and depression associated with obesity.

Sallade (1973) used "The Way I Feel About Myself Scale" for self-concept to compare obese and nonobese children in grades 3, 5, 8, and 11. As hypothesized, obese subjects scored significantly lower than the nonobese children did.

Reactivity and Sensitivity

Rodin, Elman, and Schachter (cited in Rodin, 1975) had subjects listen to either neutral or emotionally disturbing tapes. Obese subjects were reportedly more emotional than normals were when tapes were upsetting and less emotional when tapes were neutral. Another study by Rodin, Herman, and Schachter (cited in Rodin, 1975) supported the hypothesis that obese persons take in more cues and remember them better than do nonobese persons. This fact was demonstrated in the ability of obese subjects to remember more detail from slides or from experimental rooms and to recognize tachitoscopically presented words more quickly. Rodin (1975) reported additional experiments indicating that obese persons performing tasks involving concentration or reaction time responses were more susceptible to the distracting effects of irrelevant stimuli. Distraction was more pronounced when the irrelevant stimuli were emotionally compelling.

Externality

A prevalent hypothesis concerning nonnutritive overeating is that obese persons are under the control of external food-relevant cues and that they are relatively insensitive to the physiological hunger cues (Schachter, 1969, 1971). In their study Stunkard and Koch (1964), indicated that normal subjects reported feeling hungry when, indeed, they were having stomach contractions that were measured by a gastric

balloon which had been swallowed. For obese subjects, there was little correspondence between gastric motility and subjects' reports of hunger. Schachter, Goldman, and Gordon (1968) asked subjects to taste crackers after they had been fed either sandwiches or nothing. Results indicated that, although normal-weight subjects ate fewer crackers if they had been fed sandwiches, obese subjects did not alter their intake to adjust for having recently eaten. This study seemed to support an hypothesis that hunger in obese persons is not controlled by the state of the gastro-intestinal system.

The external cues which have been reported to influence overeating are sight (Nisbett, 1968; Ross, cited in Schachter, 1971) and taste (Decke, cited in Schachter, 1971). In general, the studies indicated that when food-relevant cues were present, the obese ate more than normals did. Yet, when such cues were absent, obese subjects had less difficulty than nonobese persons did in fasting (Goldman, Jaffa, & Schachter, 1968). The prominence of food cues has also been found to effect efforts of obese persons to obtain food. Johnson (cited in Schachter, 1971) observed subjects who saw either no food cues, one cue, or two cues. Obese subjects who were required to lift seven-pound weights with their index fingers in order to receive food, worked harder when two cues were present than when one cue or no cues were present. The fact that manipulation of cues had little effect on normal subjects indicated that external cues may have a more potent effect on obese than on nonobese individuals. Similarly, Schachter (1971) found that when they were presented with a choice of shelled versus unshelled nuts, more obese subjects ate shelled nuts, whereas equally as many normal

subjects chose unshelled nuts as shelled ones. The results were interpreted as supporting an hypothesis that obese persons were more affected by the prominence of food cues.

In a study of overweight persons who were successful or unsuccessful in maintaining weight loss, Leon and Chamberlain (1973) found that regainers exhibited an association between eating and a number of cues unrelated to mealtimes. Regainers also were likely to report feeling hungry after eating an adequate breakfast. The writers interpreted their findings as supporting the externality hypothesis.

An observational study by Hill and McCutcheon (1975) failed to support the externality hypothesis. Although obese subjects ate more high and less low-preference food than did the nonobese, there was no difference between the two groups in terms of their sensitivity to deprivation manipulation as measured by hunger reports and ingestion of liquid nutrient. Observational research by Warner and Balagura (1975) also failed to show differences in eating behaviors of obese and nonobese college students.

The externality hypothesis has been tested in a field setting by Nisbett and Kanouse (1969). They found that food-deprived normal-weight shoppers purchased more food but food-deprivation did not seem to affect food-buying behaviors of obese persons. These results were interpreted as supporting Schachter's hypothesis since the obese individuals were less influenced by their physiological state of hunger.

In spite of compelling research supporting Schachter's externality theory, Milich (1975) pointed out that methodological problems severely limit the generalizability of these results. The key problem was that

in most of the studies there was a lack of representativeness of subjects in terms of age, age at onset of obesity, and socioeconomic status. Most of the subjects in research on externality have been college students who may or may not have had juvenile-onset obesity, a factor which has been found to differentiate behaviors of obese subjects. Further, since most of the students participating in research were from middle- or upper-middle classes, results cannot be generalized to the lower class.

Etiology

The low success record of weight-loss programs (Stuart, 1975) points to the need for more efforts at preventing obesity. Before preventive programs can be launched, etiological factors must be more clearly understood. Etiological factors include both the biological and psychological nature of the problem.

Biological Factors

Biological factors in the etiology of obesity that have been discussed in the literature include the following: (a) genetics (Carrera, 1967; Lloyd, 1975; Shenker, Fisichelli, & Lang, 1974; Weil, 1975); (b) metabolic disorders (Bray, 1974; Craddock, 1973; Lloyd, 1975); (c) central nervous system damage (Bray, 1974; Weil, 1975); (d) birth weight (Fisch, Bilek, & Ulstrom, 1975; Huenemann, 1974); (e) early formation of excess adipose tissue (Brook, 1974; Bruch, 1974; Carrera, 1967; Eid, 1970; Heald, 1975; Hirsch, 1975; Huenemann, 1974; Knittle,

1975; Lloyd, 1975; Salans, 1974; Wolff & Lloyd, 1973) and (f) pregnancy weight gain (Fisch, Bilek, & Ulstrom, 1975; Weil, 1975). Other researchers have studied the positive energy balance resulting from excessive caloric intake or low activity levels (Bullen, Reed, & Mayer, 1964; Carrera, 1967; Mayer, 1975). Still other controversies have centered around the issue of early introduction of solid foods to the infant's diet (Lloyd, 1975; Shukla, Forsyth, Anderson, & Marwah, 1972; Weil, 1975) and the issue of breast versus bottle feeding (Huenemann, 1974; Weil, 1975).

To date, many of these studies have reported conflicting results. However, there does seem to be general agreement that the early formation of excessive adipose cells during childhood predisposes one to be obese as an adult.

Psychological Factors

A key psychological factor in the etiology of obesity discussed in the literature is overeating as a defensive reaction to brief or prolonged anxiety (Bruch, 1971, 1973, 1975; Stunkard, 1976) or as a response to traumatic events (Rotmann & Becker, 1970).

It has been generally accepted that many individuals respond to stress by overeating (Bruch, 1971, 1973, 1975; Gifft, Washbon & Harrison, 1972; McKenna, 1972; Rotmann & Becker, 1971; Silverstone, 1974; Stunkard, 1976). Bruch (1973) described some of the early reports of weight gain which followed some traumatic emotional experience and labeled this specific type of problem "reactive obesity" (see Chapter 1). According to Bruch, overeating and obesity may serve the function of warding off anxiety or depression.

In a book titled Nutrition, Behavior and Chance (Gifft, Washbon, & Harrison, 1972), the authors described the use of food as an emotional crutch:

> Adults, too, frequently use food as an emotional outlet--a crutch to help them handle and live with anxiety, tension, frustration, unhappiness, irritability, disappointment, loneliness, or boredom. No human can escape such emotions as these, and thus he must find ways to cope with them. (p. 38)

> Students invariably state that their eating patterns change during exam week. Usually, they eat more, particularly between meals, and often they eat items they consider too high in calories for them to include normally in their diets. This indulgence, they are aware, helps relieve the strain. . .Anxiety causes them to seek out or prepare a food, forgotten for a while but reminiscent of a time when life seemed more orderly or less stressful. Frustration is used as an excuse to permit oneself a favorite high-calorie dessert. (p. 39)

According to the psychosomatic view, overeating is considered to be a coping mechanism which is generally developed in childhood (Kaplan & Kaplan, 1957). According to this theory, when stress occurs in adulthood, the individual resorts to the use of this coping response which has been established earlier.

In a recent book titled The Pain of Obesity (Stunkard, 1976), anxiety-related overeating was described in two special groups, the "binge eaters" and the "night eaters." In both types, the patients were noted to eat hugh quantities of food as a response to stress, anger, or threatened depression.

Despite numerous clinical observations and widespread acceptance of the idea that overeating is frequently a behavioral response to anxiety, only a few empirical investigations of this phenomenon have been reported.

In a study by Rotmann and Becker (1970), 33 case histories (29 women, four men) of extremely obese patients at the University of Ulm were studied to determine whether certain biographical events were related to the onset of obesity. From psychoanalytically oriented interviews, it was determined that no single specific intrapsychic conflict was etiologically responsible for the onset of obesity. In about half of the cases obesity developed gradually or began after a significant event. In the other cases, weight gain occurred rapidly in several jumps. For some patients, more than one event was responsible for the onset of additional weight gains. The following triggering events were noted for the 33 patients: (a) pregnancy (11 times), (b) separation from important objects (20 times), (c) disease (6 times), (d) marriage (4 times), and (3) menarche (5 times). The authors concluded, "Overeating was used as a defense mechanism against the unconscious affects of helplessness and hopelessness arising mainly in situations of object loss" (Rotmann & Becker, 1970, p. 372).

Direct observations of the eating behaviors of obese and normal college men under high- or low-anxiety situations were reported by McKenna (1972). Under the guise of a food marketing study, the low-anxiety subjects were made to feel as comfortable and relaxed as possible. In the high-anxiety condition, the experimenter wore a white laboratory coat and wheeled in a cart of medical supplies, blood-stained cotton balls, and hypodermic needles. Subjects were told that because some physiological measures were needed they would need to supply a blood, urine, and rectal stool sample. They were then asked if they had any history of fainting, heart trouble, or convulsions. Subjects were

then observed as they tasted cookies. Results indicated that the obese ate considerably more under high-anxiety than under the low-anxiety setting, especially when the food was appealing. Normal-weight subjects ate less in the high-anxiety situation. A before-after checklist of anxiety indicated that anxiety reduction for the obese was in the predicted direction but was nonsignificant. Results were interpreted as supporting a psychosomatic view of the role of anxiety in the eating behavior of obese individuals.

Under the guise of making taste discriminations, Abramson and Wunderlich (1972), observed the number of crackers eaten by obese and normal male college students under conditions of fear or anxiety. Students in the interpersonal anxiety situation were given a sham personality test called the Interpersonal Stability Questionnaire, which was followed by a digit span test, and the Multiple Affect Adjective Checklist. They were then told that their stability was low and that they would likely have serious adjustment problems. This statement was followed by the taste test of crackers. Subjects in an objective fear situation were told that they would receive electric shock to determine its effects on taste discrimination and then electrodes were attached to the arm. A low intensity shock was then administered to "see if the machine was working." Subjects were then asked to make the taste test and were told they would make the ratings again after additional shocks. A control group received only the MAACL test and were asked to do the taste discrimination test. Results indicated that both the anxiety and fear manipulations increased the MAACL anxiety scores of obese students. Anxiety levels of normal subjects increased but they were not

significantly above the baseline. Since anxiety levels of normal students did not increase in the experiment, the effect of anxiety eating behavior could not be analyzed. For obese subjects, no significant differences were found between the number of crackers eaten in the control, anxiety, or fear situations. The authors concluded that, although their results clearly indicated that obese subjects were more responsive to induced anxiety, the hypothesis that eating represents a method of coping with anxiety could not be substantiated.

In a psychodynamically oriented study of oral drive cycles in obesity-bulimia patients, Friedman (1972) hypothesized that stressed subjects would have shorter orality cycles than would nonstressed subjects. Stressed subjects were selected on the basis of their obesity and previous psychiatric history. It was assumed that obesity-bulimia patients were stressed. Ten nonobese subjects served as controls. A scoring system for oral activity was devised to include smoking, drinking beverages, and eating. Oral activities were recorded for six-hour durations. Results indicated that the obese subjects had significantly shorter oral activity cycles than did those in the control group. Friedman reported that, although the oral activity of obese subjects was higher than that of normals, most of this activity was in noncaloric forms. A total caloric intake comparison for normals versus obese persons over the six-hour observation period was not reported. The results were described by the author as reflecting the presence of a variant form of instinctual regression. However, Keith and Vandenberg (1974) challenged the orality hypothesis when they found no significant differences between obese and normal subjects on six oral personality scales.

In London, Silverstone (1968) interviewed 20 male and 30 female obese patients and compared them with matched nonobese patients. Matching was based on sex, age, and social class. Each subject was asked whether he thought he overate, ate a normal amount of food, or underate. Five percent of the normal-weight (n = 20) men felt they overate as compared with 20% of the obese men (n = 20). None of the normal-weight women, but 13% of the obese women (n = 30) thought they overate. When males were asked if they ate more when they were anxious, there was no difference in the number of obese versus normal-weight males who reported such a tendency. Five percent in each weight group indicated that they did so. In contrast, 23.3% of the normal-weight and 56.6% of the obese females reported overeating when they were anxious. Silverstone reasoned that overeating as a response to anxiety may be more prevalent among women than among men because women tend to spend more of their time at home where there is likely to be a supply of readily-available food. Thus, in times of stress, females could more easily turn to this food for comfort.

Byrne, Golightly, and Capaldi (1963) surveyed 400 introductory psychology students on their past and present food attitudes and habits. They reported that individuals who were high in terms of liking foods indicated that during their childhood mealtime was a pleasant social experience. Other members of their families liked to eat and the mother was a good cook and enjoyed cooking. High food-likers had parents who prepared favorite foods when the child ". . .was sick or unhappy or on special occasions such as birthdays; going to a restaurant was a special treat" (p. 217). The authors reported that, at the time of the study,

these individuals still regarded mealtime as pleasant and that they used food as a self-administered reward against depression or for celebrating special events. Further, these same individuals reported that they tended to gain weight. The authors concluded that their attitudes toward food-oriented activities appeared to be related to a history of positive reinforcement associated with food. Byrne, Golightly, and Capaldi suggested that the strong positive food attitudes, combined with anxiety, might be a psychological factor in obesity.

Plutchik (1976) administered a questionnaire on eating habits and emotional attitude toward food to 60 adults who were attending weight control groups. The degree of overweight among subjects was significantly correlated with statements indicating the frequency of several self-reported behaviors. Among these behaviors were (a) overeating, (b) having trouble controlling amount of food intake, (c) eating more when depressed, (d) eating foods which were wrong for them, (e) eating rich foods, (f) eating more when nervous, and (g) nibbling all day.

Summary

A review of the literature pertaining to the prevalence of obesity, characteristics of the obese, and the etiology of obesity generated the following general conclusions:

1. Despite problems in measuring and defining obesity, it appears to be a problem in about 9% of children under 18 years of age.

2. The prevalence of obesity is greater among adults than among children.

3. Obesity is more prevalent among women than among men.

4. Obese persons tend to suffer from a variety of psychological problems and tend to overeat as a means of coping with stress.

5. No particular set of personality traits can be said to represent the "obese character."

6. Obese children and adults generally have poorer self-concepts and more distorted body-images than do their nonobese counterparts.

7. Obese individuals tend to be more highly reactive and sensitive to a variety of environmental stimuli.

8. External food-related cues appear to have more influence on the eating behaviors of obese individuals than do the internal physiological cues of hunger and satiety.

9. Little conclusive evidence is available as to the etiology of obesity with the exception that early onset of obesity predisposes children to adult obesity.

10. Obese persons tend to overeat when they are psychologically stressed.

11. No evidence exists as to the specific mechanisms through which obese persons develop the tendency to overeat as a means of coping with anxiety.

CHAPTER III

METHODOLOGY

The present study was designed to assess the relationships between certain child-feeding attitudes, obesity and reactive eating. Child-feeding attitudes of a group of college women and their mothers were assessed by using a Likert-type instrument which was constructed to assess attitudes as they pertained to the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection. Additional questions were devised to assess reactive eating and to assess daughters' birth sizes and early feeding experiences.

The mothers' and daughters' attitudes were studied to determine the relationships between (a) mothers' child-feeding attitudes and daughters' child-feeding attitudes, (b) daughters' child-feeding attitudes and their degrees of obesity or leanness, (c) mothers' child-feeding attitudes and their daughters' degrees of obesity or leanness, (d) daughters' child-feeding attitudes and their reactive eating, and (e) mothers' child-feeding attitudes and the tendency among their daughters toward reactive eating. Additional analysis was done to determine the relationship between daughters' reactive eating scores and their degrees of obesity and leanness.

Development of the Instrument

Since no previously designed instrument was available for the specific child-feeding attitudes being assessed in this study, a Likert-

type scale was developed. The four areas of child-feeding attitudes pertinent to the present study involved the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection. These four areas of interests constituted the four subscales of the Child-Feeding Opinion Questionnaire.

The development of the instrument consisted of five sequential steps: (a) evaluation of the initial draft by selected professionals, (b) evaluation of content validity by a panel of 22 professionals in nutrition and child development, (c) pilot testing for wording and clarity of directions, (d) pilot testing to select questions for the final instrument and to test the procedure for mailing questionnaires to the mothers, and (e) construction of the format for the final instrument.

Initial Questionnaire Draft

With consideration of the questions to be answered in the study, a pool of 47 statements was compiled by the writer. Each item was a statement to which respondents could indicate their opinions according to the following code: (a) Strongly Agree (SA), (b) Agree (A), (c) Tend to Agree (TA), (d) Tend to Disagree (TD), (e) Disagree (D), and (e) Strongly Disagree (SD). Each item was evaluated by selected professionals for meaning, clarity, and relevance to the subscale in which it had been placed. The professionals were invited to suggest additional items for each subscale. This process resulted in several editorial changes and in the addition of 13 new items. Items were revised and reworded so that half of the items in each subscale were stated in the positive direction and half were in a negative direction. The purpose of having the direction of the statements balanced was to prevent respondents from

tending to agree to tending to disagree with all items. A copy of the revised pool of statements is included in Appendix A.

Content Validity

To determine content validity, the revised pool of items for each subscale of the initial draft of the Child-Feeding Opinion Questionnaire was given to a panel of judges. Twenty-two judges, 11 nutritionists and 11 child development specialists were included on this panel. All judges were faculty members in the College of Home Economics at Virginia Polytechnic Institute and State University, Blacksburg, Virginia, or at Radford College, Radford, Virginia. Judges received a copy of the items and a letter (Appendix B) asking them to judge each item by circling code letters to indicate the closeness of the item to the subscale in which it had been placed. The items were rated according to the following code: (a) Very Close (VC), (b) Close (C), (c) Somewhat Close (SC), and (d) Not Close (NC). A mean score was calculated for each item based on the following rating scale: (a) Very Close = four points, (b) Close = three points, (c) Somewhat Close = two points, and (d) Not Close = one point (see Appendix B for summary of ratings for each item). Prior to testing, it was decided that only items which received a mean score of three would be retained for further analysis. Any item that received a rating of Not Close by two or more judges was also to be deleted. These criteria resulted in four items being eliminated because they received a rating of Not Close by two or more judges. No items received a mean score of less than three, and thus no items were deleted because of this criterion. Several suggestions for rewording were made by judges and were reflected in the Pilot Study II version of the instrument.

Pilot Study I

The initial draft of attitude statements was pilot tested for wording, clarity of directions, and smoothness of administration. Students similar to those who were to constitute the final sample participated in this pilot study. These students were enrolled in a home economics course entitled Human Development III: The Individual and Marriage which was taught at Virginia Polytechnic Institute and State University. Approximately 40 students were enrolled in the class. These students were requested to complete the questionnaire (Appendix A) and to comment on any statements or directions which were confusing. Any items that were judged to be confusing or ambigious were rephrased. One item was deleted because of its apparent lack of clarity to these students. Only a few other minor changes in wording resulted from this pilot study.

