

A STUDY OF CHILDREN'S DIETING CONCERN

CENTRE FOR NEWFOUNDLAND STUDIES

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A STUDY OF CHILDREN'S DIETING CONCERN

BY

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requirements for the degree of  
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## ABSTRACT

The dieting concern of elementary school children was examined in order to determine whether a developmental pattern was present. One hundred and forty-six (84 girls, 62 boys) schoolchildren in grades kindergarten, 2, 4 and 6 were individually interviewed using a structured interview which consisted of questions about figure size preference and dieting behaviour. Following the interview, height and weight measurements were taken on each subject using a tape measure and mechanical weight scale. Multivariate and descriptive analyses were performed on the data. Results of the study revealed no grade or sex differences in dieting concern. These results indicate that dieting concern is present in children.

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Dieting concern, a desire to be thinner and a deliberate attempt to lose weight, is a common and admired characteristic in modern society. It is well known that many adults try to lose weight for reasons other than health and that women are more likely than men to diet (Cash & Hicks, 1990; Connor-Greene, 1988). Studies have illustrated that some adolescents express dieting concern that is similar to that of adults (Huon & Brown, 1986). While it is well known that dieting concern is present in adolescence, the age at which such concern first emerges is unknown. Recent evidence (Maloney, McGuire, Daniels & Specker 1989; Richards, Casper & Larsen, 1990; Seligman, Joseph, Donovan & Gosnell, 1987) suggests that pre-adolescent children may exhibit dieting concern. Dieting concern of pre-adolescent children, particularly those below the grade 3 level, has not been investigated.

The purpose of this study is to determine whether a developmental trend is present in dieting concern and whether there are sex differences in dieting concern in young children.

#### Adolescent Dieting

Adolescents who exhibit dieting concern do so in similar ways as adults; there may also be similarities

between the dieting concern of adolescents and children. The dieting concern of adolescents has been more extensively studied than that of children. As the profile of adolescent dieting concern may be similar to that of children, it is useful to review these findings.

Studies over the past 20 years show that adolescents are concerned about being overweight (Rosen & Gross, 1987; Richards et al., 1990). In 1969, Dwyer, Feldman, Seltzer and Mayer reported that 80% of American high school girls thought themselves to be overweight and desired to weigh less than their reported weight. Adolescent girls in Sweden, interviewed a few years later, reported "feeling fat" as a negative feeling (Nylander, 1971). This desire to be thinner continues to be present in the reports of adolescents and often is reported to result in the initiation of dieting behaviour (Hackett, 1988).

Davies and Furnham (1986) observed that the desire to be thinner lead to dieting behaviour in their study of 182 female adolescents (11yrs to 18yrs). Subjects in this study completed a questionnaire devised by the authors which assessed desires and attempts to alter body weight. Over 50% of girls over 12 years of age wanted to lose weight. Of the girls that considered themselves to be just the right size, the percentage

that had considered dieting increased from 23% at age 12 to 65% at age 18. Older girls (18 year-olds) were more likely to have considered altering the type and amount of food eaten in order to lose weight than 12 year-olds. The authors suggest that the older girls display a different pattern of dieting concern than the younger girls.

Rosen and Gross (1987) investigated the prevalence of weight reducing and weight gaining in adolescents and describe dieting behaviour as "epidemic". A total of 1373 subjects in grades 9 to 12 were obtained from three public schools. Subjects completed a questionnaire containing items about demographics and dieting concern. Weight modification was not related to grade level for girls; however, boys were more likely to be trying to gain weight in the higher grades. Methods of losing weight included exercise, decreasing calories eaten, cutting out snacks/junk food/sweets, and skipping meals. The most common methods of gaining weight were exercise, increasing calories eaten, and eating a specific food or food group.

Wardle and Beales (1986) assessed body image, food attitudes, and restrained eating behaviour in a group of 348 children aged 12 to 18 years. A questionnaire containing items on body image, dieting behaviour, and

food attitudes, along with a record form that asked for a list of all food consumed over the past day was completed by all subjects. Neither the main effect for grade nor the interaction between grade and sex were significant for restrained eating behaviour; however, the main effect for sex was significant. Girls were more likely than boys to restrict their food intake.