On the Pilot Study I form of the child-feeding questionnaire (Appendix A), students were asked to respond to certain personal information questions in addition to the attitude statements. The personal information questions related to age, curriculum and birth order. Six other questions asked students to report how frequently and how much they ate when they experienced three types of personal stress: (a) studying for tests or exams, (b) preparing a term paper or major course project, and (c) having a personal conflict with someone important to them. Daughters were asked to indicate the frequency of eating more by rating themselves on this scale: (1) never, (2) almost never, (3) sometimes, (4) often, (5) very often, and (6) almost always. They were asked to indicate the amount of food eaten during the three stress situations by rating themselves according to the following scale:

(1) nothing at all, (2) almost nothing, (3) small, but sufficient amounts, (4) average amounts, (5) much, (6) very much, and (7) enormous amounts.

Pilot Study II

When all attitude statements had been judged to be readable and comprehendable, the complete questionnaire, including attitude statements and personal and background information questions (Appendix C), was administered to a group of students and their mothers for the purpose of analyzing the items in the instrument. Attitude statements were numbered and then randomly ordered by using the first two digits in the first three columns of the table of random numbers found in Statistics for the Behavioral Sciences (Hardyck & Petrinovich, 1969). Forty students enrolled in a course entitled Principles of Working with Young Children, taught by the writer, were asked to complete the questionnaire and to have a similar questionnaire mailed to their mothers.

The mothers' form of the Pilot Study II questionnaire (Appendix C) contained not only the same attitude statements as the daughters' form did, but also a few questions pertaining to background information on the daughters' birth sizes and early feeding experiences. The daughters' form contained the personal information items described for Pilot Study I.

The mothers' form and the daughters' form of Pilot Study II questionnaires also differed in that the mothers' form was printed on goldenrod paper whereas the daughters' form was on blue. Further, daughters were asked to mark their responses on the questionnaire form and then to transfer their answers to corresponding spaces on an IBM

data coding sheet. Mothers were simply asked to mark their responses on the questionnaire form.

After each daughter participating in Pilot Study II had completed her form, she was asked to address an envelope to her mother. The writer then mailed each mother a questionnaire (Appendix C) along with a cover letter and a stamped self-addressed envelope. Of the 40 students who participated in this pilot study, two were eliminated because the mothers were not living. Thirty-three mothers returned questionnaires. The data from mothers' questionnaires were coded by research assistants on IBM data coding sheets. Using IBM forms completed by daughters and those completed for each mother, IBM computer cards were punched directly from the coding forms by means of a special service available through the Test Scoring Center at VPI & SU.

Separate analyses were executed for the mothers' and for the daughters' responses to the Pilot Study II Child-Feeding Opinion Questionnaire. Each item on the questionnaire was examined in terms of the proportion of mothers and daughters responding in any way to that item (see Appendix C for a summary of responses). Any item for which the mean response for either mothers or daughters was as high as five (Strongly Disagree or Strongly Agree, depending on the direction of the statement) was deleted since total agreement among all respondents would yield no group differences in the final study. Twelve items were deleted through the use of this criterion. The remaining items were examined to determine whether most respondents tended to answer the question in the same way. Such grouped responses would have yielded little variance for an item. Remaining items were evaluated subjectively on the basis of

their pertinence to the subscale in which they belonged. An attempt was made to retain a balanced number of positive and negative statements in each subscale. An attempt was also made to have an approximately equal number of items in each subscale.

Through the collaboration of the writer and a statistician who was a member of the faculty of the Department of Statistics at VPI & SU, the final instrument was reduced to 30 items with seven items in three subscales and nine items in one subscale. Sixteen items in the final questionnaire were positively stated; 14 were negatively stated. Items selected for the final instrument are listed in Appendix D.

Format of the Final Instrument

The attitude items selected for the final subscales of the Child-Feeding Opinion Questionnaire were reassigned the original numbers which indicated their order on the initial draft of the questionnaire. A table of random numbers found in Appendix D of Foundations of Behavioral Research (Kerlinger, 1973) was consulted. By reading the two digits of each column of numbers and by using only numbers which appeared in the initial draft, the writer randomly ordered items in the sequence in which their numbers appeared in the table (see Appendix D for a listing of random numbers assigned to items).

In addition to child-feeding attitude statements, the daughters' form (Appendix D) of the final CFOQ contained six questions to assess each daughter's reactive eating and one question each to determine each student's age, curriculum, and birth order.

In addition to the Likert-type scale, the mothers' form of the final CFOQ (Appendix D) contained questions about the daughters' early feeding experiences. These questions requested such information as the age at which the daughters' were first given a bottle, the age at which solid food was first introduced, the type of solid food which was first introduced, and the nature of any feeding problems encountered by the daughter during infancy. Two questions were asked in order to obtain the daughters' birth weights and lengths. The background information was not analyzed as part of this study but will be used in conjunction with the results of the study to generate hypotheses for future research. However, the responses to these questions were tabulated and reported in Appendix D.

The randomly ordered attitude items selected for inclusion in the final form of the CFOQ, along with personal and background questions, were typed on sheets of 11-inch by 14-inch paper. Separate directions and background information questions were typed for the mothers' and daughters' forms. The two forms were then reduced 25% in size so that the completed and folded questionnaires appeared on a single sheet of paper which measured 8.5 inches by 11 inches. The purpose of reducing the size of the questionnaire to a minimum readable image was to maximize the return rate for the mailed questionnaires. The mothers' form of the final CFOQ was printed on canary yellow paper whereas the daughters' form was printed on medium green. The forms were reproduced at the VPI & SU Copy Center II. Copies of the final forms of the CFOQ are included in Appendix D.

Data Collection

After the items for the final Child-Feeding Opinion Questionnaire were selected and forms had been printed, students who agreed to participate in the study were contacted for an appointment. Each student was asked to come to Wallace Hall on the VPI & SU campus to complete the CFOQ, address an envelope to her mother, and have anthropometric measurements taken.

Subjects for the Final Study

College women between the ages of 18 and 24 were recruited through the College of Home Economics at Virginia Polytechnic Institute and State University, Blacksburg, Virginia. Approximately 1000 students were enrolled in the home economics curriculum at this land grant university which had a total student body of approximately 19,600. A number of nonmajors were enrolled in home economics classes. Students at this school represented a variety of localities throughout the state and country. The largest portion of the students at this university were from the suburbs of Washington, D. C., and from the Richmond and Norfolk areas of Virginia.

To recruit subjects, a letter from the dean of the College of Home Economics was taken to various home economics classes during the second half of April, 1977 (Appendix E). The letter indicated that a study of various opinions on child-feeding was to be conducted soon and requested the students' participation in the study. The letter also indicated any student could qualify as a participant if she (a) were female, (b) had had her 18th birthday, but had not had her 24th birthday, (c) had been

reared by her own biological mother, and (d) if her mother was living at that time. Students were asked to indicate their willingness to participate by completing an agreement card (Appendix F). On the card, each student was asked to indicate the address and telephone number where she could be reached for an appointment.

In order to ensure the participation of an adequate number of obese subjects in the study, faculty members in the College of Home Economics and students in classes taught by the researcher were asked to submit names of individuals whom they believed to be overweight or obese. These individuals were contacted by telephone to determine whether they met the criteria for participation and if so, to request their participation.

The recruitment process yielded 227 volunteer participants. Two subjects were eliminated because of incomplete anthropometric data and four were eliminated because their mothers failed to return their questionnaires. Therefore, the final sample consisted of 221 daughters and 221 mothers. A description of daughters by age, curriculum, and birth order is shown in Table 3.

Child-Feeding Opinion Questionnaire

Students were asked to complete the Child-Feeding Opinion Questionnaire, including the personal information questions described previously. They were asked to circle their answers on the questionnaire and to transfer their answers to an IBM coding sheet by using a number two pencil to mark corresponding spaces on the IBM sheet. Since such forms had been used in most classes at VPI & SU, the students were accustomed to using them and there was little error in the marking procedures. The

Table 3

Description of Daughters by Curriculum, Age, and Birth Order

Descriptor	%
Age	
18	16.7
19	32.1
20	26.2
21	15.8
22	8.1
23	0.9
Curriculum	
Clothing, Textiles and Related Art	18.6
Human Nutrition and Foods	9.0
Management, Housing and Family Development	20.8
General Home Economics	0.9
Education	28.1
Psychology	1.8
Sociology	2.7
Other	18.1
Birth Order	
Only	2.7
First	33.2
Second	29.1
Third	24.1
Fourth	8.6
Fifth	1.8
Later than fifth	0.5

Note.-- N = 221

use of such forms significantly reduced the time required for coding and analyzing data since the IBM sheets were used in a computer program for punching data cards.

The mothers were asked to answer the Child-Feeding Opinion Questionnaire, including seven background questions about the daughters' birth sizes and early feeding experiences. They were asked to circle answers only on the questionnaire form. It was thought that, since the mothers were likely to have had little experience with IBM scoring forms, a large number of marking errors could have been expected. Such errors would have offset any advantage to be gained by the time saved with computer-punched cards. However, IBM coding sheets were used by the researcher for purposes of coding the mothers' responses after they had been returned by mail. All IBM sheets were checked by the researcher and staff assistants by calling the numbers aloud and checking to see whether the blackened spaces corresponded to the answers circled by the mothers. Student coding sheets were also checked in the same manner.

Anthropometric Measurements

Four anthropometric measurements were taken for each daughter participating in the final study. These measurements were made after each student had completed the Child-Feeding Opinion Questionnaire. The measurements included height, weight, triceps skinfold thickness, and arm circumference. A summary of the daughters' anthropometric measurements is reported by percentile in Table 4. The mean and variance for each measurement is reported in Table 5.

Table 4

Summary of Daughters'[a] Anthropometric Measurements by Percentile

Percentile	Range	%
	Height (centimeters)[b]	
5th or below	0.0 - 152.908[c]	0.5
5th › 10th	152.908 - 155.448	2.3
10th to 25th	155.448 - 159.004	10.4
25th to 50th	159.004 - 163.322	23.1
50th to 75th	163.322 - 167.132	29.0
75th to 90th	167.132 - 171.196	23.5
90th to 95th	171.196 - 173.736	6.3
95th or above	173.736 - highest	5.0
	Weight (kilograms)[b]	
5th or below	0.0 - 45.0[c]	1.4
5th to 10th	45.0 - 47.7	3.2
10th to 25th	47.7 - 51.3	11.3
25th to 50th	51.3 - 57.6	22.2
50th to 75th	57.6 - 63.9	22.6
75th to 90th	63.9 - 73.35	24.0
90th to 95th	73.35 - 81.45	7.2
95th or above	81.45 - highest	8.1
	Triceps Skinfold Thickness (millimeters)[d]	
5th or below	0.0 - 9.0	0.0
5th to 10th	9.0 - 11.0	2.3
10th to 20th	11.0 - 13.0	2.7
20th to 50th	13.0 - 17.0	15.8
50th to 70th	17.0 - 21.0	17.2
70th to 90th	21.0 - 28.0	48.9
90th to 95th	28.0 - 32.0	10.4
95th or above	32.0 or above	2.7
	Arm Circumference (centimeters)[d]	
5th or below	0.0 - 21.833[c]	0.5
5th to 10th	21.844 - 26.606	5.0
10th to 20th	26.606 - 23.368	2.7
20th to 50th	23.368 - 25.654	25.3
50th to 70th	25.654 - 27.178	19.0
70th to 90th	27.178 - 30.226	29.4
90th to 95th	30.226 - 32.512	8.6
95th or above	32.512 or above	9.5

[a] n=221

[b] Height and weight percentile reported by the National Center for Health Statistics (1976) were used as the basis for categories. NCHS figures were converted to metric units.

[c] Category endpoints overlap due to SPSS (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975) program requirements. The SPSS recode program automatically rounds at the midpoint between categories.

[d] Skinfold thickness and arm circumference percentiles reported by the National Center for Health Statistics (1973) were used as the basis for categorization.

Table 5

Mean, Standard Deviation, and Range of Daughters' Anthropometric Measurements

Measurement	$\bar{X}$	SD	Range
Height (centimeters)	165.21	5.19	152.7-181.5
Weight (kilograms)[a]	63.04	12.50	43.1-120.9
Triceps Skinfold Thickness (millimeters)	22.1	5.31	9.3- 39.3
Arm Circumference (centimeters)	27.6	3.61	21.4- 40.6

[a]Weight was measured in pounds and converted to kilograms.

Height. Procedures recommended by the Center for Disease Control (Committee on Nutrition Advisory to CDC Food and Nutrition Board, 1974) were used for obtaining accurate height measurements. A meter stick was mounted on a true vertical wall. Each subject was asked to stand barefoot on a horizontal floor with buttocks and shoulders against the wall. She was instructed to look straight ahead. A horizontal Frankfort plane consisting of a block squared at right angles against the wall was lowered until it rested firmly on the crown of the subject's head. The subject was then asked to step from under the Frankfort plane which was held firmly in place by the measurer. A reading was made to the nearest one-tenth of a centimeter. The measurer read the height aloud and it was recorded by an assistant on a form designed for recording the anthropometric data (Appendix G). This procedure was repeated for each subject so that there were two independent estimates of height for each college student who participated in the study. The two measurements of height had a Pearson correlation coefficient of .9991 ($p. < .001$). The mean of the two measurements was taken as the height estimate to be used in data analyses.

Weight. Health-O-Meter physicians scales, manufactured by Continental, were used to assess weight. These scales had a maximum capacity of 350 pounds. The scales were checked for accuracy by a representative of the Weights and Measures Section of the Division of Product and Industry Regulation in the Virginia Department of Agriculture and Commerce. Scales were balanced before and after each student had been weighed.

Each student was weighed in light-weight clothing and without shoes. All daughters were weighed in the evening hours in order to avoid variance which would have been introduced by weighing at different times of the day. Each student was asked to step on the scales. At that time the measurer asked the subject to estimate her weight. The guessed weight was recorded and used as a basis for beginning to balance the scales. Each daughter was asked to stand still with her hands down to her side and to look straight ahead. The scale weights were then moved until a perfect balance had been achieved. The measurer called the number aloud to the nearest one-thousandth of one pound. This number was recorded by an assistant on the anthropometric form (Appendix G). The student then stepped off the scales. The scales were rebalanced at zero and a second independent measurement of weight was made and recorded in the same manner. The two weight measurements had a Pearson correlation coefficient of .9997 ($p. < .001$). The mean of the two weights was taken as the best estimate of each daughter's weight.

Skinfold thickness. Lange spring-type skinfold calipers were used to measure skinfold thickness of the triceps area. Procedures described by the National Center for Health Statistics (1973) were used. Each student was asked to relax her arm as much as possible and to let it hang loosely at her side. The measurer grasped a skinfold parallel to the long axis of the arm over the triceps area on the back of the arm and one centimeter above the midpoint mark. Two independent measurements of the triceps skinfold thickness were made to the nearest one-tenth of one millimeter and this measurement was called aloud to an assistant who recorded the measurement on the anthropometric data form

(Appendix G). The two skinfold measurements had a Pearson correlation coefficient of .9962 ($p. < .001$). The mean of the two measurements was taken as the best estimate of each daughter's triceps skinfold thickness. All skinfold measurements were made by a nutritionist skilled in skinfold measurement.

Arm circumference. Measuring techniques used in the National Health Survey and published in a bulletin of the National Center for Health Statistics (1973) were used for measuring the arm circumference. As described in the bulletin, the measurement was taken with each subject standing and holding her forearm at a right angle to the upper arm. The arm was marked with a steel tape on the lateral aspect (outer side, not back) of the arm. The distance was measured from the acromion (at the shoulder) to the olecranon process (at the elbow). The zero mark of the tape was placed at the acromion and allowed to hang free. The midpoint of the distance from the shoulder to the elbow was marked with a pencil. The arm circumference was then measured horizontally at this level with the arm hanging loose. The steel tape was also used for this measurement. The measurement was called aloud to the nearest one-tenth of one centimeter. An assistant recorded the numbers on the anthropometric data form (Appendix G). The process was repeated and the results were again recorded. The two arm circumference measurements had a Pearson correlation coefficient of .9933 ($p. < .001$). The mean of the two measurements was taken as the best estimate of each daughter's arm circumference.

Treatment of the Data

Data to be analyzed in this study included mothers' and daughters' responses to the Child-Feeding Opinion Questionnaire statements, the daughters' reactive eating scores, and the daughters' triceps skinfold thickness measurements. Test-retest correlation coefficients were computed for daughters' responses to each item on the attitude scale and for the daughters' reactive eating responses.

Attitude Scale

A score for each mother and daughter participating in the study was obtained by the summative method for each subscale of the final Child-Feeding Opinion Questionnaire. The range of possible scores on each item was from one for Strongly Agree to six for Strongly Disagree. For purposes of computing subscale scores, positively-stated items were reversed so that the highest score (six) was assigned to Strongly Agree and the lowest score (one) was assigned to Strongly Disagree. Subscales one (Reward), two (Punishment), and four (Affection) each contained seven items. Thus, on these subscales, a subject's score could have ranged from a low of seven to a high of 42. Subscale three (Soothing) contained nine items and, therefore, could have yielded a low score of nine and a high score of 54. For the total instrument, consisting of 30 questions, any subject's score could have ranged from a low of 30 to a high of 180.

Reactive Eating Scale

A reactive eating score for each daughter was obtained from responses to six questions found on the personal information section of the daughter's final CFOQ form (Appendix D). Three types of situations

which are generally conceded to be stressful to college students were presented: (a) studying for tests or exams, (b) preparing a term paper or major course project, and (c) having a personal conflict with someone important to oneself. For each of the three situations, one question was asked regarding the frequency of eating more when one experienced a stressful situation. One additional question for each stressful situation dealt with the amount of food eaten while one experienced the particular stressful situation in question. For each question regarding the frequency of eating more, student responses were coded in the following manner: (a) never = 1, (b) almost never = 2, (c) sometimes = 3, (d) often = 4, (e) very often = 5, (f) almost always = 6, and (g) always = 7.

Daughters' responses to questions regarding the amount of food eaten during the three stressful situations were coded in the following manner: (a) nothing at all = 1, (b) almost nothing = 2, (c) small, but sufficient amounts = 3, (d) average amounts = 4, (e) much = 5, (f) very much = 6, and (g) enormous amounts = 7.

Each daughter's reactive eating score was obtained for each situation by multiplying the score for the amount eaten by the frequency of eating more. Thus, for each situation, any individual's score could have ranged from a low of one, indicating very little reactive eating, to a score of 49, indicating a high level of reactive eating. The total reactive eating score was obtained for each student by summing the scores across all three reactive eating situations. The total reactive eating score was the score used in data analyses for this study.

Test-Retest Reliabilities

A random sample of 30 daughters who had participated in the final study was selected. These students were contacted and asked to complete the daughters' form of the Child-Feeding Opinion Questionnaire on the seventh day after they had originally completed it. Twenty-nine of those selected returned their questionnaires. Pearson correlations between the first and second administrations of the instrument were computed for each item on the CFOQ. The correlations are shown in Table 6.

Table 6

Pearson Correlations for Test-Retest Responses to Child-Feeding Opinion Questionnaire Items

Item	r	p
Subscale 1: Use of food as a reward		
1. A good way to get a child to finish a chore is to promise a snack when he's finished.	.609	.001
2. Children should have dessert only after everything on the plate has been eaten.	.753	.001
3. An excellent way to recognize a child's special accomplishment is to take him out to eat.	.698	.001
4. It is a bad practice to honor school children's grades by making their favorite foods.	.563	.001
5. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	.260	.086
6. Mothers should not use dessert as a bribe to get children to eat.	.547	.001
7. Promising a snack to children to get them to play quietly is an unacceptable practice.	.285	.067
Subscale 2: Use of food as a punishment		
1. A mother should withhold a child's favorite food if he has been bad.	.417	.012
2. Infrequently, it is acceptable for a child who misbehaves to be made to go to bed without dinner.	.688	.001
3. It is all right to tell a child he can't have dessert because he misbehaved.	.435	.001

Table 6 (Continued)

Pearson Correlations for Test-Retest Responses to

Child-Feeding Opinion Questionnaire Items

Item	r	p
4. It is not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	.083	.334
5. Dessert is considered to be part of the total meal.	.898	.001
6. Dessert should not be withheld, even if vegetables aren't eaten.	.756	.001
7. Withholding dessert because a child did something the mother disapproves of serves no purpose.	.409	.014
Subscale 3: Use of food as a soothing agent		
1. It is only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	.705	.001
2. When children feel sad and "blue," a favorite food will make them feel better.	.739	.001
3. An excellent means for consoling a disappointed teenager is to make a favorite dish.	.738	.001
4. When school children are studying for tests, they should be allowed to snack more than usual.	.769	.001
5. A snack is a good thing to give a child who takes a hard fall so that he'll feel better.	.693	.001
6. A mother should not give a child a cookie to stop him from crying.	.667	.001
7. Right from the first, children should learn they can't be fed each time they cry.	.730	.001

Table 6 (Continued)

Pearson Correlations for Test-Retest Responses to

Child-Feeding Opinion Questionnaire Items

Item	r	p
8. Just because a school child is under pressure, it is no excuse for eating extra sweets.	.668	.001
9. Giving a disappointed child a cookie or cracker serves no purpose.	.459	.006
Subscale 4: Use of food to express affection		
1. A woman who loves her family spends a lot of time cooking dishes her family likes.	.471	.005
2. It is better to make a favorite dish to show someone you care than to just tell them so.	.570	.001
3. A good way for a mother to show she loves her child is to make his favorite dish.	.554	.001
4. A mother who loves her children never keeps food from them.	.621	.001
5. Food has little to do with good mother-child relationships.	.741	.001
6. It is silly to say that "the way to a person's heart is through the stomach."	.859	.001
Reactive Eating:		
1. How often do you tend to eat more when studying for tests or exams?	.937	.001
2. When studying for exams or tests, how much do you eat?	.918	.001
3. How often do you tend to eat more when preparing a term paper or major course project?	.843	.001

Table 6 (Continued)

Pearson Correlations for Test-Retest Responses to

Child-Feeding Opinion Questionnaire Items

Item	r	p
4. When preparing a term paper or major course project, how much do you eat?	.688	.001
5. How often do you tend to eat more if you've had a personal conflict with someone important to you?	.943	.001
6. How much do you eat if you've had a personal conflict with someone important to you?	.948	.001

Note.-- Test-retest correlations were computed on a sample of 29 daughters who were randomly selected from the final sample.

CHAPTER IV

RESULTS

The present study was designed to determine the relationships among certain child-feeding attitudes of mothers and the child-feeding attitudes, obesity, and reactive eating of their college-age daughters. Two forms of the Child-Feeding Opinion Questionnaire were developed -- one for the mothers and one for the daughters (Appendix D). Both forms contained 30 Likert-type items to assess attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection. The daughters' form of the CFOQ also contained six questions to assess reactive eating and the mothers' form contained questions regarding their daughters' birth size and early feeding experiences. A nonprobability sample of college women (n=221) and their mothers (n=221) completed the CFOQ. Anthropometric measurements of the college women were taken and used to determine their degree of obesity or leanness.

Mothers' and daughters' responses to each item on the Child-Feeding Opinion Questionnaire were tabulated and the means and standard deviations were computed by scoring from one for Strongly Agree to six for Strongly Disagree. A summary of mothers' and daughters' responses to the attitude statements is shown in Table 7. Chi-square comparisons between mothers' and daughters' responses were also reported in Table 7. These comparisons will be discussed later in the chapter. Daughters' reactive eating scores were tabulated (Table 8) and a total reactive

Table 7

Summary of Analysis of Responses to Child-Feeding Opinion Questionnaire Items

Item	Direction	Mothers							Daughters							X^{2a}	P
		SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$		
Subscale 1: Use of Food as a Reward																	
1. A good way to get a child to finish a chore is to promise a snack when he's finished.	+	3.2	15.0	15.5	15.9	39.1	11.4	4.07	.5	10.4	26.2	27.1	24.0	11.8	3.99	.44	.5080
2. Children should have dessert only after everything on the plate has been eaten.	+	7.2	21.3	20.4	19.0	26.7	5.4	3.53	9.5	25.3	19.0	26.7	18.1	1.4	3.23	.91	.3413
3. An excellent way to recognize a child's special accomplishment is to take him out to eat.	+	5.0	34.4	24.0	12.7	19.0	5.0	3.21	2.7	24.0	32.1	22.2	14.9	4.1	3.35	.77	.3799
4. It is a bad practice to honor school children's grades by making their favorite foods.	-	5.0	19.4	8.6	17.7	40.5	8.6	3.95	1.8	7.2	7.7	30.3	40.7	12.2	4.38	15.05	.0001
5. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	-	6.8	22.4	13.2	22.8	30.6	4.1	3.60	4.1	16.3	19.0	28.5	24.4	7.7	3.76	.32	.5727
6. Mothers should not use dessert as a bribe to get children to eat.	-	21.7	48.4	14.5	9.0	5.4	.9	2.31	29.0	33.0	19.0	15.8	3.2	0.0	2.31	.78	.3776

Table 7 (Continued)

Summary of Analysis of Responses to Child-Feeding Opinion Questionnaire Items

Item	Direction	Mothers							Daughters							X^{2a}	P
		SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$		
7. Promising a snack to children to get them to play quietly is an unacceptable practice.	-	10.5	40.5	17.7	16.8	11.4	3.2	2.88	15.4	34.4	21.7	21.7	5.9	.9	2.71	.30	.5816
Subscale 2: Use of Food as a Punishment																	
1. A mother should withhold a child's favorite food if he has been bad.	+	.9	2.3	4.5	11.8	45.0	35.5	5.04	0.0	5.4	19.0	19.5	38.0	18.1	4.44	21.56	.0000
2. Infrequently, it is acceptable for a child who misbehaves to be made to go to bed without dinner.	+	.5	6.4	4.6	7.3	32.9	48.4	5.11	2.7	10.0	8.6	14.9	30.8	33.0	4.60	7.10	.0077
3. It is all right to tell a child he can't have dessert because he misbehaved.	+	1.4	17.6	15.4	17.2	33.9	14.5	4.08	2.7	31.7	24.4	22.6	13.1	5.4	3.28	25.54	.0000
4. It is not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	+	1.8	2.7	4.5	13.6	49.1	28.2	4.90	1.4	5.0	7.2	17.2	43.0	26.2	4.74	1.7	.1820
5. Dessert is considered to be part of the total meal.	-	9.5	51.6	14.5	5.9	13.6	5.0	2.77	5.9	28.5	19.9	18.6	20.4	6.8	3.39	21.02	.0000
6. Dessert should not be withheld, even if vegetables aren't always eaten.	-	4.1	28.1	19.5	24.4	18.6	5.4	3.42	0.0	12.7	26.7	29.0	24.9	6.8	3.86	6.17	.0130

Table 7 (Continued)

Summary of Analysis of Responses to Child-Feeding Opinion Questionnaire Items

Item	Direction	Mothers SA	A	TA	TD	D	SD	$\bar{X}$	Daughters SA	A	TA	TD	D	SD	$\bar{X}$	X^{2a}	P
7. Withholding dessert because a child did something the mother disapproves of serves no purpose.	-	12.2	45.7	18.1	13.6	10.0	.5	2.65	7.2	17.6	27.1	35.7	10.9	1.4	3.29	26.56	.0000
Subscale 3: Use of Food as a Soothing Agent																	
1. It is only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	+	3.2	26.9	30.1	16.4	17.4	5.9	3.36	1.8	20.4	28.1	25.8	19.2	6.8	3.57	4.09	.0430
2. When children feel sad and "blue," a favorite food will make them feel better.	+	2.3	23.5	34.4	14.0	23.1	2.7	3.40	3.6	23.1	40.3	15.8	13.6	3.6	3.24	1.91	.1664
3. An excellent means for consoling a disappointed teenager is to make a favorite dish.	+	1.8	17.6	24.4	16.7	30.3	9.0	3.83	2.3	11.3	31.7	24.4	22.2	8.1	3.77	.04	.8482
4. When school children are studying for tests, they should be allowed to snack more than usual.	+	2.3	19.1	26.8	21.4	24.5	5.9	3.65	.9	8.6	17.2	27.1	37.1	9.0	4.18	20.83	.0000
5. A snack is a good thing to give a child who takes a hard fall, so he'll feel better.	+	.5	5.9	14.5	19.0	42.5	17.6	4.50	.5	6.3	28.5	30.3	27.6	6.8	3.99	10.77	.0010
6. A mother should not give a child a cookie to stop him from crying.	-	13.6	31.2	15.8	19.0	17.6	2.7	3.04	19.9	34.5	20.8	17.6	6.8	.5	2.58	9.97	.0016

Table 7 (Continued)

Summary of Analysis of Responses to Child-Feeding Opinion Questionnaire Items

Item	Direction	Mothers							Daughters							X^{2a}	P
		SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$		
7. Right from the first, children should learn they can't be fed each time they cry.	-	23.5	43.9	17.2	10.4	4.5	.5	2.30	29.0	32.1	20.4	12.7	3.2	2.7	2.37	.58	.4471
8. Just because a school child is under pressure, it is no excuse for eating extra sweets.	-	15.8	51.6	17.2	11.3	4.1	0.0	2.36	14.5	38.5	24.0	15.4	6.3	1.4	2.65	3.73	.0535
9. [illegible] cracker serves no purpose.	-	3.6	25.3	18.1	33.0	19.0	.9	3.41	2.7	13.1	19.5	40.7	22.6	1.4	3.72	5.84	.0157
Subscale 4: Use of Food to Express Affection																	
1. A woman who loves her family spends a lot of time cooking dishes her family likes.	+	18.6	32.6	26.7	11.3	8.6	2.3	2.66	5.0	21.3	34.8	14.9	15.8	8.1	3.40	13.82	.0002
2. It is better to make a favorite dish to show someone you care than to just tell them so.	+	2.3	16.5	9.2	13.3	38.5	20.2	4.30	.9	9.0	16.3	29.4	23.1	21.3	4.29	.09	.7626
3. A good way for a mother to show she loves her child is to make his favorite dish.	+	2.7	25.8	29.4	12.7	22.6	6.8	3.47	1.8	8.6	34.8	27.6	20.4	6.8	3.77	6.60	.0102
4. A mother who loves her children never keeps food from them.	+	4.5	10.0	7.2	18.1	41.2	19.0	4.39	1.4	5.0	8.1	16.7	42.5	26.2	4.73	3.43	.0639

Table 7 (Continued)

Summary of Analysis of Responses to Child-Feeding Opinion Questionnaire Items

Item	Direction	Mothers							Daughters							X^{2}[a]	P
		SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$		
5. Food has little to do with good mother-child relationships.	-	10.4	28.5	13.1	15.8	22.6	9.5	3.40	7.2	19.0	14.9	28.1	21.3	9.5	3.66	4.81	.0283
6. It is silly to use food to show children that they are loved.	-	17.2	25.3	12.2	22.6	19.5	3.2	3.11	13.6	24.9	17.2	28.5	11.8	4.1	3.12	.01	.9238
7. It is silly to say that "the way to a person's heart is through the stomach."	-	8.1	32.1	12.5	24.0	13.6	2.7	3.11	10.4	23.5	28.5	22.2	14.0	1.4	3.10	.24	.6257

Note.-- N = 442 (221 mothers; 221 daughters)

[a]Chi squares were computed by grouping responses into an Agree (SA, A, TA) or Disagree (TD, D, SD) category. A 2 (group) X 2 (response) Yates' Corrected Chi Square was computed for each item.

Table 8

Percentages and Mean Response of Daughters to Reactive Eating Questions

Stress Situation	How Often Eat More?[a]								Amount Eaten[b]							
	N	AN	S	O	VO	AA	A	$\bar{X}$	N	AN	SA	AA	M	VM	EA	$\bar{X}$
Tests or Exams	3.6	7.2	43.0	19.0	11.8	10.9	4.5	3.79	1.8	3.2	12.7	45.7	29.0	7.7	0.0	4.20
Term Paper or Course Project	5.9	22.2	48.0	17.6	4.5	1.8	0.0	2.98	2.3	10.9	11.3	58.4	16.3	.9	0.0	3.78
Personal Conflict	12.2	29.0	29.0	14.9	10.0	2.7	2.3	2.99	5.4	18.6	19.5	29.0	20.8	5.4	1.4	3.63

Note.-- N = 221

[a]Responses were scored as follows: never (N)=1; almost never (AN)=2; sometimes (S)=3; often (O)=4; very often (VO)=5; almost always (AA)=6; always (A)=7.

[b]Responses were scored as follows: nothing (N)=1; almost nothing (AN)=2; small amounts (SA)=3; average amounts (AA)=4; much (M)=5; very much (VM)=6; enormous amounts (EA)=7.

eating score was obtained by summing the product of the frequency and amount of eating for each of three stress situations (Table 9).

Scores for each subscale of the CFOQ and for the total scale were computed for each subject by the summative method. For purposes of computing these scores, the positively stated items were reversed so that such items received a score of one for Strongly Disagree and a score of six for Strongly Agree. Negatively stated items received a score of one for Strongly Agree and a six for Strongly Disagree. Therefore, agreement with a negatively-stated item received the same score as did disagreement with a positively-stated item. The means and standard deviations for the four subscales and for the total scale were computed (Table 10). In general, the mean response for most items was near the midpoint of the Likert scale. This response pattern indicated that subjects tended not to have strong attitudes regarding the items that had been selected for the final CFOQ scale.

Mothers' responses to background information questions were used to summarize daughters' birth sizes and early feeding experiences (Appendix D).

Nine primary questions were posed and these questions served as guides for data analyses. The primary questions concerning child-feeding attitudes, reactive eating, and obesity were as follows:

Question 1. What is the relationship between mothers' attitudes and daughters' attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

Table 9

Means and SDs for Daughters' Reactive Eating

Stress Situation	$\bar{X}$	SD
Studying for tests or exams		
Frequency of eating more	3.79	1.40
Amount of eating	4.20	.99
Preparing term papers or major course project		
Frequency of eating	2.98	.99
Amount of eating	3.78	.95
Personal conflict with someone important to you		
Frequency of eating	2.99	1.39
Amount of eating	3.63	1.36
Total Score[a]	40.70	18.99

Note.-- N=221

[a]See text for procedure used to obtain subjects' total reactive eating scores.

Table 10

Means and SDs for CFOQ Subscales and Total Scale

Subscale	Mothers		Daughters	
	$\bar{X}$	SD	$\bar{X}$	SD
Reward	23.00	4.97	23.60	4.68
Punishment	17.60	4.40	21.43	4.75
Soothing	27.21	6.42	27.61	6.32
Affection	22.64	6.15	21.76	5.71
Total Scale	90.45	15.86	94.40	15.60

Note.-- The range of possible scores was from seven to forty-two for all subscales except Soothing which could have ranged from nine to fifty-four.

Pearson product-moment correlation coefficients were computed for mothers' and daughters' scores for each of the four subscales which comprised the attitude section of the Child-Feeding Opinion Questionnaire and for the total scale score. The coefficients, shown in Table 11, indicate that all but one of the correlations were in the positive direction. Daughters' scores on the Soothing subscale were negatively related to mothers' Punishment scores.

Daughters' scores on Subscale 1: Reward were not significantly correlated with mothers' scores on any subscales of the Child-Feeding Opinion Questionnaire. However, daughters' scores on Subscale 2: Punishment were correlated with mothers' scores on Subscale 1: Reward ($p. < .01$), Subscale 2: Punishment ($p. < .01$), and with mothers' Total Scale scores ($p. < .05$). Daughters' scores on Subscale 3: Soothing were correlated with mothers' scores on Subscale 3: Soothing ($p. < .05$) and with mothers' Total Scale scores ($p. < .05$). Daughters' scores on Subscale 4: Affection were not significantly correlated with mothers' scores on any subscale or on the Total Scale. Daughters' Total Scale scores were correlated with mothers' scores on Subscale 1: Reward ($p. < .01$) and with mothers' Total Scale scores ($p. < .01$).

In general, the correlations between mothers' attitudes and daughters' attitudes on each of the scales were low. Although four of the correlations were significant beyond the $p. < .05$ level and three were significant beyond the $p. < .01$ level, the attainment of these significance levels may have been attributed in part, to a large number of subjects. Despite the fact that some correlations were statistically significant, the highest one -- mothers' Punishment scores versus

Table 11

Correlations of Mothers' Versus Daughters'

Child-Feeding Attitude Scores

	Mothers[a]				
	Reward	Punishment	Soothing	Affection	Total Scale
Daughters[b]					
Reward	.083	.029	.061	.055	.080
Punishment	.193***	.202***	.055	.020	.147*
Soothing	.132	-.013	.150*	.124	.146*
Affection	.113	.032	.066	.118	.117
Total Scale	.179**	.077	.120	.116	.171*

Note.-- N=221 pairs

*p. < .05

**p. < .01

***p. < .005

daughters' Punishment scores -- achieved a coefficient of only .202. Such a coefficient indicates that only slightly more than four percent of the variance could be explained by the relationship between mothers' and daughters' attitudes on the use of food as a punishment.

Question 2. What is the relationship between daughters' degree of obesity or leanness and their own attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

Correlation coefficients were computed between each of the CFOQ scores and the daughters' level of obesity or leanness. Daughters' triceps skinfold thickness was the index of obesity used for the purposes of calculating these coefficients. Resulting coefficients are shown in Table 12. The coefficients were generally low, ranging from .003 to

Table 12

Correlation Coefficients for Daughters' CFOQ Scores Versus Their Skinfold Thickness

	Subscale				Total Scale
	Reward	Punishment	Soothing	Affection	
Daughters' Skinfold Thickness	-.107	.003	-.145	-.042	-.075

Note.-- N=219

-.145. None of these relationships were statistically significant. All of the correlations between the daughters' skinfold thickness and CFOQ

scores were negative except for Subscale 2: Punishment. Although the correlations were not significant, the relationships were generally in the same direction, that indicated that obese daughters had lower scores than nonobese daughters did on all scales except Punishment. Such a relationship shows a trend for obese persons to be less likely to favor the use of food as a reward, a soothing agent, or an expression of affection.

Question 3. What is the relationship between daughters' reactive eating and their own attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

Correlation coefficients were calculated for daughters' reactive eating scores versus their scores on each of the CFOQ subscales and for the total scale. Results, shown in Table 13, indicate very low correlation coefficients between these variables. The coefficients ranged from

Table 13

Correlation Coefficients for Daughters' CFOQ Scores Versus Reactive Eating

	Subscale				Total
	Reward	Punishment	Soothing	Affection	Scale
Daughters' Reactive Eating	-.035	-.056	.079	.044	.021

Note.-- N=219

a low of .021 for Reactive Eating versus CFOQ Total Scale to a high of -.079 for Reactive Eating versus Soothing. Such low correlation coefficients indicate almost no measurable relationship between the variables.

Question 4. What is the relationship between daughters' obesity or leanness and their mothers' attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

Correlation coefficients between daughters' obesity, measured by triceps skinfold thickness, and mothers' scores on the CFOQ subscales and Total Scale are summarized in Table 14. The results reflect very low

Table 14

Correlation of Mothers' CFOQ Scores Versus Daughters' Skinfold Thickness

	Subscale				Total
	Reward	Punishment	Soothing	Affection	Scale
Daughters' Skinfold Thickness	-.074	-.012	-.055	-.024	-.058

Note.-- N=209 pairs

correlation coefficients, ranging from -.012 for daughters' skinfold thickness versus mothers' scores on Punishment, to a high of -.074 for the relationship between daughters' skinfold thickness and mothers'

scores on Reward. Such low coefficients indicate almost no measurable relationships between these variables. However, all correlation coefficients resulting from this analysis were negative; i.e. mothers of daughters with greater skinfold thickness were less likely to favor the use of food for rewarding, punishing, soothing, or for expressing affection.

Question 5. What is the relationship between daughters' reactive eating scores and their mothers' attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection?