Hill, Rogers and Blundell (1989) investigated the restriction of food intake (restraint) of female adolescents in order to determine whether they would display similar restraint patterns as adult women. In the first phase of the study, 12-year-olds (N=29) and 14-year-olds (N=26) completed a questionnaire (a modified version of the Three-factor Eating Inventory which measures restraint (Stunkard, 1981)). Twenty-four girls were selected from each age group on the basis of their score on the questionnaire (i.e. 12 high restraint, 12 low restraint) and asked to complete the taste-test phase of the study. Subjects were instructed to rate the taste of several kinds of biscuits, while the investigators measured the quantity of biscuits consumed. The restrained (i.e., those who expressed a concern for dieting) adolescents who had been asked to imagine eating their favorite foods ate more than either the non-restrained adolescents or the adolescents who

were overweight (Hill et al., 1989). This finding parallels those from adult subjects, with those adults who are more concerned with dieting being more likely to break dietary restraint and eat more.

These studies suggest that adolescents are concerned about being overweight. While some adolescents, especially girls, actively attempt to lose weight, adolescents are as likely as adults to break dietary restraint and overeat.

#### Children's Dieting

Dieting concern in children may be similar to that of adolescents. However, few studies have been conducted on the dieting concern of children, and none on the dieting concern of children below the grade 3 level. Therefore, only tentative conclusions about any similarities between children's and adolescent's dieting concern may be drawn. Results from studies investigating dieting concern in children suggest that dieting concern is present prior to adolescence.

Maloney et al. (1989) investigated the eating attitudes and dieting behaviour of children in grades 3 through 6. The Eating Attitudes Test for Children (a modified version of The Eating Attitudes Test by Garner & Garfinkel, 1979) and a demographic/dieting

questionnaire were administered to 318 children. The results of this study indicated that 45% of the children wanted to be thinner and 37% had already tried to lose weight. The youngest children in the study, those in grade 3, were least likely to want to be thinner (32.1%) or to have tried to lose weight (32.1%).

Another study of the weight and eating concerns of children was conducted by Richards et al. (1990). A total of 481 children in grade 5 to grade 9 completed a Weight and Eating Concerns Scale (developed by the authors), the Child Depression Inventory (Kovacs, 1985), Rosenberg's Self-esteem Scale (Rosenberg, 1965), and body image scales. Girls were found to report greater weight and eating concerns than boys. Older girls (grades 8 & 9) reported more weight and eating concerns than both younger girls (grades 5 & 6) and boys in all grades.

Zakin, Blyth and Simmons (1984) measured pubertal development, body image, and self-esteem in 200 grade 6 girls. All measures were taken during an individual survey interview. Subjects were asked to rate their satisfaction with their height, weight, and figure development on a four point scale. Girls who were more developed were less satisfied with their weight than less developed girls.

These studies suggest that like adolescents, children are concerned about being overweight. It also illustrates that dieting concern may be present prior to adolescence.

### Sex Differences

Along with information about the development of dieting concern, it is also interesting to observe whether the pattern of sex-differences in the dieting concern of children is similar to that of adults and adolescents. For this purpose sex-differences in the dieting concern of adolescents and children will be discussed.

A number of studies (Huon & Brown, 1986; Jarvie, Lahey, Graziano & Framer, 1983; Richards et al., 1990; Rosen & Gross, 1987; Wardle & Beales, 1986) have indicated that girls are more likely than boys to want to be thinner and to have tried to lose weight.

In a study of adolescents (Rosen & Gross, 1987) 63% of girls reported currently trying to lose weight compared to 16% of boys. Boys (28%) were more likely than girls (9%) to be trying to gain weight. Only one quarter of the girls and one-half of the boys were not actively engaged in changing their weight. The most

common methods of losing weight were similar for boys and girls.

Another study of adolescents (Wardle & Beales, 1986) found that girls in this study were significantly more likely to prefer a lower weight than boys. A sex difference was also reported in dieting behaviour as 15% of girls and 5% of boys reported that they were dieting. This difference was present between subjects of all ages, including the youngest subjects. The youngest girls in the study (12-year-olds) had already begun to keep their weight at "an abnormally low level" (Wardle & Beales, 1986, p. 215), by restricting food intake and did so to the same extent as the older girls and the adults (from the original sample). The 12 year old boys were generally unconcerned with their weight and did not report dieting. The authors therefore concluded that "size dissatisfaction (for women) starts early in life" (Wardle & Beales, 1986, p. 215).