Pearson correlation coefficients computed between daughters' reactive eating scores and mothers' scores on CFOQ scales (Table 15) were very low, a fact that indicated little or no relationship between these

Table 15

Correlation of Mothers' CFOQ Scores Versus Daughters' Reactive Eating Scores

	Subscale				Total Scale
	Reward	Punishment	Soothing	Affection	
Daughters' Reactive Eating Scores	.080	.021	.099	.117	.116

Note.-- N=209 pairs

variables. All correlations were in the positive direction; i.e.,

daughters with higher reactive eating scores were more likely to have had mothers who favored the use of food for rewarding, punishing, soothing, and expressing affection. However, the relationships were so low that no meaningful relationship could be stated.

Question 6. What are the relationships among daughters' scores on the following Child-Feeding Opinion Questionnaire subscales: (a) Reward, (b) Punishment, (c) Soothing, and (d) Affection?

A matrix of Pearson correlation coefficients was computed for all CFOQ subscale scores for daughters (see Table 16). An examination of

Table 16

Correlation Coefficients Among Daughters' CFOQ Scores

	Subscale			
Subscale	Reward	Punishment	Soothing	Affection
Reward	1.000	.452**	.490**	.349**
Punishment		1.000	.111	.148*
Soothing			1.000	.586**
Affection				1.000

Note.-- N=221

*p. < .05

**p. < .0001

the results indicated that daughters' scores on Subscale 1: Reward were significantly (p. < .0001) correlated with their attitude scores on

Subscale 2: Punishment. A positive correlation indicated that a tendency to agree that it is a good idea to use food as a reward was related to a tendency to agree that food may appropriately be used as a punishment. An r value of .452 indicated that approximately 20% of the variance in scores on Reward could be accounted for by scores on Punishment.

Daughters' scores on Subscale 1: Reward were significantly ($p. < .0001$) correlated with their scores on Subscale 3: Soothing. An r value of .490 indicated that approximately 24% of the variance in scores on Reward could be explained by scores on Soothing.

Daughters' Subscale 1: Reward scores were also positively correlated ($p. < .0001$) with their scores on Subscale 4: Affection. An r value of .349 indicated that only slightly more than 12% of the variance could be explained by the relationship between these two variables.

Daughters' scores on Subscale 2: Punishment were positively correlated with their scores on Subscale 4: Affection. A positive relationship between these two subscales indicated that individuals who favored the use of food as a punishment also favored the use of food to express affection.

Daughters' scores on Subscale 3: Soothing were positively correlated ($p. < .0001$) with scores on Subscale 4: Affection. An r value of .586 indicated that approximately 34% of the variance could be explained by the relationship between scores on these two variables.

Question 7: What are the relationships among mothers' scores on the following Child-Feeding Opinion Questionnaire subscales: (a) Reward, (b) Punishment, (c) Soothing, and (d) Affection?

A matrix of Pearson correlation coefficients was computed for all CFOQ subscale scores of mothers. Results (Table 17) indicated the following:

Table 17

Correlation Coefficients Among Mothers' CFOQ Scores

Subscale	Subscale			
	Reward	Punishment	Soothing	Affection
Reward	1.000	.398**	.490**	.420**
Punishment		1.000	.038	.088
Soothing			1.000	.596**
Affection				1.000

Note.-- N=221

** p. < .0001

Mothers' scores on Subscale 1: Reward were positively correlated with scores on all other subscales. With Subscale 2: Punishment the r value of .398 (p. < .0001) indicated that 15.8% of the variance in Subscale 1 was associated with the variance in Subscale 2. With Subscale 3: Soothing the r value of .490 (p. < .0001) indicated that 24% of the variance was shared by these two variables. With Subscale 4: Affection the r value of .420 (p. < .0001) indicated that 17.6% of the variance was shared between Subscales on Reward and Affection.

Mothers' scores on Subscale 2: Punishment were not significantly correlated with Soothing or Affection. However, scores on Subscale 3: Soothing were positively correlated ($p. < .0001$) with scores on Subscale 4: Affection. A positive correlation indicated that mothers who favored the use of food as a soothing agent also favored the use of food to express affection. An r value of .596 indicated that 35.5% of the variance between mothers' scores on Soothing and Affection was shared.

Question 8. What is the relationship between daughters' reactive eating scores and their triceps skinfold thickness measurements?

A Pearson correlation coefficient was computed for daughters' reactive eating scores versus triceps skinfold thickness. A coefficient of .19 ($p. < .005$) was obtained. Although the results were statistically significant, the r value indicated somewhat less than four percent of the variance in skinfold thickness could be explained by reactive eating scores.

Question 9. What is the relationship between mothers' responses and daughters' responses to items on the Child-Feeding Opinion Questionnaire?

For purposes of comparing mothers' versus daughters' responses to individual items on the CFOQ, responses were grouped into two response mode categories, i.e. agree or disagree. The following responses were reassigned an agree label: (a) Strongly Agree (SA), (b) Agree (A), and (c) Tend to Agree (TA). The label of disagree was assigned to the following responses: (a) Tend to Disagree (TD), (b) Disagree (D), and (c) Strongly Disagree (SD). A 2 x 2 (group versus response) Yates' Corrected Chi Square was computed for each item. The groups were mother or daughter and the responses were agree or disagree.

Inspection of the results of chi square comparisons (Table 7) indicated that on 17 of the 30 items mothers' responses differed significantly from daughters' responses at the $p. < .05$ level or beyond. Results will be reported by Subscales. Only items which yielded significant differences will be discussed.

Subscale 1: Reward. Only one question on this subscale yielded significantly different responses from mothers and daughters. In response to Item 4, 16.7% of the daughters versus 33.2% of the mothers agreed that "It is a bad practice to honor school children's grades by making their favorite foods." The difference was significant at the $p. < .0001$ level.

Subscale 2: Punishment. Six of the seven statements on this subscale yielded significant differences between mothers' and daughters' responses. In response to Item 1 of this subscale, 24.4% of the daughters versus 7.7% of the mothers ($p. < .0001$) agreed with this statement: "A mother should withhold a child's favorite food if he's been bad."

The following statement (Item 2), "Infrequently, it is acceptable for a child who misbehaves to be made to go to bed without dinner," yielded a significant ($p. < .0077$) different response from mothers and daughters. Whereas 21.3% of the daughters agreed with the statement, only 11.4% of the mothers did so.

For Item 3, 58.8% of the daughters and 34.4% of the mothers agreed that "It is all right to tell a child he can't have dessert because he misbehaved." The difference was significant at the $p. < .0001$ level.

Item 5 stated, "Dessert is considered to be part of the total meal." Results indicated that 54.3% of the daughters versus 75.6% of the mothers ($p. < .0001$) agreed.

In response to this statement, "Dessert should not be withheld, even if vegetables aren't always eaten," 39.4% of the daughters versus 51.6% of the mothers agreed ($p. < .0130$).

The following statement (Item 7), "Withholding dessert because a child did something the mother disapproves of serves no purpose," yielded significantly ($p. < .0001$) different responses from mothers and daughters. Although 52.0% of the daughters agreed with the statement, 76.0% of the mothers did so.

Subscale 3: Soothing. Six of nine items on this subscale yielded significantly different responses from mothers and daughters.

Although 50.2% of the daughters agreed with this statement (Item 1), "It is only natural to give a child a cookie or similar food to make him feel better when he's been hurt," 60.3% of the mothers agreed ($p. < .0430$).

On Item 4, 26.7% of the daughters and 48.2% of the mothers agreed with this statement: "When school children are studying for tests, they should be allowed to snack more than usual." The difference was significant at the $p. < .0001$ level.

Whereas 35.3% of the daughters agreed with Item 5, "A snack is a good thing to give a child who takes a hard fall, so he'll feel better," only 20.8% of the mothers agreed ($p. < .0010$).

The following statement (Item 6), "A mother should not give a child a cookie to stop him from crying," yielded significantly different

($p. < .0016$) responses from mothers and daughters. Among daughters, 75.1% agreed; among mothers, 60.6% agreed.

In response to Item 8, "Just because a school child is under pressure, it is no excuse for eating extra sweets," 76.9% of the daughters and 84.6% of mothers agreed. The difference was significant at the $p. < .0535$ level.

On Item 9, "Giving a disappointed child a cookie or cracker serves no purpose," 35.3% of the daughters and 47.1% of the mothers agreed ($p. < .0157$).

Subscale 4: Affection. On Subscale 4, three items (Items 1, 3, and 5) of the seven comprising the scale achieved significance, and one item (Item 4) approached significance.

Compared with 61.1% of the daughters, 77.8% of the mothers ($p. < .0002$) agreed that "A woman who loves her family spends a lot of time cooking dishes her family likes."

This statement (Item 3), "A good way for a mother to show she loves her child is to make his favorite dish," yielded agreement among 45.2% of the daughters and 57.9% of the mothers ($p. < .0102$).

Item 5, "Food has little to do with good mother-child relationships," yielded agreement among 41.2% of the daughters and 52.0% of the mothers ($p. < .0283$).

Discussion of Results

The present study yielded low correlations between mothers' and daughters' child-feeding attitudes as well as between those attitudes and obesity/leanness or reactive eating among daughters. The low

correlations failed to support an hypothesis found in the literature (Bruch, 1971, 1973, 1975; Cameron, 1963; Gifft, Washbon, & Harrison, 1972) that child-feeding patterns are related to reactive eating and obesity in adulthood. However, these findings are not directly comparable to claims found in the literature since the present study dealt with attitudes whereas previous writers have referred to actual child-feeding behavior patterns.

A low correlation found between reactive eating and obesity/leanness among college women in the sample challenged previous claims (Bruch, 1971, 1973, 1975; Cameron, 1963; Gifft, Washbon, & Harrison, 1972; Plutchik, 1976; Rotmann & Becker, 1970; Silverstone, 1972; Stunkard, 1976) that reactive overeating is a key etiological factor in obesity.

Several significant intercorrelations found between CFOQ scores for both mothers and daughters indicated that a generalized set of food-related attitudes may exist. Individuals who tended to favor the use of food in a contingency manner for one type of situation also tended to favor its use in other ways. These findings seemed to indicate that the Child-Feeding Opinion Questionnaire may be assessing a generalized attitude toward the use of food as a communication device. Further refinement of the instrument seemed to be implicated.

The findings of a number of significant differences between mothers' and daughters' responses to items on the CFOQ cannot be fully explained because of the intergenerational nature of the study. A number of possible factors may have contributed to generational differences. Among these factors are (a) differences in prevailing child-rearing attitudes associated with the two different periods of history in which

mothers and daughters were reared, (b) age differences, and (c) experiential differences: i.e. mothers had experienced the mothering role although none of the daughters had done so. Additional research will be needed to determine the extent to which these variables either separately or combined, contribute to particular child-feeding attitudes held by different groups.

Summary

The findings of the present research study which were of primary importance were the following:

1. When attitude items of the Child-Feeding Opinion Questionnaire were grouped into subscales, the correlations computed between mothers' and daughters' scores on each subscale and for the total scale were generally low. Although four of the 20 coefficients were significant beyond the $p. < .01$ level and three were significant beyond the $p. < .05$, the significance levels were due, in part, to a large number of subjects. Little variance could be explained by the relationship between mothers' and daughters' CFOQ subscale scores.

2. All Pearson correlation coefficients computed between daughters' Child-Feeding Opinion Questionnaire subscale scores and their degrees of obesity/leanness (measured by skinfold thickness) were nonsignificant. All coefficients computed between daughters' CFOQ scores and their skinfold thickness measurements were in the negative direction with the exception of Subscale 2: Punishment versus skinfold thickness. The negative correlations indicated that daughters' with greater skinfold

thickness measurements (more fat) tended to disfavor the use of food as a reward, soothing agent, or expression of affection.

3. Daughters' reactive eating scores were not significantly correlated with any scores on the Child-Feeding Opinion Questionnaire.

4. Daughters' degree of obesity/leanness as measured by the triceps skinfold thickness was not significantly correlated with mothers' scores on any subscale of the Child-Feeding Opinion Questionnaire or with the CFOQ Total Scale. All Pearson correlation coefficients computed between these variables were very low. However, all correlations were in the negative direction; i.e. daughters' with higher skinfold thickness scores had mothers who were less likely to favor the use of food as a reward, punishment, soothing agent, or expression of affection.

5. Daughters' reactive eating scores were not significantly related to mothers' scores on any subscale of the Child-Feeding Opinion Questionnaire or with the CFOQ Total Scale. Although Pearson correlation coefficients between these variables were very low, all were in the positive direction; i.e. daughters who had higher reactive eating scores had mothers who were more likely to favor the use of food as a reward, punishment, soothing agent or expression of affection.

6. Pearson correlations among daughters' CFOQ subscale scores indicated significant relationships between the following subscales: (a) Reward and Punishment, (b) Reward and Soothing, (c) Reward and Affection; (d) Punishment and Affection, and (e) Soothing and Affection. All intercorrelations among daughters CFOQ subscale scores were in the positive direction, a fact that indicated that a tendency to favor the

use of food in one situation was related to the tendency to approve the use of food for other situations.

7. Pearson correlations among mothers' CFOQ subscale scores indicated significant relationships between the following subscales: (a) Reward and Punishment, (b) Reward and Soothing, (c) Reward and Affection, and (d) Soothing and Affection. All correlations were in the positive direction, a finding that indicated that a tendency to favor the use of food for one situation was related to the tendency to approve the use of food for other situations.

8. Daughters' reactive eating scores were not significantly related to their obesity/leanness scores measured by the triceps skinfold thickness. Although the Pearson coefficient was positive and significant, the r value indicated that only 3.6% of the variance in students' skinfold thickness could be explained by the students' reactive eating scores.

9. When responses to each item on the CFOQ were classified into an "agree" or "disagree" category, chi-square comparisons indicated that mothers' attitudes differed significantly from daughters' attitudes on 17 of the 30 items.

Only one of seven statements related to the use of food as a reward yielded differences whereas six of seven statements related to the food as a punishment were significant. Six of nine statements on soothing and three of seven statements on affection yielded significantly different responses from mothers and daughters.

On Subscale Reward and Subscale Punishment, results on all statements which yielded significance indicated that more daughters than

mothers favored the use of food as a contingency device. The one significant item on Subscale Reward indicated that daughters were more lenient than mothers were in their attitude toward the use of food to reward good grades. In regard to punishment, more daughters than mothers favored withholding food to punish undesirable behaviors. This finding was true on all six statements which yielded significant differences.

On Subscale Soothing, responses to three statements indicated that more mothers than daughters favored cookies for hurt children, snacks for children studying for tests, and cookies to stop children from crying. However, more daughters than mothers favored snacks to soothe children who have fallen, sweets for pressured school children, and cookies or crackers for disappointed children.

On Subscale Affection, responses to all three statements that yielded significance indicated that more mothers than daughters agreed that mothers who love their families will cook more and that making children's favorite dishes is a good way to express love. More mothers than daughters disagreed that food has little to do with good mother-child relationships. An item that approached significance on Subscale Affection indicated more mothers than daughters agreed that mothers who love their children never keep food from them.

10. Results were discussed in view of previous research and theory on the relationships among child-feeding patterns, reactive overeating, and obesity.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Obesity has long been one of the most complex problems challenging professionals who are concerned with the physical and psychological well-being of individuals. That obese persons experience a number of psychological and physiological health problems has been well documented. However, the multifactorial nature of etiological factors contributing to obesity has hampered attempts to explain, prevent, and treat this problem. Many writers have speculated that maladaptive child-feeding patterns may predispose individuals to overeating as a mechanism for coping with anxiety. Called reactive overeating, this behavior is frequently said to be directly linked to obesity among adults. However, little empirical research has been conducted on this problem.

Review of Literature Related to Obesity

Estimates of the prevalence of obesity indicate that it is present in 9.3% of children under 18 years of age (Committee on Nutrition Advisory to CDC Food and Nutrition Board, 1974). Among adults, estimates have ranged from 5.1% for black males (ages 45 to 74) below the poverty line to 35% for black females (ages 20-44) below the poverty line (U. S. Public Health Service, 1976). In general, obesity has been reported by the Public Health Service (1976) to be more prevalent among women than among men.

Methods and limitations of assessing obesity have been described by Christakis (1975), Garn, Clark, and Guire (1975), and by Grande (1975). Body weight and weight-for-height ratios as indicators of body fat have been described as far from ideal (Garn, Clark, & Guire, 1975; Grande, 1975). An evaluation of more direct assessments of obesity (Grande, 1975) indicated that although many modern techniques are expensive and require highly skilled personnel, the triceps skinfold thickness has been reported to provide a practical and reliable estimate of body fat (Grande, 1975), especially among adult women (Garn, Clark, & Guire, 1975).

Characteristics of obese persons have been described by several researchers. Obese persons are frequently described as having personal adjustment problems (Bruch, 1971, 1973, 1975; Craddock, 1973; Kiell, 1973; Silverstone, 1968, 1974). However, it has not always been clear whether adjustment problems were actually related to the obese condition (Stunkard, 1966). Although two researchers (Atkinson & Ringuette, 1967; Wunderlich, 1975) found personality differences between obese and non-obese persons, Sallade (1973) found none. No particular set of personality traits has been found to describe the "obese character." Several researchers have found obese individuals to have poor self-images (Bruch, 1973; Glucksman & Hirsch, 1969; Grinker, Hirsch & Levin, 1973; Hirsch, 1975b; Leon, 1975; Mendelson, 1966; Meyer & Tuchelt-Gallwitz, 1968; Sallade, 1973; Stunkard & Burt, 1967). Others have described the obese as having a high level of emotional reactivity and sensitivity (Rodin, 1975). An hypothesis that eating habits of obese individuals are frequently under the control of external food-relevant cues rather

than internal physiological cues has been supported by several studies (Goldman, Jaffa, & Schachter, 1968; Levitz, 1975; Meyer & Pudel, 1972; Nisbett, 1968; Rodin, 1975; Schachter, Goldman, & Gordon, 1968; Stunkard & Koch, 1964; Tom & Rucker, 1975).

Although the characteristics of obese persons have been well described, the complex etiology of the problem is still widely disputed. Biological factors contributing to obesity that have been described in the literature include genetics, metabolic disorders, central nervous system damage, early formation of excess adipose cells, reduced activity, and excessive caloric intake.

The key psychological factor which has been postulated to contribute to obesity has been overeating as a defensive reaction to anxiety (Babcock, 1948; Bruch, 1971, 1973, 1975; Kaplan & Kaplan, 1957; Smith, Shoffner, & McLester, 1973; Stunkard, 1976). The process through which individuals acquire a pattern of reactive overeating has been discussed in the literature (Bruch, 1971, 1973, 1975). According to Bruch (1975), a child may begin to associate food with comfort if the mother offers food for reasons other than nutritional need. Gifft, Washbon, and Harrison (1972) have proposed that reactive overeating is a pattern acquired in the early child-feeding situation. These authors suggested that mothers who cannot recognize which infant cries communicate hunger and mothers who offer food simply to stop an infant's crying may be setting the stage for the child to come to be an obese adult since he may ". . . turn to food as a way to cope with all frustration" (p. 80).

Clinical reports of obesity which developed as a result of anxiety-related overeating have been provided by Bruch (1971, 1973, 1975),

Rotmann and Becker (1970) and by Stunkard (1976). However, only a few empirical investigations of reactive overeating have been reported. McKenna (1972) observed that obese subjects ate considerably more than usual under high-anxiety laboratory conditions, but Wunderlich (1972) found no significant differences in the number of crackers eaten by obese subjects in control, anxiety, or fear situations. In interviews conducted by Silverstone (1968), more obese than nonobese women reported overeating when they were anxious, but no such difference was found among males. Plutchik (1976) found the degree of overweight among obese subjects to be positively correlated with the self-reported frequency of overeating and eating more because of depression and nervousness. These studies provided evidence that reactive eating exists among obese adults but did not provide information on how this behavior may be acquired.

Only one empirical study (Byrne, Golightly, & Capaldi, 1963) was found in which reactive eating among adults was investigated in relationship to childhood experiences. In a survey of past and present food attitudes and habits, subjects who had positive food attitudes -- i.e., they liked food -- indicated that their childhood food-related experiences were pleasant. There appeared to be a relationship between their parents' use of food for soothing sickness or unhappiness and for celebrating special occasions and the students' reports that they tended to gain weight and that they used food as a self-administered reward when they were depressed or were celebrating special events. Although several of the correlational coefficients reported by these authors were significant, they were generally low. Statistical significance may have been attained, in part, because of the large number of subjects used in

the study. Therefore, any interpretation of the results must be considered as tentative.

Design of the Study

The major purpose of this investigation was to determine the relationships among levels of obesity/leanness, reactive eating, and child-feeding attitudes of college women and the child-feeding attitude of these students' mothers.

The child-feeding attitudes which were of interest in the study were those related to the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection. A 30-item Likert scale called the Child-Feeding Opinion Questionnaire was developed. The attitudinal areas of interest in the study constituted the four subscales of the CFOQ.

Subjects in the study included 221 college women and their mothers. The college women were between the ages of 18 and 24 years and were all students at Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Data collected for the study included responses of the mothers and daughters to the Child-Feeding Opinion Questionnaire items. Four anthropometric measurements were taken for each daughter and the triceps skinfold thickness was used as an indicator of the degree of obesity or leanness. Daughters also responded to six questions which were used to determine their tendencies toward reactive eating. Additional data included daughters' birth sizes and early feeding experiences as well as their ages, curriculums, and birth orders.

Analysis of the Data

Mothers' and daughters' scores on each subscale and for the total scale of the Child-Feeding Opinion Questionnaire were computed by the summative method. Daughters' reactive eating scores were computed by summing the products of the frequency and amount of eating as self-reported for each of three stress situations.

Pearson correlation coefficients were computed between each of the variables to determine the relationships between (a) mothers' and daughters' CFOQ scores, (b) daughters' CFOQ scores and their degrees of obesity/leanness measurements, (c) daughters' reactive eating and CFOQ scores, (d) daughters' obesity/leanness measurements and mothers' CFOQ scores, and (e) daughters' reactive eating scores and mothers' CFOQ scores. Correlation coefficients were also computed among all CFOQ scores for mothers and for daughters. Finally, a correlation coefficient was computed to determine the relationship between daughters' reactive eating scores and their degrees of obesity/leanness as measured by triceps skinfold thickness.

To assess the relationship between mothers' and daughters' responses on each CFOQ item, responses were categorized according to an "agree" or "disagree" response mode. Yates corrected chi square coefficients were computed to determine whether mothers and daughters responded differently to each item.

Conclusions

The study sought to determine the relationships among the degrees of obesity/leanness, child-feeding attitudes and reactive eating among

college women and the child-feeding attitudes of the students' mothers. The conclusions which could be drawn from this investigation were the following:

1. Correlation coefficients computed between mothers' and daughters' scores on the Child-Feeding Opinion Questionnaire suggested very little relationship between mothers' and daughters' attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, or (d) an expression of affection. Although some of the correlation coefficients were statistically significant, the attainment of significance may have been because of the large number of subjects (N=221 pairs), a fact that yielded low coefficients significant. The highest coefficient achieved between two scores was an r value of .202 between mothers' and daughters' scores on Subscale 2: Punishment of the CFOQ, a result which indicated that only about four percent of the variance in daughters' scores could be explained by their mothers' attitudes.

2. There was no significant relationship between the degrees of obesity/leanness among college women and their attitudes toward the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, or (d) an expression of affection.

3. Reactive eating scores among the college women in the present sample were not significantly related to their attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, or (d) an expression of affection.

4. The degrees of obesity/leanness among college women in the present sample were not significantly correlated with their mothers.

attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, or (d) an expression of affection.

5. Reactive eating scores among college women in the present sample were not significantly correlated with their mothers' attitudes on the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, or (d) an expression of affection.

6. Among the college women in this study, several significant positive relationships existed between their scores on subscales of the Child-Feeding Opinion Questionnaire. The following subscales were found to be significantly related: (a) Reward and Punishment, (b) Reward and Soothing, (c) Reward and Affection, (d) Punishment and Affection, and (e) Soothing and Affection. The positive correlations achieved between daughters' CFOQ subscale scores indicated that subjects who tended to favor the use of food as a reward also tended to favor the use of food as a punishment, as a soothing agent, and as an expression of affection. Likewise, subjects who tended to favor the use of food to express affection also tended to favor its use as a punishment and as a soothing agent. The only relationship among daughters' CFOQ scores which was not significant was that computed between attitudes toward the use of food as a punishment and attitudes toward the use of food as a soothing agent.

7. Among the mothers participating in this investigation, several significant positive relationships existed between their scores on subscales of the Child-Feeding Opinion Questionnaire. The following subscale scores were found to be significantly related: (a) Reward and Punishment, (b) Reward and Soothing, (c) Reward and Affection, and (d) Soothing and Affection. The positive correlations achieved between

mothers' CFOQ subscale scores indicated that those mothers who tended to favor the use of food as a reward also favored its use as a punishment, as a soothing agent, and as an expression of affection. Likewise, those mothers who favored the use of food as a soothing agent also favored its use as an expression of affection. The correlation coefficients computed between mothers' CFOQ subscale scores were found to be nonsignificant: i.e., Punishment versus Soothing and Punishment versus Affection.

It is interesting to note that when intercorrelations between CFOQ subscales were computed separately for daughters (Table 16) and for mothers (Table 17) the coefficients (except those computed between Punishment versus Soothing and between Punishment versus Affection) were quite similar for all variables. This result seemed to indicate that, although mothers' attitudes were not correlated with daughters' attitudes, within each group certain subscale scores seemed to be equally predictive of other subscale scores for both mothers and daughters.

8. Although statistically significant, the correlation between reactive eating and obesity/leanness among college women in this study was rather low. Less than four percent of the variance in students' triceps skinfold thickness measurements could be explained by their reactive eating scores.

9. When responses to attitude statements were recorded into an "agree" or "disagree" category, mothers' child-feeding attitudes were significantly different from daughters' attitudes on 17 of 30 CFOQ items. In general, more daughters than mothers favored the use of food in a contingent manner. Daughters favored giving favorite foods to reward school grades and withholding food to punish undesirable behaviors. In

regard to the use of food as a soothing agent, more mothers than daughters favored the use of food for children who are hurt, studying for tests or crying. However, more daughters than mothers favored snacks for children who have fallen, sweets for pressured school children, and cookies or crackers for disappointed children. More mothers than daughters agreed with statements indicating that food provides an appropriate vehicle for the expression of affection.

Recommendations

The present investigation was conducted to assess the relationships among obesity or leanness, reactive eating, and child-feeding attitudes of a sample of college women and the relationships of these variables to the child-feeding attitudes of the students' mothers. Child-feeding attitudes which were pertinent to this study included the use of food as (a) a reward, (b) a punishment, (c) a soothing agent, and (d) an expression of affection. Since no previous research was found which dealt with the relationships being investigated, the present research was conducted as an exploratory study. Three aspects of this investigation provided suggestions for additional research. These aspects included (a) the development of the Child-Feeding Opinion Questionnaire, (b) primary findings from data analyses, and (c) background data obtained on daughters.

Child-Feeding Opinion Questionnaire Development

Development of the CFOQ included (a) evaluation of content validity by a panel of judges, (b) pilot testing for wording and clarity, and (c) pilot testing to determine items to be used for the final instrument.

Results of the final study indicated that summative scores obtained for CFOQ subscales were not predictive of either the degrees of obesity/leanness or of reactive eating scores among college women who participated in the study. Some suggestions concerning further refinement of the CFOQ seemed appropriate.

The study was concerned with attitudes related to four aspects of child-feeding. These areas were used to construct subscales of the CFOQ. Factor analysis was not performed since subscales were determined a priori. Cluster analyses were executed separately for mothers' and daughters' responses to items on each subscale of the Pilot Study II CFOQ. However, since many items yielded almost total agreement among all respondents, many items clustered in a noninterpretable fashion. Thus, only items which produced variation among respondents were retained for the final CFOQ form. Therefore, the following suggestions seemed appropriate:

1. Factor analysis on the total instrument should be executed for separate and combined responses of mothers and daughters to determine whether one or more principal factors may be said to explain subjects' responses. Several fairly high correlations between subscale scores for mothers and for daughters suggested a possible unidimensional character of the CFOQ.

2. Test-retest reliabilities for each item on the CFOQ were determined by correlating test and retest responses among a random sample of daughters who participated in the final study. Although the correlation coefficients were reported, they were not used as a criteria for inclusion of items in data analyses. Eight of the 30 CFOQ items had

test-retest correlation which were not significant at the p. <.001 level. Therefore, it is suggested that items with low test-retest correlations be eliminated from any future research in which the CFOQ is used.

3. Subscale scores on the CFOQ were predictive of neither daughters' degree of obesity/leanness nor their reactive eating scores. However, certain items on one or more of the CFOQ subscales may be predictive of these two variables. Therefore, it is suggested that discriminant analysis be executed to determine which, if any, items discriminate high- versus low-obese daughters and high versus low scores on the reactive eating scale.

Findings from Present Data

The present investigation sought to determine whether certain food-related attitudes were related to reactive eating and/or to obesity or leanness in college women. Food related attitudes were assessed through the use of Likert-type scale. It was assumed that attitudes of mothers who participated were similar to those attitudes they held when their daughters were young children. It was also assumed that the attitudes reported by the mothers were reflective of the behaviors used with the college daughters who were primary subjects of the research. It is not known whether or not these assumptions were valid. Therefore, these suggestions were deemed appropriate for future research:

1. Observation research should be done in order to determine whether attitudes reported on the CFOQ are indeed reflective of behavioral patterns among parents of young children.

2. Further, it is recommended that longitudinal research be done to determine whether the child-feeding behaviors used with young

children are predictive of reactive eating or obesity/leanness among the children as they grow older.

3. It would also be interesting to follow-up the college women who participated in this study when they become parents to determine whether their CFOQ responses are predictive of the behaviors they use with their own children.

Results of this investigation indicated no relationship between daughters' reactive eating scores and their degrees of obesity/leanness. The fact that test-retest correlations for all reactive eating items were quite high indicated that these college women were relatively stable in their self-reporting of this behavior. However, it is not known how accurate the self-reports were. It is recommended that observational research be done to determine whether subjects who self-report large amounts of reactive eating indeed do consume more food during temporary periods of stress.

Reactive eating items used in this study dealt with three types of stress normally experienced by college students in recurrent temporary patterns. Wide personality differences which determine the amounts of anxiety actually experienced by students during crisis periods may exist. Further, since personality differences may be associated with continuous anxiety among some subjects, it is recommended that in any future research on the present topic an assessment be made of individual responses to temporary stress. An assessment should also include the normal anxiety level which is characteristic of individual subjects.

Results of this study indicate that mothers of college women differed significantly from their daughters on more than half of the

items on the CFOQ. However, these differences could be attributed to one or more of these variables: (a) age, (b) prevailing child-rearing patterns in the period of history in which the two age groups were reared, or (c) the experience of parenting which was present only in the mothers' group. Further research is needed to determine the relative contribution of these variables to the attitudinal differences between the groups.

The present study was limited to a nonrandom sample of college women and their mothers. All college women who participated were students at VPI & SU in Blacksburg, Virginia. Therefore, results are not generalizable beyond the sample. Further research should be conducted using a more representative sample and using subjects from other locations.

To the extent that college students may be said to be of middle-class status, the present sample was middle-class. Future research is needed to determine whether there are social class differences in reactive eating and in child-feeding attitudes.

Finally, since the present study was conducted using females as subjects, further study is needed to determine the relationships of the variables under study in a sample that includes fathers and sons as well as mothers and daughters.

Daughters' Background Data

Low correlation coefficients attained in the present study indicated that only a small proportion of the variance in triceps skinfold measurements of college women could be explained by the child-feeding attitudes of their mothers, by their own child-feeding attitudes, or by their own

reactive eating scores. However, since one's body composition is the result of the complex interaction of a number of biological, genetic, and psychological factors, these factors must be considered when any body measurement is being predicted. Three factors which have been reported in the literature as being related to adult obesity/leanness status include the following: (a) birth weight (Fisch, Bilek, & Ulstrom, 1975; Huenemann, 1974); (b) early introduction of solid foods to the infants diet (Lloyd, 1975; Shulka, Forsyth, Anderson, & Marwah, 1972; Weil, 1975); (c) breast versus bottle feeding (Huenemann, 1974; Weil, 1975); (d) maternal response to infant's cry (Ainsworth & Bell, 1969; Bruch, 1973; Gifft, Washbon, & Harrison, 1972). Although background data on these variables were gathered for purposes of describing the sample, they were not analyzed.

It is suggested that a multiple regression approach be used in future research with the present data to determine the amount of variance which can be accounted for by the combined influence of these biological and psychological factors.

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APPENDIX A

PILOT STUDY I MATERIALS

Initial Pool of Child - Feeding

Opinion Statements

Subscale 1

Use of Food As A Reward

Positive Statements:	Random Number
1. Children should have dessert only after everything on the plate has been eaten.	42
2. A good way to get a child to finish a chore is to promise a snack when he's finished.	23
3. A mother should let the child request his favorite meal when he has won an outstanding honor.	39
4. An excellent way to recognize a child's special accomplishment is to take him out to eat.	12
5. If a child drinks all his milk, a sweet food is a good reward.	26
6. A sweet food won't harm a child if its given for doing something very well.	41
7. If a child drinks all his milk, a sweet food is a good thing to give to get him to drink it next time.	51
Negative Statements:	
1. Mothers who know what they're doing don't use dessert as a bribe to get children to eat.	3
2. It's unforgivable to require children to eat vegetables before dessert is given.	7
3. It is a bad practice to honor school children's grades by making their favorite foods.	1
4. It is disgusting to see mothers use desserts, crackers, and cookies to get children to do something.	6
5. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	4
6. Giving a snack to children because they are playing quietly is a poor practice.	44

	Random Number
7. Exempting a child from eating foods he dislikes when he has done something very good, is a rotten practice.	30

Subscale 2

Use of Food As A Punishment

Positive Statements:

1. Children who misbehave at the table should not be allowed to finish the meal.	9
2. It is all right in some cases to tell a child he can't have dessert because he misbehaved.	33
3. A child who misbehaves badly can be made to go to bed without dinner, as long as its not too often.	25
4. A wise mother sometimes should withhold a child's favorite food if he has been bad.	20
5. A child who refuses to eat what he has been given should be made to eat that much more.	17
6. Children shouldn't be allowed to go out to play until they've eaten most of the food on their plates.	29
7. It's not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	57
8. When a child refuses to clean his plate, he should be given the same plate of left over food at the next meal.	53

Negative Statements:

1. Children should never be denied food because they have misbehaved.	11
2. It is wrong to make children eat something they don't like because they misbehaved.	36
3. Dessert should be part of the meal and not withheld even if vegetables aren't eaten.	50

	Random Number
4. It is useless to think of forcing a child to eat a food he doesn't like, just because he was bad.	28
5. Withholding dessert because children did something the mother does not approve of, serves no purpose.	46
6. Only a rotten mother would serve a child's least favorite food because he was naughty.	32
7. Serving a child a different food from the rest of the family because of undesirable behavior is foolish.	49
8. Dessert is a part of the meal, not something children should have to work for.	60

Subscale 3

Use of Food As A Soothing Agent

Positive Statements:

1. The best way to get a baby to stop crying is to feed him.	5
2. It's only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	16
3. Good mothers know that when children feel sad and "blue," a favorite food will make them feel better.	19
4. An excellent means for consoling a disappointed teenager is to make a favorite dish.	38
5. When someone in a family dies, gifts of food help one feel better.	13
6. When school children are studying for tests, they should be allowed to snack more than usual.	43
7. A snack is a good thing to give a child who takes a hard fall or bump, so he'll feel better.	2

Negative Statements:	Random Number
1. Right from the first, children should learn they can't be fed everytime they cry.	52
2. A wise mother won't give a child a cookie to stop him/her from crying.	40
3. Giving a hurt or disappointed child a cookie or cracker serves no purpose.	27
4. When children are upset, its no time to think of giving them food.	35
5. When a family has just moved, making the childrens' favorite foods makes them feel more at home.	10
6. Just because a school child is under pressure, it's no excuse for eating extra sweets.	37
7. When a child is hurt or upset, its better to hold him or talk to him than to offer a cracker.	8

Subscale 4

Use of Food to Express Affection

Positive Statements:	
1. A mother who loves her children never keeps food from them.	18
2. It is sometimes easier to make a favorite dish to show someone you care than to just tell them so.	15
3. A woman who loves her family spends a lot of time cooking dishes her family likes.	45
4. When a child rejects the food his mother cooked for him, it is as though he has rejected her love.	22
5. Cooking is an important way that a mother shows concern for her children.	31
6. Every mother should make a child's favorite dish occasionally just to show the child she cares about him.	48

	Random Number
7. A mother who loves her child will give him all he wants to eat.	54
8. A loving mother will make her child's favorite dish when the child returns from a long stay away from home (camp, etc.).	34

Negative Statements:

1. It is silly to say that "the way to a person's heart is through the stomach."	58
2. Too much focus on food can spoil a good mother-child relationship.	21
3. Food has little to do with good mother-child relationships.	59
4. Sweet, rich foods are no more likely to show someone you care, than are fruits and vegetables.	56
5. It is silly to try to use food to show children that they are loved.	55
6. Cooking for the family really has nothing to do with the way a mother feels about her children.	47
7. It is better for mothers to hug and caress their children than to give them gifts of food.	14
8. When a child refuses to eat something his mother made especially for him, it doesn't mean he doesn't love his mother.	24

Pilot Study I Child - Feeding

Opinion Questionnaire Form

Directions: Following is a list of statements of opinions about child-feeding. Since this is a survey of opinions, it is desired that you indicate your own personal opinions, regardless of whether you think other people might agree or disagree with you. There are no "right" or "wrong" answers to these statements.

Please read each statement carefully, and indicate your opinion by circling the letter(s) according to the code given below.

If you:	Circle
Strongly Agree	SA
Agree	A
Tend to Agree	TA
Tend to Disagree	TD
Disagree	D
Strongly Disagree	SD

Please do not omit any statements. If you are somewhat unsure of your opinion, please indicate your Tendency to Agree or Tendency to Disagree by marking TA or TD.

Directions for IBM Sheet:

1. After answering all opinion questions and background information, please mark the corresponding numbers on the IBM sheets. Numbers above each column indicate the circle to blacken. They are as follows:

1	2	3	4	5	6
SA	A	TA	TD	D	SD

   Using the number two pencil provided, darken the entire circle which corresponds to your opinion. Do not mark in any circles crossed by the red line.