A study of weight and body image was conducted in order to determine whether boys had a more positive body image and greater satisfaction with their weight than girls (Richards, Boxer, Petersen & Albrecht, 1990). A total of 284 subjects in grades 6 to 8 completed height and weight measures, The Pubertal Development Scale (Petersen, Crockett, Richards & Boxer, 1988), The Body



Satisfaction Scale (a modification of the scale developed by Lerner, Karabenick & Stuart, 1973), and one of two self-image scales. Overall, girls were less satisfied with their weight than boys. Girls who rated themselves as being underweight were most satisfied with their weight. Boys were most satisfied with their weight when they rated themselves as average. Girls and boys who rated themselves as being overweight were least satisfied with their weight. Boys perceived their body image and weight more positively than girls.

Rozin and Fallon (1988) also found that physical size is an area where attractiveness is perceived differently by the two sexes. In this inter-generational study, 97 families were asked to complete a questionnaire which contained items about depression, eating behaviour, weight concerns, feelings of self-overweight, and dieting behaviour. They were also asked to indicate their current appearance, ideal appearance, appearance most attractive to the opposite sex, and appearance the opposite sex would rate as most attractive on a scale of 9 figure drawings.

Results of this study show women to be more dissatisfied with their body image than men. Women thought men preferred women to be much thinner than proved to be the case and expressed a greater concern

with weight control than did men. Mothers and daughters expressed similar appearance and dieting concern. Fathers were more likely than sons to be dieting, but less likely than either mothers or daughters. Indeed, the overweight men in this study were not concerned with their weight at all. The greater emphasis that women place on achieving the thin ideal figure size may explain why women engage in dieting behaviour to a greater degree than men.

In another study of adolescent dieting concern, girls and boys expressed equal degrees of body dissatisfaction; however, girls wanted to be thinner while boys wanted to be larger (Cohn, Adler, Irwin, Millstein, Kegeles & Stone, 1987). Boys in this study who were more developed had a larger ideal figure size than their less developed peers. Girls' ideal figure size was not related to their level of development. Therefore girls who were more developed had a greater discrepancy between their current and ideal figure size than less developed girls. (This pattern is parallel to that observed by Zakin et al. in their 1984 study.) The authors suggest that the magnitude of this discrepancy may be the reason that girls are more likely to attempt to achieve their thin-ideal figure size through weight loss than boys.

Grant and Fodor (1986), in their study of 169 high school students, determined through the use of The Eating Attitudes Test (EAT 26) (Garner, Olmstead, Bohr & Garfinkel, 1982), The Eating Disorder Inventory (Garner, Olmstead & Polivy, 1983), and the Lerner Scales I, II, and III (adapted from Lerner, Orlos & Knapp, 1976) that gender was the strongest predictor of anorectic behaviour in adolescents. Female adolescents were found to link their self-esteem to their perceived physical attractiveness while male adolescents linked their self-esteem to physical effectiveness or strength. The authors conclude that female adolescent's attitudes about physical attractiveness may lead them to attempt to achieve the ideal of thinness to a greater extent than male adolescents.

In a study of attitudes and weight control, the attitudes of adolescent girls were observed to differ from those of adolescent boys (Huon & Brown, 1986). A total of 240 adolescents between the ages of 15 and 19 years of age completed a questionnaire assessing dieting concern and dieting practices. Although there were no differences in the percentages of girls and boys that were overweight, 53.4% of girls wanted to weigh 10% less than their current weight compared to 13.5% of boys. Girls weighed themselves more often than boys. Eighty-

three percent of boys said they "never considered themselves to be fat" compared with 27% of girls.

All of these studies illustrate that adolescent females are more likely to want to be thinner and are more likely to engage in dieting behaviour than adolescent males. Whether a similar sex difference is present in the dieting concern of younger children is of interest.

One study investigating children's dieting concern (Maloney et al., 1989) revealed that girls in grades 4 to 6 were significantly more likely than boys in grades 4 to 6 to have tried to lose weight and to want to be thinner.

Koslow (1988) investigated personal estimates of body fatness in 11 and 12 year old children. A total of 100 subjects indicated their body fatness on a nine point scale (1 = very lean, 9 = very fat). Girls were observed to overestimate personal levels of fatness, while boys' estimates did not significantly differ from the actual skinfold measurements.

These studies suggest that sex-differences may be present in children's dieting concern and children's estimations of body size. However, they do not explain why children want to lose weight or want to be thinner.

### Culture

There may be many reasons that women and girls are more likely than men and boys to engage in dieting behaviour. Western society idealizes the thin physique to a much greater extent for women than for men. Perhaps this is one reason that women express greater dieting concern than men. Girls may learn the value of thinness by observing the behaviour of adult women.