2. Place your IBM sheet inside the answer booklet and give it to the person in charge.

Child Feeding Opinions	Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
	SA	A	TA	TD	D	SD
1. It is a bad practice to honor school children's grades by making their favorite foods.	SA	A	TA	TD	D	SD
2. A snack is a good thing to give a child who takes a hard fall or bump, so he'll feel better.	SA	A	TA	TD	D	SD
3. Mothers who know what they're doing don't use dessert as a bribe to get children to eat.	SA	A	TA	TD	D	SD
4. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	SA	A	TA	TD	D	SD
5. The best way to get a baby to stop crying is to feed him.	SA	A	TA	TD	D	SD
6. It is disgusting to see mothers use desserts, crackers, and cookies to get children to do something.	SA	A	TA	TD	D	SD
7. It's unforgivable to require children to eat vegetables before dessert is given.	SA	A	TA	TD	D	SD
8. When a child is hurt or upset, its better to hold him or talk to him than to offer a cracker.	SA	A	TA	TD	D	SD
9. Children who misbehave at the table should not be allowed to finish the meal.	SA	A	TA	TD	D	SD
10. When a family has just moved, making the childrens' favorite foods makes them feel more at home.	SA	A	TA	TD	D	SD
11. Children should never be denied food because they have misbehaved.	SA	A	TA	TD	D	SD
12. An excellent way to recognize a child's special accomplishment is to take him out to eat.	SA	A	TA	TD	D	SD
13. When someone in a family dies, gifts of food help one feel better.	SA	A	TA	TD	D	SD
14. It's better for a mother to hug and caress her children than to give them gifts of food.	SA	A	TA	TD	D	SD
15. It's sometimes easier to make a favorite dish to show someone you care than to just tell them so.	SA	A	TA	TD	D	SD
	1	2	3	4	5	6

	Strongly Agree	Agree	Tend to Agree	Tend to Disagree	Disagree	Strongly Disagree
	1	2	3	4	5	6
	SA	A	TA	TD	D	SD
16. It's only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	SA	A	TA	TD	D	SD
17. A child who refuses to eat what he has been given should be made to eat that much more.of it.	SA	A	TA	TD	D	SD
18. A mother who loves her children never keeps food from them.	SA	A	TA	TD	D	SD
19. Good mothers know that when children feel sad and "blue," a favorite food will make them feel better.	SA	A	TA	TD	D	SD
20. A wise mother sometimes should withhold a child's favorite food if he has been bad.	SA	A	TA	TD	D	SD
21. Too much focus on food can spoil a good mother-child relationship.	SA	A	TA	TD	D	SD
22. When a child rejects the food his mother cooked for him, it is as though he has rejected her love.	SA	A	TA	TD	D	SD
23. A good way to get a child to finish a chore is to promise a snack when he's finished.	SA	A	TA	TD	D	SD
24. When a child refuses to eat something his mother made especially for him, it doesn't mean he doesn't accept her love.	SA	A	TA	TD	D	SD
25. A child who misbehaves badly can be made to go to bed without dinner, as long as its not too often.	SA	A	TA	TD	D	SD
26. If a child drinks all his milk, a sweet food is a good reward.	SA	A	TA	TD	D	SD
27. Giving a hurt or disappointed child a cookie or cracker serves no purpose.	SA	A	TA	TD	D	SD
28. It is useless to think of forcing a child to eat a food he doesn't like, just because he was bad.	SA	A	TA	TD	D	SD
29. Children shouldn't be allowed to go out to play until they've eaten most of the food on their plates.	SA	A	TA	TD	D	SD
	1	2	3	4	5	6

		Strongly Agree	Agree	Tend to Agree	Tend to Disagree	Disagree	Strongly Disagree
		1	2	3	4	5	6
		SA	A	TA	TD	D	SD
30.	Exempting a child from eating foods he dislikes when he has done something very good is a rotten practice.	SA	A	TA	TD	D	SD
31.	Cooking is an important way that a mother shows concern for her children.	SA	A	TA	TD	D	SD
32.	Only a rotten mother would serve a child's least favorite food because he was naughty.	SA	A	TA	TD	D	SD
33.	It is all right in some cases to tell a child he can't have dessert because he misbehaved.	SA	A	TA	TD	D	SD
34.	A loving mother will make her child's favorite dish when the child returns from a long stay away from home (camp, etc.).	SA	A	TA	TD	D	SD
35.	When children are upset, its no time to think of giving them food.	SA	A	TA	TD	D	SD
36.	It is wrong to make children eat something they don't like because they misbehaved.	SA	A	TA	TD	D	SD
37.	Just because a school child is under pressure, it's no excuse for eating extra sweets.	SA	A	TA	TD	D	SD
38.	An excellent means for consoling a disappointed teenager is to make a favorite dish.	SA	A	TA	TD	D	SD
39.	A mother should let the child request his favorite meal when he has won an outstanding honor.	SA	A	TA	TD	D	SD
40.	A wise mother won't give a child a cookie to stop him from crying.	SA	A	TA	TD	D	SD
41.	A sweet food won't harm a child if its given for doing something very well.	SA	A	TA	TD	D	SD
42.	Children should have dessert only after everything on the plate has been eaten.	SA	A	TA	TD	D	SD
43.	When school children are studying for tests, they should be allowed to snack more than usual.	SA	A	TA	TD	D	SD
		1	2	3	4	5	6

	Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
	SA	A	TA	TD	D	SD
44. Giving a snack to children because they are playing quietly is a poor practice.	SA	A	TA	TD	D	SD
45. A women who loves her family spends a lot of time cooking dishes her family likes.	SA	A	TA	TD	D	SD
46. Withholding dessert because a child did something the mother disapproves of, serves no purpose.	SA	A	TA	TD	D	SD
47. Cooking for the family really has nothing to do with the way a mother feels about her children.	SA	A	TA	TD	D	SD
48. Every mother should make a child's favorite dish occasionally, just to show the child she cares about him.	SA	A	TA	TD	D	SD
49. Serving a child a different food from the rest of the family because of undesirable behavior is foolish.	SA	A	TA	TD	D	SD
50. Dessert should be part of the meal and not withheld, even if vegetables aren't eaten.	SA	A	TA	TD	D	SD
51. If a child drinks all his milk, a sweet food is a good thing to give to get him to drink it next time.	SA	A	TA	TD	D	SD
52. Right from the first, children should learn they can't be fed everytime they cry.	SA	A	TA	TD	D	SD
53. When a child refuses to clean his plate, he should be given the same plate of left over food at the next meal.	SA	A	TA	TD	D	SD
54. A mother who loves her child will give him all he wants to eat.	SA	A	TA	TD	D	SD
55. It is silly to try to use food to show children that they are loved.	SA	A	TA	TD	D	SD
56. Sweet, rich foods are no more likely to show someone you care, than are fruits and vegetables.	SA	A	TA	TD	D	SD
	1	2	3	4	5	6

	Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
	SA	A	TA	TD	D	SD
57. It's not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	SA	A	TA	TD	D	SD
58. It is silly to say that "the way to a person's heart is through the stomach."	SA	A	TA	TD	D	SD
59. Food has little to do with good mother-child relationships.	SA	A	TA	TD	D	SD
60. Dessert is a part of the meal, not something children should have to work for.	SA	A	TA	TD	D	SD

Personal Information

Directions: Circle the best answer and record on IBM sheet.

61. What is your major?

1. Clothing, Textiles, & Related Arts
2. Human Nutrition & Foods
3. Management, Housing & Family Development
4. General Home Economics
5. Arts and Sciences
6. Education
7. Psychology
8. Sociology
9. Other (Please Specify) _____

62. Indicate your age. I have had my:

1. 19th but not my 20th birthday.
2. 20th but not my 21st birthday.
3. 21st but not my 22nd birthday.
4. 22nd but not my 23rd birthday.
5. 23rd but not my 24th birthday.
6. less than 19 years
7. more than 24 years

63. What was your position in the family in relation to your brothers and sisters?

1. only child
2. first child
3. second child
4. third child
5. fourth child
6. fifth child
7. later than fifth child

How often do

64. You tend to eat more when studying for tests or exams? (circle one)

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always

65. When studying for exams or tests, how much do you eat? (circle one)

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

How often do

66. You tend to eat more when preparing a term paper or major course project? (circle one)

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always

67. When preparing a term paper or major course project, how much do you eat? (circle one)

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

68. How often do you tend to eat more if you've had a personal conflict with someone important to you? (circle one)

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always

69. How much do you eat if you've had a personal conflict with someone important to you? (circle one)

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

APPENDIX B

MATERIALS FOR JUDGES OF CONTENT VALIDITY

COLLEGE OF HOME ECONOMICS

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DEPARTMENT OF MANAGEMENT, HOUSING AND FAMILY DEVELOPMENT (703) 951-6163

April 13, 1977

To: Certain Nutrition and Child Development Professionals

Because of your expertise in nutrition and/or child development, I would like to solicit the generous gift of your time.

I am in the process of developing an instrument to assess certain attitudes toward child-feeding. This instrument is to be used very soon in a research study. The project is aimed at assessing the relationship between these child-feeding attitudes and college students' tendency to overeat when highly anxious.

The specific areas to be assessed include attitudes on the use of food as:

a. a reward
b. a punishment
c. a soothing agent
d. an expression of affection

I need your assistance in evaluating the content validity of this Likert-Type instrument. Would you kindly react to the statements on the enclosed scale so that I may determine whether I am measuring the concept that is intended.

May I have your judgments before the end of this week? I will have someone pick up your evaluation or you may return it directly to me at 128 Wallace Hall.

Thank you for your generous assistance.

Sincerely yours,

Cosby S. Rogers

Cosby S. Rogers, Instructor
Dept. of Management, Housing
and Family Development

Enclosure

CSR/jv

Instructions: The final instrument will be a Likert-Type in which subjects will be asked to respond indicating their degree of agreement or disagreement with the statements. In the final form items will be randomly ordered and the subscale areas will not be listed.

I am not interested in your agreement or disagreement with statements, but rather with whether you think the statements are appropriate measures for each subscale.

The attitude statements are in sections according to the content area being assessed. Would you please indicate whether you believe each question measures that concept by circling letters according to this code:

VC	Very Close
C	Close
SC	Somewhat Close
NC	Not Close

Subscale 1

Use Of Food As A Reward

Positive Statements:	Very Close	Close	Somewhat Close	Not Close
1. Children should have dessert only after everything on the plate has been eaten.	VC	C	SC	NC
2. A good way to get a child to finish a chore is to promise a snack when he's finished.	VC	C	SC	NC
3. A mother should let the child request his favorite meal when he has won an outstanding honor.	VC	C	SC	NC
4. An excellent way to recognize a child's special accomplishment is to take him out to eat.	VC	C	SC	NC
5. If a child drinks all his milk, a sweet food is a good reward.	VC	C	SC	NC
6. A sweet food won't harm a child if its given for doing something very well.	VC	C	SC	NC
7. If a child drinks all his milk, a sweet food is a good thing to give to get him to drink it next time.	VC	C	SC	NC
Negative Statements:				
1. Mothers who know what they're doing don't use dessert as a bribe to get children to eat.	VC	C	SC	NC
2. It's unforgivable to require children to eat vegetables before dessert is given.	VC	C	SC	NC
3. It is a bad practice to honor school children's grades by making their favorite foods.	VC	C	SC	NC
4. It is disgusting to see mothers use desserts, crackers, and cookies to get children to do something.	VC	C	SC	NC
5. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	VC	C	SC	NC
6. Giving a snack to children because they are playing quietly is a poor practice.	VC	C	SC	NC
7. Exempting a child from eating foods he dislikes when he has done something very good, is a rotten practice.	VC	C	SC	NC

Subscale 2

Use Of Food As A Punishment

	Very Close	Close	Somewhat Close	Not Close
Positive Statements:				
1. Children who misbehave at the table should not be allowed to finish the meal.	VC	C	SC	NC
2. It is all right in some cases to tell a child he can't have dessert because he misbehaved.	VC	C	SC	NC
3. A child who misbehaves badly can be made to go to bed without dinner, as long as its not too often.	VC	C	SC	NC
4. A wise mother sometimes should withhold a child's favorite food if he has been bad.	VC	C	SC	NC
5. A child who refuses to eat what he has been given should be made to eat that much more of it.	VC	C	SC	NC
6. Children shouldn't be allowed to go out to play until they've eaten most of the food on their plates.	VC	C	SC	NC
7. It's not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	VC	C	SC	NC
8. When a child refuses to clean his plate, he should be given the same plate of left-over food at the next meal.	VC	C	SC	NC
Negative Statements:				
1. Children should never be denied food because they have misbehaved.	VC	C	SC	NC
2. It is wrong to make children eat something they don't like because they misbehaved.	VC	C	SC	NC
3. Dessert should be part of the meal and not withheld, even if vegetables aren't eaten.	VC	C	SC	NC
4. It is useless to think of forcing a child to eat a food he doesn't like, just because he was bad.	VC	C	SC	NC
5. Withholding dessert because a child did something the mother disapproves of serves no purpose.	VC	C	SC	NC

6. Only a rotten mother would serve a child's least favorite food because he was naughty.	VC	C	SC	NC
7. Serving a child a different food from the rest of the family because of undesirable behavior is foolish.	VC	C	SC	NC
8. Dessert is a part of the meal, not something children should have to work for.	VC	C	SC	NC

Subscale 3

Use Of Food As A Soothing Agent

Positive Statements:	Very Close	Close	Somewhat Close	Not Close
1. The best way to get a baby to stop crying is to feed him.	VC	C	SC	NC
2. Its only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	VC	C	SC	NC
3. Good mothers know that when children feel sad and "blue," a favorite food will make them feel better.	VC	C	SC	NC
4. An excellent means for consoling a disappointed teenager is to make a favorite dish.	VC	C	SC	NC
5. When someone in a family dies, gifts of food help one feel better.	VC	C	SC	NC
6. When school children are studying for tests, they should be allowed to snack more than usual.	VC	C	SC	NC
7. A snack is a good thing to give a child who takes a hard fall or bump, so he'll feel better.	VC	C	SC	NC
Negative Statements:				
1. Right from the first, children should learn they can't get fed everytime they cry.	VC	C	SC	NC
2. A wise mother won't give a child a cookie to stop him from crying.	VC	C	SC	NC
3. Giving a hurt or disappointed child a cookie or cracker serves no purpose.	VC	C	SC	NC
4. When children are upset, its no time to think of giving them food.	VC	C	SC	NC
5. When a family has just moved, making the childrens' favorite foods makes them feel more at home.	VC	C	SC	NC
6. Just because a school child is under pressure, it's no excuse for eating extra sweets.	VC	C	SC	NC
7. When a child is hurt or upset, its better to hold him or talk to him than to offer a cracker.	VC	C	SC	NC

Subscale 4

Use Of Food To Express Affection

Positive Statements:	Very Close	Close	Somewhat Close	Not Close
1. A mother who loves her children never keeps food from them.	VC	C	SC	NC
2. It is sometimes easier to make a favorite dish to show someone you care than to just tell them so.	VC	C	SC	NC
3. A women who loves her family spends a lot of time cooking dishes her family likes.	VC	C	SC	NC
4. When a child rejects the food his mother cooked for him, it is as though he has rejected her love.	VC	C	SC	NC
5. Cooking is an important way that a mother shows concern for her children.	VC	C	SC	NC
6. Every mother should make a child's favorite dish occasionally, just to show the child she cares about him.	VC	C	SC	NC
7. A mother who loves her children will give him all he wants to eat.	VC	C	SC	NC
8. A loving mother will make her child's favorite dish when the child returns from a long stay away from home (camp, etc.)	VC	C	SC	NC
Negative Statements:				
1. It is silly to say that "the way to a person's heart is through the stomach."	VC	C	SC	NC
2. Too much focus on food can spoil a good mother-child relationship.	VC	C	SC	NC
3. Food has little to do with good mother-child relationships.	VC	C	SC	NC
4. Sweet, rich foods are no more likely to show someone you care, than are fruits and vegetables.	VC	C	SC	NC
5. It is silly to try to use food to show children that they are loved.	VC	C	SC	NC
6. Cooking for the family really has nothing to do with the way a mother feels about her children.	VC	C	SC	NC

7. It is better for a mother to hug and caress her children than to give them gifts of food.	VC	C	SC	NC
8. When a child refuses to eat something his mother made especially for him, it doesn't mean he doesn't accept her love.	VC	C	SC	NC

Judges' Ratings of Child-Feeding

Opinion Questionnaire Items

Table 18

Judges' Ratings of Child-Feeding Opinion Questionnaire Items

	Rating Categories										
	Omit		Very Close		Close		Somewhat Close		Not Close		
Subscale 1: Use of Food As A Reward											
	N	%	N	%	N	%	N	%	N	%	Mean
1. Children should have dessert only after everything on the plate has been eaten.	0	00	14	64	5	23	3	14	0	00	3.50
2. A good way to get a child to finish a chore is to promise a snack when he's finished.	0	00	17	77	5	23	0	00	0	00	3.77
3. A mother should let the child request his favorite meal when he has won an outstanding honor.	0	00	18	82	4	18	0	00	0	00	3.82
4. An excellent way to recognize a child's special accomplishment is to take him out to eat.	0	00	15	68	6	27	1	05	0	00	3.64
5. If a child drinks all his milk, a sweet food is a good reward.	0	00	16	73	5	23	1	05	0	00	3.68
6. A sweet food won't harm a child if its given for doing something very well.	1	05	10	45	4	18	6	27	1	05	3.10
7. If a child drinks all his milk, a sweet food is a good thing to give him to drink it next time.	0	00	9	41	9	41	3	14	1	05	3.18
8. Mothers who know what they're doing don't use dessert as a bribe to get children to eat.	0	00	14	64	5	23	3	14	0	00	3.50
9. It's unforgivable to require children to eat vegetables before dessert is given.	0	00	10	45	8	36	4	18	0	00	3.27
10. It is a bad practice to honor school children's grades by making their favorite foods.	0	00	17	77	5	23	0	00	0	00	3.77
11. It is disgusting to see mothers use desserts, crackers, and cookies to get children to do something.	0	00	19	86	3	14	0	00	0	00	3.86
12. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	1	05	11	50	9	41	1	05	0	00	3.48
13. Giving a snack to children because they are playing quietly is a poor practice.	0	00	15	68	4	18	3	14	0	00	3.55

Table 18 (Continued)

	Rating Categories										
	Omit		Very Close		Close		Somewhat Close		Not Close		
Subscale 1: Use of Food As A Reward (Continued)											
	N	%	N	%	N	%	N	%	N	%	Mean
14. Exempting a child from eating foods he dislikes when he has done something very good, is a rotten practice.	0	00	14	64	6	27	2	09	0	00	3.55
Subscale 2: Use of Food As A Punishment											
15. Children who misbehave at the table should not be allowed to finish the meal.	0	00	15	68	4	18	3	14	0	00	3.55
16. It is all right in some cases to tell a child he can't have dessert because he misbehaved.	0	00	17	77	3	14	2	09	0	00	3.68
17. A child who misbehaves badly can be made to go to bed without dinner, as long as its not too often.	0	00	18	82	3	14	1	05	0	00	3.77
18. A wise mother sometimes should withhold a child's favorite food if he has been bad.	0	00	18	32	3	14	1	05	0	00	3.77
19. A child who refuses to eat what he had been given should be made to eat that much more of it.	1	05	13	59	5	23	2	09	1	05	3.43
20. Children shouldn't be allowed to go out to play until they've eaten most of the food on their plates.	0	00	14	64	4	18	2	09	2	09	3.36
21. It's not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	1	05	11	50	7	32	3	14	0	00	3.38
22. When a child refuses to clean his plate, he should be given the same plate of left-over food at the next meal.	0	00	16	73	0	00	5	23	1	05	3.41
23. Children should never be denied food because they have misbehaved.	0	00	18	82	4	18	0	00	0	00	3.82
24. It is wrong to make children eat something they don't like because they misbehaved.	0	00	20	91	2	09	0	00	0	00	3.91
25. Dessert should be part of the meal and not withheld, even if vegetables aren't eaten.	1	05	10	45	9	41	2	09	0	00	3.38

Table 18 (Continued)

	Rating Categories										
	Omit		Very Close		Close		Somewhat Close		Not Close		
Subscale 2: Use of Food As A Punishment (Continued)											
	N	%	N	%	N	%	N	%	N	%	Mean
26. It is useless to think of forcing a child to eat a food he doesn't like, just because he was bad.	0	00	11	50	11	50	0	00	0	00	3.50
27. Withholding dessert because a child did something the mother disapproves of serves no purpose.	0	00	16	73	6	27	0	00	0	00	3.73
28. Only a rotten mother would serve a child's least favorite food because he was naughty.	1	05	12	55	5	23	4	18	0	00	3.38
29. Serving a child a different food from the rest of the family because of undesirable behavior is foolish.	1	05	10	45	7	32	4	18	0	00	3.29
30. Dessert is a part of the meal, not something children should have to work for.	1	05	10	45	9	41	1	05	1	05	3.33
Subscale 3: Use of Food As A Soothing Agent											
31. The best way to get a baby to stop crying is to feed him.	0	00	18	82	3	14	1	05	0	00	3.77
32. It's only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	0	00	21	95	1	05	0	00	0	00	3.95
33. Good mothers know that when children feel sad and "blue," a favorite food will make them feel better.	0	00	17	77	4	18	0	00	1	05	3.68
34. An excellent means for consoling a disappointed teenager is to make a favorite dish.	0	00	20	91	2	09	0	00	0	00	3.91
35. When someone in a family dies, gifts of food help one feel better.	0	00	12	55	4	18	3	14	3	14	3.14
36. When school children are studying for tests, they should be allowed to snack more than usual.	0	00	11	50	9	41	1	05	1	05	3.36
37. A snack is a good thing to give a child who takes a hard fall or bump, so he'll feel better.	0	00	21	95	1	05	0	00	0	00	3.95

Table 18 (Continued)

	Rating Categories										
	Omit		Very Close		Close		Somewhat Close		Not Close		
Subscale 3: Use of Food As A Soothing Agent (Continued)											
	N	%	N	%	N	%	N	%	N	%	Mean
38. Right from the first, children should learn they can't get fed everytime they cry.	0	00	17	77	5	23	0	00	0	00	3.77
39. A wise mother won't give a child a cookie to stop him from crying.	0	00	20	91	1	05	0	00	1	05	3.82
40. Giving a hurt or disappointed child a cookie or cracker serves no purpose.	1	05	16	73	4	18	1	05	0	00	3.71
41. When children are upset, its no time to think of giving them food.	0	00	11	50	9	41	0	00	2	09	3.32
42. When a family has just moved, making the childrens' favorite foods makes them feel more at home.	1	05	12	55	1	05	6	27	2	09	3.10
43. Just because a school child is under pressure, it's no excuse for eating extra sweets.	0	00	16	73	6	27	0	00	0	00	3.73
44. When a child is hurt or upset, its better to hold him or talk to him than to offer a cracker.	0	00	19	86	3	14	0	00	0	00	3.86
Subscale 4: Use of Food To Express Affection											
45. A mother who loves her children never keeps food from them.	0	00	9	41	10	45	2	09	1	05	3.23
46. It is sometimes easier to make a favorite dish to show someone you care than to just tell them so.	0	00	18	82	3	14	1	05	0	00	3.77
47. A woman who loves her family spends a lot of time cooking dishes her family likes.	0	00	18	82	1	05	3	14	0	00	3.68
48. When a child rejects the food his mother cooked for him, it is as though he has rejected her love.	0	00	11	50	7	32	3	14	1	05	3.27
49. Cooking is an important way that a mother shows concern for her children.	0	00	16	73	4	18	2	09	0	00	3.64
50. Every mother should make a child's favorite dish occasionally, just to show the child she cares about him.	0	00	18	82	4	18	0	00	0	00	3.82

Table 18 (Continued)

	Rating Categories										
	Omit		Very Close		Close		Somewhat Close		Not Close		
Subscale 4: Use of Food To Express Affection (Continued)											
	N	%	N	%	N	%	N	%	N	%	Mean
51. A mother who loves her child will give him all he wants to eat.	0	00	14	64	8	36	0	00	0	00	3.64
52. A loving mother will make her child's favorite dish when the child returns from a long stay away from home (camp, etc.).	0	00	16	73	5	23	1	05	0	00	3.68
53. It is silly to say that "the way to a person's heart is through the stomach."	0	00	16	73	6	27	0	00	0	00	3.73
54. Too much focus on food can spoil a good mother-child relationship.	0	00	9	41	10	45	3	14	0	00	3.27
55. Food has little to do with good mother-child relationships.	0	00	12	55	7	32	2	09	1	05	3.36
56. Sweet, rich foods are no more likely to show someone you care, than are fruits and vegetables.	0	00	14	64	5	23	3	14	0	00	3.50
57. It is silly to try to use food to show children that they are loved.	0	00	18	82	3	14	1	05	0	00	3.77
58. Cooking for the family really has nothing to do with the way a mother feels about her children.	0	00	15	68	6	27	1	05	0	00	3.64
59. It is better for a mother to hug and caress her children than to give them gifts of food.	0	00	21	95	1	05	0	00	0	00	3.95
60. When a child refuses to eat something his mother made especially for him, it doesn't mean he doesn't accept her love.	0	00	16	73	6	27	0	00	0	00	3.73

Note.-- Ratings were scored from four for Very Close to one for Not Close.

APPENDIX C

PILOT STUDY II MATERIALS

Directions for Daughters' Form of

Pilot Study II Questionnaire

Child-Feeding Opinion Questionnaire

Directions: Following is a list of statements of opinions about child-feeding. Since this is a survey of opinions, it is desired that you indicate your own personal opinions, regardless of whether you think other people might agree or disagree with you. There are no "right" or "wrong" answers to these statements.

Please read each statement carefully, and indicate your opinion by circling the letter(s) according to the code given below.

If you:	Circle
Strongly Agree	SA
Agree	A
Tend to Agree	TA
Tend to Disagree	TD
Disagree	D
Strongly Disagree	SD

Please do not omit any statements. If you are somewhat unsure of your opinion, please indicate your Tendency to Agree or Tendency to Disagree by marking TA or TD.

Directions for IBM Sheet:

1. After answering all opinion questions, please mark the corresponding numbers on the IBM sheets. Numbers above each column indicate the circle to blacken. They are as follows:

1	2	3	4	5	6
SA	A	TA	TD	D	SD

   Using the number two pencil provided, darken the entire circle which corresponds to your opinion. Do not mark in any circles crossed by the red line.

2. Circle the best answer for the Personal Information questions. Mark corresponding numbers on the IBM sheet.

3. Place your IBM sheet and questionnaire in the folder and give it to the person in charge.

Directions for Mothers' Form of

Pilot Study II Questionnaire

Child-Feeding Opinion Questionnaire

Directions: Following is a list of statements of opinions about child-feeding. Since this is a survey of opinions, it is desired that you indicate your own personal opinions, regardless of whether you think other people might agree or disagree with you. There are no "right" or "wrong" answers to these statements.

Please read each statement carefully, and indicate your opinion by circling the letter(s) according to the code given below.

If you:	Circle
Strongly Agree	SA
Agree	A
Tend to Agree	TA
Tend to Disagree	TD
Disagree	D
Strongly Disagree	SD

Please do not omit any statements. If you are somewhat unsure of your opinion, please indicate your Tendency to Agree or Tendency to Disagree by marking TA or TD.

Pilot Study II Attitude Form

Child-Feeding Opinions	Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
	SA	A	TA	TD	D	SD
1. It is a bad practice to honor school children's grades by making their favorite foods.	SA	A	TA	TD	D	SD
2. A snack is a good thing to give a child who takes a hard fall, so he'll feel better.	SA	A	TA	TD	D	SD
3. Mothers should not use dessert as a bribe to get children to eat.	SA	A	TA	TD	D	SD
4. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	SA	A	TA	TD	D	SD
5. The best way to get a baby to stop crying is to feed him.	SA	A	TA	TD	D	SD
6. It is not desirable to use desserts, crackers, and cookies to get children to do something.	SA	A	TA	TD	D	SD
7. It is a poor practice to require children to eat vegetables before dessert is given.	SA	A	TA	TD	D	SD
8. When a child is upset, it is better to hold him than to offer a cracker.	SA	A	TA	TD	D	SD
9. Children who misbehave at the table should not be allowed to finish the meal.	SA	A	TA	TD	D	SD
10. Children should never be denied food because they have misbehaved.	SA	A	TA	TD	D	SD
11. An excellent way to recognize a child's special accomplishment is to take him out to eat.	SA	A	TA	TD	D	SD
12. It is better for a mother to hug and caress her children than to give them gifts of food.	SA	A	TA	TD	D	SD
13. It is better to make a favorite dish to show someone you care than to just tell them so.	SA	A	TA	TD	D	SD
14. It is only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	SA	A	TA	TD	D	SD
15. A child who refuses to eat certain food served to him should be given additional servings of the food he refused.	SA	A	TA	TD	D	SD

		Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
		SA	A	TA	TD	D	SD
16.	A mother who loves her children never keeps food from them.	SA	A	TA	TD	D	SD
17.	When children feel sad and "blue," a favorite food will make them feel better.	SA	A	TA	TD	D	SD
18.	A mother should withhold a child's favorite food if he has been bad.	SA	A	TA	TD	D	SD
19.	Too much focus on food can spoil a good mother-child relationship.	SA	A	TA	TD	D	SD
20.	When a child rejects the food his mother cooked for him, it is as though he has rejected her love.	SA	A	TA	TD	D	SD
21.	A good way to get a child to finish a chore is to promise a snack when he's finished.	SA	A	TA	TD	D	SD
22.	Infrequently, it is acceptable for a child who misbehaves to be made to go to bed without dinner.	SA	A	TA	TD	D	SD
23.	If a child drinks all his milk, a sweet food is a good reward.	SA	A	TA	TD	D	SD
24.	Giving a disappointed child a cookie or cracker serves no purpose.	SA	A	TA	TD	D	SD
25.	It is useless to think of forcing a child to eat a food he doesn't like, just because he was bad.	SA	A	TA	TD	D	SD
26.	Exempting a child from eating foods he dislikes when he has done something very good is a bad practice.	SA	A	TA	TD	D	SD
27.	Cooking is an important way that a mother shows concern for her children.	SA	A	TA	TD	D	SD
28.	It is a poor practice to serve a child's least favorite food because he was naughty.	SA	A	TA	TD	D	SD
29.	It is all right to tell a child he can't have dessert because he misbehaved.	SA	A	TA	TD	D	SD
30.	A loving mother will make her child's favorite dish when the child returns from a long stay away from home (camp, etc.).	SA	A	TA	TD	D	SD

		Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
		SA	A	TA	TD	D	SD
31.	It is wrong to make children eat something they dislike because they misbehaved.	SA	A	TA	TD	D	SD
32.	Just because a school child is under pressure, it is no excuse for eating extra sweets.	SA	A	TA	TD	D	SD
33.	An excellent means for consoling a disappointed teenager is to make a favorite dish.	SA	A	TA	TD	D	SD
34.	A mother should let the child request his favorite meal when he has won an outstanding honor.	SA	A	TA	TD	D	SD
35.	A mother should not give a child a cookie to stop him from crying.	SA	A	TA	TD	D	SD
36.	A sweet food won't harm a child if it is given for doing something very well.	SA	A	TA	TD	D	SD
37.	Children should have dessert only after everything on the plate has been eaten.	SA	A	TA	TD	D	SD
38.	When school children are studying for tests, they should be allowed to snack more than usual.	SA	A	TA	TD	D	SD
39.	Promising a snack to children to get them to play quietly is an unacceptable practice.	SA	A	TA	TD	D	SD
40.	A woman who loves her family spends a lot of time cooking dishes her family likes.	SA	A	TA	TD	D	SD
41.	Withholding dessert because a child did something the mother disapproves of serves no purpose.	SA	A	TA	TD	D	SD
42.	Cooking for the family really has nothing to do with the way a mother feels about her children.	SA	A	TA	TD	D	SD
43.	A good way for a mother to show she loves her child is to make his favorite dish.	SA	A	TA	TD	D	SD
44.	A child should be served food different from the rest of the family when he has behaved in an undesirable manner.	SA	A	TA	TD	D	SD
45.	Dessert should not be withheld, even if vegetables aren't always eaten.	SA	A	TA	TD	D	SD

	Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
	SA	A	TA	TD	D	SD
46. If a child drinks all his milk, a sweet food is a good thing to give to get him to drink it next time.	SA	A	TA	TD	D	SD
47. Right from the first, children should learn they can't be fed everytime they cry.	SA	A	TA	TD	D	SD
48. When a child refuses to clean his plate, he should be given the same plate of left-over food at the next meal.	SA	A	TA	TD	D	SD
49. A mother who loves her child will give him all he wants to eat.	SA	A	TA	TD	D	SD
50. It is silly to use food to show children that they are loved.	SA	A	TA	TD	D	SD
51. Sweet, rich foods are no more likely to show someone you care, than are fruits and vegetables.	SA	A	TA	TD	D	SD
52. It is not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	SA	A	TA	TD	D	SD
53. It is silly to say that "the way to a person's heart is through the stomach."	SA	A	TA	TD	D	SD
54. Food has little to do with good mother-child relationships.	SA	A	TA	TD	D	SD
55. Dessert is considered to be part of the total meal.	SA	A	TA	TD	D	SD

Daughters' Pilot Study II Personal Information Form

Personal Information

Directions: Circle the best answer and record on IBM sheet.

56. What is your major?

1. Clothing, Textiles & Related Arts
2. Human Nutrition & Foods
3. Management, Housing & Family Development
4. General Home Economics
5. Education
6. Psychology
7. Sociology
8. Other (Please Specify) _____

57. Indicate your age. I have had my:

1. 19th but not my 20th birthday.
2. 20th but not my 21st birthday.
3. 21st but not my 22nd birthday.
4. 22nd but not my 23rd birthday.
5. 23rd but not my 24th birthday.
6. less than 19 years.
7. more than 24 years.

58. What was your position in the family in relation to your brothers and sisters?

1. only child
2. first child
3. second child
4. third child
5. fourth child
6. fifth child
7. later than fifth child

59. How often do you tend to eat more when studying for tests or exams?

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always
7. always

60. When studying for exams or tests, how much do you eat?

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

61. How often do you tend to eat more when preparing a term paper or major course project?

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always
7. always

62. When preparing a term paper or major course project, how much do you eat?

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

63. How often do you tend to eat more if you've had a personal conflict with someone important to you?

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always
7. always

64. How much do you eat if you've had a personal conflict with someone important to you?

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

Mothers' Pilot Study II Background Information Form

Background Information

Please answer questions 1 through 7 as they pertain to your daughter who is a Home Economics student at VPI & SU.

1. At birth, how much did your daughter weigh? _____lbs. & _____ozs.

2. At birth, what was your daughter's length? _____inches

3. At what age did you begin to feed her from the bottle?

_____less than 1 month
_____1 to 1.9 months
_____2 to 2.9 months
_____3 to 3.9 months
_____4 to 4.9 months
_____5 to 5.9 months
_____6 to 6.9 months
_____7 to 7.9 months
_____more than 8 months

4. As an infant, when did you feed your daughter?

_____on a set schedule
_____on a flexible schedule
_____on demand
_____combination of set & flexible
_____combination of flexible & demand

5. Could you usually tell by her cry whether or not she was really hungry?

_____yes _____no

6. During infancy were there any feeding problems with this daughter?
_____yes _____no
If yes, what were the problems (allergies, rejection of foods, etc.)?
At what age did these problems occur?

Problem	Age

7. What were the first solid foods introduced to her and at what age were they introduced?

Solid Food	Age

Percentages and Mean Responses to Items on

Pilot Study II Child-Feeding

Opinion Questionniare

Table 19

Percentages and Mean Response to Items on Pilot Study 11 Child-Feeding Opinion Questionnaire

	Item	Direction	Mothers							Daughters						
			SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$
1.	It is a bad practice to honor school children's grades by making their favorite foods.	-	3	24	9	24	33	6	3.21	3	5	8	34	47	3	2.74
2.	A snack is a good thing to give a child who takes a hard fall, so he'll feel better.	+	0	9	12	12	45	21	4.58	0	8	21	32	26	13	4.16
3.	Mothers should not use dessert as a bribe to get children to eat.	-	12	52	9	9	18	0	4.30	21	37	18	18	3	3	4.47
4.	It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	-	6	36	9	18	21	9	3.61	0	37	18	11	26	8	3.50
5.	The best way to get a baby to stop crying is to feed him.	+	6	6	3	9	48	27	4.70	0	3	13	16	39	29	4.79
6.	It is not desirable to use desserts, crackers, and cookies to get children to do something.	-	27	52	3	6	9	3	4.73	26	47	18	3	5	0	4.87
7.	It is a poor practice to require children to eat vegetables before dessert is given.	-	9	18	6	12	48	6	3.09	3	0	21	13	42	21	2.45
8.	When a child is upset, it is better to hold him than to offer a cracker.	-	42	55	3	0	0	0	5.39	61	29	8	3	0	0	5.47
9.	Children who misbehave at the table should not be allowed to finish the meal.	+	9	6	12	15	39	18	4.24	0	0	8	26	37	29	4.87
10.	Children should never be denied food because they have misbehaved.	-	33	42	6	12	3	3	4.82	45	37	5	13	0	0	5.13
11.	An excellent way to recognize a child's special accomplishment is to take him out to eat.	+	12	30	27	9	15	6	3.03	0	18	34	34	11	3	3.45

Table 19 (Continued)

Percentages and Mean Response to Items on Pilot Study II Child-Feeding Opinion Questionnaire

	Item	Direction	Mothers							Daughters						
			SA	A	TA	TD	D	SD	X	SA	A	TA	TD	D	SD	X
12.	It is better for a mother to hug and caress her children than to give them gifts of food.	-	42	45	9	3	0	0	5.27	37	45	13	5	0	0	5.13
13.	It is better to make a favorite dish to show someone you care than to just tell them so.	+	3	15	6	15	58	3	4.18	0	8	8	34	37	13	4.39
14.	It is only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	+	9	24	27	3	33	3	3.36	0	16	21	29	29	5	3.87
15.	A child who refuses to eat certain foods served to him should be given additional servings of the food he refused.	+	3	0	0	3	27	67	5.52	0	0	0	3	7	28	5.66
16.	A mother who loves her children never keeps food from them.	+	9	9	9	9	45	18	4.27	0	8	11	34	26	21	4.42
17.	When children feel sad and "blue," a favorite food will make them feel better.	+	3	18	33	9	36	0	3.58	0	13	29	37	18	3	3.68
18.	A mother should withhold a child's favorite food if he has been bad.	+	0	6	12	15	45	21	4.64	0	3	8	34	47	8	4.50
19.	Too much focus on food can spoil a good mother-child relationship.	-	9	48	12	6	15	9	4.03	18	29	45	5	0	3	4.53
20.	When a child rejects the food his mother cooked for him, it is as though he has rejected her love.	+	0	0	0	6	48	45	5.39	0	3	0	11	39	47	5.29
21.	A good way to get a child to finish a chore is to promise a snack when he's finished.	+	0	15	18	12	36	18	4.24	0	5	29	26	34	5	4.05
22.	Infrequently, it is acceptable for a child who misbehaves to be made to go to bed without dinner.	+	3	6	12	15	30	33	4.64	0	5	8	18	29	39	4.89

Table 19 (Continued)

Percentages and Mean Response to Items on Pilot Study II Child-Feeding Opinion Questionnaire

Item	Direction	Mothers							Daughters						
		SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$
23. If a child drinks all his milk, a sweet food is a good reward.	+	0	3	15	6	39	36	4.91	0	0	8	32	39	21	4.74
24. Giving a disappointed child a cookie or cracker serves no purpose.	-	9	30	9	30	18	3	3.73	0	21	16	42	21	0	3.37
25. It is useless to think of forcing a child to eat a food he doesn't like, just because he was bad.	-	39	48	3	0	0	6	5.13	39	42	13	5	0	0	5.16
26. Exempting a child from eating foods he dislikes when he has done something very good is a bad practice.	-	15	39	21	12	6	6	4.27	18	53	18	3	8	0	4.71
27. Cooking is an important way that a mother shows concern for her children.	+	24	39	18	12	0	6	2.42	8	29	42	16	5	0	2.82
28. It is a poor practice to serve a child's least favorite food because he was naughty.	-	42	45	3	0	3	6	5.06	21	79	0	0	0	0	5.21
29. It is all right to tell a child he can't have dessert because he misbehaved.	+	9	21	27	12	21	9	3.42	0	24	24	21	26	5	3.66
30. A loving mother will make her child's favorite dish when the child returns from a long stay away from home (camp, etc.).	+	27	55	12	3	3	0	2.00	13	29	47	5	5	0	2.61
31. It is wrong to make children eat something they dislike because they misbehaved.	-	45	42	3	0	3	6	5.09	37	61	3	0	0	0	5.34
32. Just because a school child is under pressure, it is no excuse for eating extra sweets.	-	36	36	12	12	3	0	4.91	8	61	18	13	0	0	4.63
33. An excellent means for consoling a disappointed teenager is to make a favorite dish.	+	6	27	27	15	24	0	3.24	3	5	18	42	24	8	4.03