Since the late 1970's there has been an awareness of the "cultural demands on women to be thinner" (Garner, Garfinkel, Schwartz & Thompson, 1980). Garner et al. (1980) reported that over a 20 year period (1959-1978), a trend towards a thinner physique for females was evident in the smaller measurements of both Playboy centerfold models and Miss America Pageant contestants. They also found that at the same time as the ideal body shape for females has become thinner, the average female has become heavier due to improved nutrition. (Garner et al., 1980).

In a more recent study, Davis and Cowles (1989) observed that young women are influenced by the ideal of the thin physique to diet and attempt to achieve this thin ideal. They also found that the 19 year old women in their study had a greater drive for thinness (based on their Eating Disorder Inventory scores) than the 22

year old women. Their study required subjects to complete a questionnaire which included items asking about lifestyle, exercise, dieting, and well-being. Three groups of subjects were selected in order to determine whether there were differences between non-athletes (N=64), athletes who required a thin build to be successful at their sport (N=64), and athletes who required a normal build to be successful at their sport (N=62). Subjects ranged in age from 19 years old to 22 years old. Results of the study revealed that athletes who required a thin build to be successful at their sport expressed the greatest weight concern and body dissatisfaction.

The increase in dieting articles and fad diets (Hill et al., 1989) has reflected a social preoccupation with dieting. The severity to which people diet has also been linked to peer pressure to lose weight (Taylor, 1989). In a survey of 109 first-year female undergraduates, social influences, reflecting the actions of family and friends towards eating, were most likely to predict self reported dieting severity (Taylor, 1989).

Feldman, Feldman & Goodman (1988) state that the thin figure size that is desired by many girls and women is a highly unrealistic expectation as it does not take

into account the biological reality of frame size or weight distribution. Despite such limitations, the ideal figure size is often associated with positive characteristics. Such body build stereotypes can contribute to dieting concern.

In order to determine whether body build stereotypes were present in pre-adolescents, 406 children, aged 9 to 16, completed a questionnaire (Stager & Burke, 1982). In order to assess body build concepts, subjects were asked to assign 12 adjectives (from 12 bipolar adjective pairs found by Staffieri (1967) to discriminate between the ectomorph and endomorph) to four figure drawings. There were no differences in the adjectives assigned to "fat girl" and "fat boy" or to "skinny girl" and "skinny boy".

Differences between an earlier study that used similar methods (Lerner & Korn, 1972) and this study were observed. Lerner and Korn (1972) investigated body build stereotypes in three age groups of subjects (5-6yr, 14-15yr, 19-20yr). Subjects of all ages rated the mesomorph figure positively, the endomorph very negatively, and the ectomorph slightly negatively. In this study, the skinny stereotype was more positive, perhaps reflecting the cultural emphasis on thinness. The fat stereotype was still negative; however, two

positive adjectives (strong and brave) were also selected by subjects as typical of fat children.

Jarvie et al. (1983), in their review of childhood obesity, concluded that children prefer an average build figure and that this preference is independent of the individual's own body build. In this study, the actual weight of the subject was not found to be significantly related to the subject's "fat child" or "skinny child" stereotype.

In another study investigating body image stereotypes (Kirkpatrick & Sanders, 1978), subjects were asked to assign 40 adjectives to three figure drawings (an ectomorph, a mesomorph and an endomorph). The youngest subjects in the study (ages 6 to 9) assigned the most positive adjectives to the mesomorph figure as did subjects in all other age groups. The ectomorph received a negative rating and was perceived as weak. The endomorph figure received the most negative adjectives and was perceived as domineering. Subjects of ages 26-40 rated the endomorph and the ectomorph equally. Subjects over age 40 rated the ectomorph more negatively than the endomorph. It appears that young children have developed body image stereotypes that are similar to those of adolescents and young adults.



Feldman et al. (1988) observed that children as young as 5 years of age expressed concerns with respect to their body image. They found 6-year-olds to dislike the obese build and to assign more positive traits to an average build figure than to an overweight build figure, while 5-year-olds did not consistently have such preferences. However, Story (1979) observed 5-year-olds to have a consistent dislike of the plump figure.

These studies suggest that adolescents prefer a thin or average body build over a large body build. They are also more likely to assign positive characteristics to either thin or average body builds, than to large body builds. Children appear to have similar body build preferences and exhibit similar body build stereotypes which are independent of the child's weight or body build. Whether this preference for a thin or average body build leads children to exhibit dieting concern has yet to be determined.

#### Methodological Issues

To determine whether a developmental trend in dieting concern is present it is necessary to measure both desire to be thinner and dieting behaviour in children.