Table 19 (Continued)

Percentages and Mean Response to Items on Pilot Study II Child-Feeding Opinion Questionnaire

Item	Direction	Mothers							Daughters						
		SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$
34. A mother should let the child request his favorite meal when he has won an outstanding honor.	+	12	55	24	0	6	0	2.31	8	32	53	5	3	0	2.63
35. A mother should not give a child a cookie to stop him from crying.	-	9	42	15	24	6	3	4.15	11	42	26	16	5	0	4.37
36. A sweet food won't harm a child if it is given for doing something very well.	+	0	21	36	9	21	12	3.67	0	0	37	39	13	11	3.97
37. Children should have dessert only after everything on the plate has been eaten.	+	3	21	18	15	33	6	3.75	5	13	16	24	39	3	3.87
38. When school children are studying for tests, they should be allowed to snack more than usual.	+	6	24	21	21	21	6	3.45	0	11	8	42	32	8	4.18
39. Promising a snack to children to get them to play quietly is an unacceptable practice.	-	12	45	12	21	9	0	4.30	18	45	18	8	11	0	4.53
40. A woman who loves her family spends a lot of time cooking dishes her family likes.	+	9	36	30	9	9	6	2.91	0	18	34	26	18	3	3.53
41. Withholding dessert because a child did something the mother disapproves of serves no purpose.	-	9	45	15	21	9	0	4.24	13	34	24	24	5	0	4.26
42. Cooking for the family really has nothing to do with the way a mother feels about her children.	-	9	12	6	21	39	12	2.94	3	13	13	34	32	5	3.05
43. A good way for a mother to show she loves her child is to make his favorite dish.	+	6	30	36	12	15	0	3.00	3	13	34	39	8	3	3.45
44. A child should be served food different from the rest of the family when he has behaved in an undesirable manner.	+	0	0	0	9	30	61	5.52	0	0	0	5	45	50	5.45

Table 19 (Continued)

Percentages and Mean Response to Items on Pilot Study II Child-Feeding Opinion Questionnaire

Item	Direction	Mothers							Daughters						
		SA	A	TA	TD	D	SD	$\bar{X}$	SA	A	TA	TD	D	SD	$\bar{X}$
45. Dessert should not be withheld, even if vegetables aren't always eaten.	-	3	42	21	18	15	1.5	4.00	0	34	37	11	18	0	3.87
46. If a child drinks all his milk, a sweet food is a good thing to give him to get him to drink it next time.	+	0	0	6	21	39	33	5.00	0	0	3	26	63	8	4.76
47. Right from the first, children should learn they can't be fed everytime they cry.	-	24	52	15	3	0	3	4.91	13	34	24	16	8	5	4.13
48. When a child refuses to clean his plate, he should be given the same plate of left-over food at the next meal.	+	0	3	0	12	18	67	5.45	0	3	3	11	42	42	5.18
49. A mother who loves her child will give him all he wants to eat.	+	3	0	3	15	39	39	5.06	0	0	13	16	58	24	5.03
50. It is silly to use food to show children that they are loved.	-	24	30	9	12	21	3	4.15	3	32	21	39	3	3	3.84
51. Sweet, rich foods are no more likely to show someone you care, than are fruits and vegetables.	-	18	39	9	6	15	9	4.13	13	45	24	5	11	3	4.37
52. It is not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	+	0	0	12	21	39	27	4.82	0	5	0	29	50	16	4.71
53. It is silly to say that "the way to a person's heart is through the stomach."	-	12	42	21	15	6	3	2.70	5	26	21	32	16	0	3.26
54. Food has little to do with good mother-child relationships.	-	12	33	15	15	21	3	3.09	3	8	16	50	18	5	3.89
55. Dessert is considered to be part of the total meal.	-	12	45	15	15	9	3	2.73	6	47	5	18	13	0	2.66

Note.-- Means were computed from scores which ranged from one for Strongly Agree to six for Strongly Disagree on positively stated items. Scoring was reversed for negatively stated items.

APPENDIX D

MATERIALS FOR FINAL CHILD - FEEDING OPINION STUDY

Attitude Statements for Child-Feeding Opinion Questionnaire

Following item analysis, and evaluation of responses to the Pilot Study II Child-Feeding Opinion Questionnaire, thirty attitude items were selected for inclusion in the final instrument.

Subscale One: Use of Food as a Reward	Direction	Random Number
1. A good way to get a child to finish a chore is to promise a snack when he's finished.	+	7
2. Children should have dessert only after everything on the plate has been eaten.	+	10
3. An excellent way to recognize a child's special accomplishment is to take him out to eat.	+	11
4. It is a bad practice to honor school children's grades by making their favorite foods.	-	4
5. It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	-	19
6. Mothers should not use dessert as a bribe to get children to eat.	-	21
7. Promising a snack to children to get them to play quietly is an unacceptable practice.	-	24
Subscale 2: Use of Food as a Punishment		
1. A mother should withhold a child's favorite food if he has been bad.	-	1
2. Infrequently, it is acceptable for a child who misbehaves to be made to go to bed without dinner.	+	3

	Direction	Random Number
3. It is all right to tell a child he can't have dessert because he misbehaved.	+	6
4. It is not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	+	27
5. Dessert is considered to be part of the total meal.	-	8
6. Dessert should not be withheld, even if vegetables aren't always eaten.	-	13
7. Withholding dessert because a child did something the mother disapproves of serves no purpose.	-	18
Subscale 3: Use of Food as a Soothing Agent		
1. It is only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	+	9
2. When children feel sad and "blue," a favorite food will make them feel better.	+	14
3. An excellent means for consoling a disappointed teenager is to make a favorite dish.	+	15
4. When school children are studying for tests, they should be allowed to snack more than usual.	+	22
5. A snack is a good thing to give a child who takes a hard fall, so he'll feel better.	+	30
6. A mother should not give a child a cookie to stop him from crying.	-	2
7. Right from the first, children should learn they can't be fed each time they cry.	-	16

	Direction	Random Number
3. Just because a school child is under pressure, it is no excuse for eating extra sweets.	-	25
9. Giving a disappointed child a cookie or cracker serves no purpose.	-	26
Subscale 4: Use of Food to Express Affection		
1. A woman who loves her family spends a lot of time cooking dishes her family likes.	+	5
2. It is better to make a favorite dish to show someone you care than to just tell them so.	+	17
3. A good way for a mother to show she loves her child is to make his favorite dish.	+	20
4. A mother who loves her children never keeps food from them.	+	23
5. Food has little to do with good mother-child relationships.	-	12
6. It is silly to use food to show children that they are loved.	-	28
7. It is silly to say that "the way to a person's heart is through the stomach."	-	29

Directions for Daughters' Form of Final CFOQ

Child-Feeding Opinion Questionnaire

Directions: Following is a list of statements of opinions about child-feeding. Since this is a survey of opinions, it is desired that you indicate your own personal opinions, regardless of whether you think other people might agree or disagree with you. There are no "right" or "wrong" answers to these statements.

Please read each statement carefully, and indicate your opinion by circling the letter(s) according to the code given below.

If you:	Circle:
Strongly Agree	SA
Agree	A
Tend to Agree	TA
Tend to Disagree	TD
Disagree	D
Strongly Disagree	SD

Please do not omit any statements. If you are somewhat unsure of your opinion, please indicate your Tendency to Agree or Tendency to Disagree by marking TA or TD.

Directions for IBM Sheet:

1. After answering all opinion questions, please mark the corresponding numbers on the IBM sheets. Numbers above each column indicate the circle to blacken. They are as follows:

1	2	3	4	5	6
SA	A	TA	TD	D	SD

   Using the number two pencil provided, darken the entire circle which corresponds to your opinion. Do not mark in any circles crossed by the red line.

2. Circle the best answer for the Personal Information questions. Mark corresponding numbers on the IBM sheet.

3. Place your IBM sheet and questionnaire in the folder and go to Room 211 where anthropometric measures will be taken.

Cover Letter to Students' Mothers

COLLEGE OF HOME ECONOMICS

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DEPARTMENT OF MANAGEMENT, HOUSING AND FAMILY DEVELOPMENT (703) 951-6163

May, 1977

Dear Mrs.

Your daughter has generously contributed her time to assist in a study underway at Virginia Polytechnic Institute and State University. The study is being conducted to help assess various opinions related to child-feeding.

Only the students for whom we have completed both mother and daughter sections of the study can be included in the final project. Therefore, in order that your daughter's work can be included, we need your assistance. Would you please help us by completing the enclosed questionnaire?

Would you please return the questionnaire within seven days? A stamped self-addressed envelope has been enclosed for your convenience.

Your identity will remain unknown (except for matching with your daughter's code number) but some information is needed for grouping the data in various ways. Therefore, it will be necessary for you to fill in and check all blanks that apply to you on the back of the answer sheet.

Thank you for your cooperation and for the generous gift of your time.

Sincerely yours,

Cosby S. Rogers

Cosby S. Rogers
Instructor, Dept. of MHFD

Jane Wentworth

Jane Wentworth
Assistant Professor, Dept. of MHF

CSR/jv

Enclosures

Directions for Mothers' Form of Final CFOQ

Child-Feeding Opinion Questionnaire

Directions: Following is a list of statements of opinions about child-feeding. Since this is a survey of opinions, it is desired that you indicate your own personal opinions, regardless of whether you think other people might agree or disagree with you. There are no "right" or "wrong" answers to these statements.

Please read each statement carefully, and indicate your opinion by circling the letter(s) according to the code given below.

If you:	Circle
Strongly Agree	SA
Agree	A
Tend to Agree	TA
Tend to Disagree	TD
Disagree	D
Strongly Disagree	SD

Please do not omit any statements. If you are somewhat unsure of your opinion, please indicate your Tendency to Agree or Tendency to Disagree by marking TA or TD.

Final Form of CFOQ Statements

Child-Feeding Opinions	Strongly Agree 1	Agree 2	Tend to Agree 3	Tend to Disagree 4	Disagree 5	Strongly Disagree 6
1. A mother should withhold a child's favorite food if he has been bad.	SA	A	TA	TD	D	SD
2. A mother should not give a child a cookie to stop him from crying.	SA	A	TA	TD	D	SD
3. Infrequently, it is acceptable for a child who misbehaves to be made to go to bed without dinner.	SA	A	TA	TD	D	SD
4. It is a bad practice to honor school children's grades by making their favorite foods.	SA	A	TA	TD	D	SD
5. A woman who loves her family spends a lot of time cooking dishes her family likes.	SA	A	TA	TD	D	SD
6. It is all right to tell a child he can't have dessert because he misbehaved.	SA	A	TA	TD	D	SD
7. A good way to get a child to finish a chore is to promise a snack when he's finished.	SA	A	TA	TD	D	SD
8. Dessert is considered to be part of the total meal.	SA	A	TA	TD	D	SD
9. It is only natural to give a child a cookie or similar food to make him feel better when he's been hurt.	SA	A	TA	TD	D	SD
10. Children should have dessert only after everything on the plate has been eaten.	SA	A	TA	TD	D	SD
11. An excellent way to recognize a child's special accomplishment is to take him out to eat.	SA	A	TA	TD	D	SD
12. Food has little to do with good mother-child relationships.	SA	A	TA	TD	D	SD
13. Dessert should not be withheld, even if vegetables aren't always eaten.	SA	A	TA	TD	D	SD
14. When children feel sad and "blue," a favorite food will make them feel better.	SA	A	TA	TD	D	SD
15. An excellent means for consoling a disappointed teenager is to make a favorite dish.	SA	A	TA	TD	D	SD

		Strongly Agree	Agree	Tend to Agree	Tend to Disagree	Disagree	Strongly Disagree
		1	2	3	4	5	6
16.	Right from the first, children should learn they can't be fed each time they cry.	SA	A	TA	TD	D	SD
17.	It is better to make a favorite dish to show someone you care than to just tell them so.	SA	A	TA	TD	D	SD
18.	Withholding dessert because a child did something the mother disapproves of serves no purpose.	SA	A	TA	TD	D	SD
19.	It is a bad idea to have a rule that children can only have second helpings of food they like after eating other food served.	SA	A	TA	TD	D	SD
20.	A good way for a mother to show she loves her child is to make his favorite dish.	SA	A	TA	TD	D	SD
21.	Mothers should not use dessert as a bribe to get children to eat.	SA	A	TA	TD	D	SD
22.	When school children are studying for tests, they should be allowed to snack more than usual.	SA	A	TA	TD	D	SD
23.	A mother who loves her children never keeps food from them.	SA	A	TA	TD	D	SD
24.	Promising a snack to children to get them to play quietly is an unacceptable practice.	SA	A	TA	TD	D	SD
25.	Just because a school child is under pressure, it is no excuse for eating extra sweets.	SA	A	TA	TD	D	SD
26.	Giving a disappointed child a cookie or cracker serves no purpose.	SA	A	TA	TD	D	SD
27.	It is not a bad idea to make a child eat a food he dislikes when he has acted silly at the table.	SA	A	TA	TD	D	SD
28.	It is silly to use food to show children that they are loved.	SA	A	TA	TD	D	SD
29.	It is silly to say that "the way to a person's heart is through the stomach."	SA	A	TA	TD	D	SD
30.	A snack is a good thing to give a child who takes a hard fall, so he'll feel better.	SA	A	TA	TD	D	SD

Daughters' Final CFOQ Personal Information Form

Personal Information

31. What is your major?

1. Clothing, Textiles & Related Arts
2. Human Nutrition & Foods
3. Management, Housing & Family Development
4. General Home Economics
5. Education
6. Psychology
7. Sociology
8. Other (Please Specify) _____

32. Indicate your age. I have had my _____ birthday.

1. 18th but not my 19th
2. 19th but not my 20th
3. 20th but not my 21st
4. 21st but not my 22nd
5. 22nd but not my 23rd
6. 23rd but not my 24th
7. less than 18th
8. 24th

33. What was your position in the family in relation to brothers and sisters?

1. only child
2. first child
3. second child
4. third child
5. fourth child
6. fifth child
7. later than fifth child

34. How often do you tend to eat more when studying for tests or exams?

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always
7. always

35. When studying for exams or tests, how much do you eat?

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

36. How often do you tend to eat more when preparing a term paper or major course project?

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always
7. always

37. When preparing a term paper or major course project, how much do you eat?

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

38. How often do you tend to eat more if you've had a personal conflict with someone important to you?

1. never
2. almost never
3. sometimes
4. often
5. very often
6. almost always
7. always

39. How much do you eat if you've had a personal conflict with someone important to you?

1. nothing at all
2. almost nothing
3. small, but sufficient amounts
4. average amounts
5. much
6. very much
7. enormous amounts

Mothers' Final CFOQ Background Information Form

Background Information

Please answer questions 1 through 7 as they pertain to your daughter who is a student at VPI & SU.

1. At birth, how much did your daughter weigh? _____lbs. & _____ozs.

2. At birth, what was your daughter's length? _____inches

3. At what age did you begin to feed her from the bottle?

_____less than 1 month
_____1 to 1.9 months
_____2 to 2.9 months
_____3 to 3.9 months
_____4 to 4.9 months
_____5 to 5.9 months
_____6 to 6.9 months
_____7 to 7.9 months
_____more than 8 months

4. As an infant, when did you feed your daughter?

_____on a set schedule
_____on a flexible schedule
_____on demand
_____combination of set & flexible
_____combination of flexible & demand

5. Could you usually tell by her cry whether or not she was really hungry?

_____yes _____no

6. During infancy were there any feeding problems with this daughter?

_____yes _____no
If yes, what were the problems (allergies, rejection of foods, etc.)? At what age did these problems occur?

Problem	Age

7. What was the first solid food introduced to her and at what age was it introduced?

Solid Food	Age

Summary of Background Information

on Daughters as Reported by Mothers

Table 20

Description of Daughters by Birth Size

Measurement	%	$\bar{X}$	SD
Birth Weight (grams)[a]		3304.4	461.19
2500 or less	4.5		
2501 - 3000	19.0		
3001 - 3500	44.8		
3501 - 4000	25.3		
4001 or more	6.3		
Birth Length (centimeters)		50.6	3.95
30.48	0.5		
40.64	1.9		
43.18	1.9		
45.72	6.7		
48.26	24.0		
50.80	31.7		
53.34	25.0		
55.88	4.8		
58.42	1.4		
60.96	1.4		
71.12	0.5		

Note.-- N = 221

[a]Groupings of birth weight used in Hanes (U.S. Public Health Service, 1975) were followed

Table 21

Summary of Daughters' Early Feeding Experiences

Variable	%
Age daughter was first fed from bottle	
Less than 1 month	76.4
1 to 1.9 months	5.2
2 to 2.9 months	1.9
3 to 3.9 months	6.6
4 to 4.9 months	2.8
5 to 5.9 months	1.9
6 to 6.9 months	1.9
7 to 7.9 months	0.5
More than 8 months	2.8
Type of feeding schedule	
Set	9.1
Flexible	14.6
Demand	8.7
Combination of set and flexible	42.5
Combination of flexible and demand	25.1
Could mother recognize hunger cry?	
Yes	84.4
No	15.6
Feeding problems experienced in infancy	
Yes	20.5
No	79.5
Feeding problems by type[a]	
Rejection	40.0
Allergy	24.4
Colic	20.0
Breast problems (mother)	6.7
Special formula required	6.7
Diarrhea	2.2

Table 21 (Continued)

Summary of Daughters' Early Feeding Experiences

Variable	%
Age of onset of feeding problem (months)	
Birth	20.5
1	34.1
2	4.5
3	11.4
6	4.5
8	2.3
9	9.1
11	2.3
12	2.3
48	2.3
60	6.8
Age solid food was introduced (weeks)	
1	0.9
2	5.2
3	8.1
4	20.9
5	2.8
6	25.1
7	0.9
8	2.8
9	10.4
10	0.5
13	11.8
17	3.8
22	0.5
26	3.8
35	0.5
39	0.9
52	0.9

Table 21 (Continued)

Summary of Daughters' Early Feeding Experiences

Variable	%
Type of solid food first introduced	
Cereal	78.5
Fruit	8.7
Potato	4.6
Baby food (unspecified)	3.2
Vegetables	1.8
Egg	0.9
Meat	0.9
Bread	0.5
Crackers	0.5
Table food (unspecified)	0.5

Note.-- N = 221

[a]Percentages based on n = 45 who reported having a feeding problem during infancy

APPENDIX E

LETTER TO HOME ECONOMICS STUDENTS

COLLEGE OF HOME ECONOMICS

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

OFFICE OF THE DEAN

May, 1977

Dear Student:

A study on attitudes toward child-feeding is being planned within the next month. The study is being conducted by two Home Economics faculty members - Mrs. Cosby Rogers and Dr. Jane Wentworth. We need the cooperation of approximately 200 college women in order to conduct this project.

You may qualify as a participant if you meet the following criteria:

a. you are female.

b. you have had your 18th birthday but have not had your 24th birthday.

c. you were reared by your own biological mother.

d. your mother is presently living.

I hope you will be willing to participate in this study, since by doing so you will help to broaden the base of knowledge in a much needed area. If you will cooperate, please indicate your willingness to do so by returning the card supplied.

Thank you for your assistance in this research project.

Sincerely yours,

Laura Jane Harper

Laura J. Harper, Dean
College of Home Economics

LJH/jv

Enclosure

APPENDIX F

SUBJECTS' AGREEMENT CARD

I am willing to participate in the child-feeding study.

_____ yes _____ no

I may be contacted for an appointment at this telephone number _____ until May 25th. After that I may be contacted at _____.

(address and telephone number)

_____

Student Signature

_____

Local Address

APPENDIX G

ANTHROPOMETRIC DATA FORM

Subject Code _____

This Sheet is for Office Use Only

Anthropometric Data

	#1	#2	Average
H	_____	_____	_____
W	_____	_____	_____
ST	_____	_____	_____
ARM	_____	_____	_____