Desire to be Thinner. A desire to be thinner is most often measured using a written questionnaire format (Connor-Greene, 1988; Davies & Furnham, 1986; Koslow, 1988; Maloney et al. 1989). Subjects are required either to circle "yes" or "no" as a response to a questionnaire item or to rate their desire to be thinner on a Likert scale. Such standard methods of assessment are not appropriate for an investigation of a developmental trend in dieting concern. Young children will not have achieved a level of language, reading or writing skills that allow them to complete pencil and paper measures.

A desire to be thinner is also measured by taking the value of ideal body weight for height minus the value of present weight. Moses, Banilivy and Lifschitz (1989) used self-report measures to determine subjects' perceptions of their present weight and their ideal weight for height. Wardle & Beales (1986) in their study of restraint, body image and food attitudes in children also used self-assessed weights. They interviewed schoolchildren in groups of 20-30 children and asked them their actual weight and what weight they would like to be. The ratio of preferred weight to actual weight was used to determine perceived overweight ( which was presumed to reflect desire to be thinner). Children were

also asked to indicate their present size on a five point scale (1 = thin, 5 = fat).

Asking subjects to state their present weight and preferred weight is an efficient method of determining a desire to be thinner. Subjects can respond to these questions in either a written or oral format. One disadvantage of this method is that it requires subjects to have an understanding of the concept of weight. Young children often have difficulty differentiating between the concepts of size and weight. Many young children do not know their present weight and may not have a preferred weight. As an investigation of a developmental trend in dieting concern involves young children, any method which involves the self-assessment of weight is not appropriate.

A variation on the questionnaire method was used by Zakin et al. (1984) in their study of attractiveness and pubertal development in female adolescents. Each subject was given a questionnaire which was administered orally. Subjects were asked to rate their satisfaction with their height, weight, and figure development on a four point scale ( 1 = not at all happy, 4 = very happy). Subjects were also asked to rate their looks on a four point scale (1 = not at all good looking, 4 = very good looking). A desire to be thinner could be determined by

asking subjects who are not happy with their weight to indicate their reasons for their body dissatisfaction.

One advantage of an orally administered questionnaire is that it does not require categorization of responses as both questionnaire items and responses are standardized. Such standardization facilitates analysis of responses. Another advantage of the orally administered questionnaire is that it eliminates the need for subjects to have developed writing skills.

Despite these advantages, this method has several drawbacks in investigations involving young children. The orally administered questionnaire requires that subjects select their response from a set of responses read by the investigator. The cognitive development of young children is not adequate to retain a set of responses while also selecting a response. The richness of a subject's response is reduced using this method as subjects are restricted in their choice of response. Valuable information in the candid responses of young children is overlooked with this method. In a study investigating the presence of a developmental trend in dieting concern, the detailed responses of children yield important information; therefore, a method that restricts children's expression is not suitable.

A method without the disadvantages of an orally administered questionnaire is the structured interview. This method permits subjects to give detailed responses to open-ended questions. Open-ended questions do not restrict subject's responses as subjects are not required to select a response from a response set. As subjects are not required to remember a set of standardized responses this method is suitable for young children's level of cognitive development. The structured interview may be constructed to be brief and therefore suitable for use with young children, who may have a limited attention span. The disadvantages of this method are that it is difficult to standardize interviewers and that subject's responses must be categorized prior to analysis. The structured interview is an excellent method of obtaining detailed information from children; therefore, it is appropriate for use in an investigation of a developmental trend in dieting concern.

In adolescents, the desire to be thinner has been measured using a scale of figure drawings ranging in size from heavy to thin (Cohn et al., 1987; Rozin & Fallon, 1988; Stunkard, Sorenson & Schulsinger, 1980). Subjects are usually asked to indicate the figure that they would like to look like and the figure that

represents their current size. A numerical value is assigned to each of the figure sizes. Figure size discrepancy, that is, the value of preferred figure size minus the value of perceived figure size, is commonly used as an indicator of body dissatisfaction. If the preferred figure size is thinner than the perceived figure size a desire to be thinner is also presumed to be evident (Cohn et al., 1987).

Stager and Burke (1982) suggest that a visual representation of figure sizes provides a more concrete method for the selection of preferred and perceived figure size than that of a written scale. Another advantage of this method is that children's interest in pictures may also help focus their concentration on the task. Children are likely to find the task easier to complete if they are interested in attending to the task. This method is also useful in investigations that involve young children for it does not require language or writing skills. Figure drawings have been shown to be an effective method of determining preferred and perceived figure sizes in children as young as 6 years of age (Brenner & Hinsdale, 1978).

The best method for determining a desire to be thinner involves using figure drawings as part of a structured interview.

Dieting Behaviour. In children and adolescents, dieting behaviour has been measured with a questionnaire (Davies & Furnham, 1986; Huon & Brown, 1986; Moore 1990; Rosen & Gross, 1987; Wardle & Beales, 1986). A variety of standardized questionnaires to assess dieting behaviour has been developed, for example, The Eating Disorder Inventory (Garner *et al.*, 1983), The Eating Attitudes Test for Children (a modified version of The Eating Attitudes Test; Garner & Garfinkel, 1979), the Three Factor Eating Inventory (Stunkard, 1981), The Dutch Eating Behaviour Questionnaire (van Strien, Frijters, Bergers & Defares, 1986), and the Restraint Scale (Herman & Mack, 1975). Other questionnaires have been developed in order to measure a combination of variables not measured by a published questionnaire (e.g. Cohn *et al.*, 1987, Maloney *et al.*, 1989).

These questionnaires are not appropriate for an investigation of a developmental trend in dieting concern. Children in this study do not have adequate language, reading or writing skills to complete written measures. Oral administration of a questionnaire would also be inappropriate as the Likert scale format used in many questionnaires requires a more sophisticated level of cognitive development than that of young children.

The structured interview is an alternative to the use of questionnaires and is appropriate for obtaining information regarding the dieting behaviour of young children. As was earlier discussed, this method is suitable for a study investigating a developmental trend in dieting concern.

### The Present Study

The present study is concerned with determining whether there is a developmental trend in the presence of dieting concern and whether there are sex-differences in dieting concern. It is well known that dieting concern is present in adolescents (Cohn et al., 1987; Rosen & Gross, 1987) and there is some evidence to suggest that dieting concern may be present in pre-adolescents (Maloney et al., 1989). Dieting concern has been observed in children at the grade 3 level; however, the dieting concern of children below this grade level has not been investigated. Such an investigation is essential in order to determine when such concerns develop.

### Hypotheses

1. Dieting concern will increase as grade level increases.



2. Girls will display greater dieting concern than boys.

3. Children who express a preference for wanting to be thinner will be more likely to have tried to lose weight than children who do not express this preference.

## METHOD

Subjects

One hundred and forty-six subjects were obtained from St. Andrews Elementary and Bishop Abraham Elementary, two schools in St. John's city area. St. Andrews draws its population from a suburban neighborhood, while students at Bishop Abraham reside in the inner city. All available students in Kindergarten, grade 2, grade 4, and grade 6 at both schools were given consent forms prior to the study. Only students who received consent from their parent/guardian were eligible to participate in the study (17% of students were excluded on this basis). Children in grades kindergarten, 2, 4 and 6 completed the structured interview. Figure 1 presents a distribution of subjects by sex, grade, and school.

Materials

A height chart marked on the testing room wall and a portable (Delhar mechanical spring style) weigh scale were used to collect height and weight measurements.

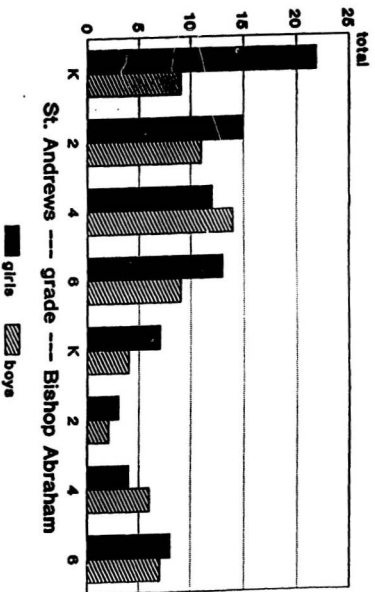


Figure 1. Distribution of subjects by sex, grade, and school

### Measures

All subjects were presented with The Appearance Scale which consists of a series of five line drawings of human figures, of the same height (20cm), that range in size from very thin to very fat (see Appendix A). These figures are similar to those designed and illustrated in Stunkard, Sorenson and Schulsinger (1980). To facilitate scoring, each figure on the scale was assigned a number from 1 (very thin) to 5 (very fat). Subjects were not aware that the figures were numbered. Subjects were required to indicate which line drawing best represented the figure size that they preferred and which line drawing best represented their perceived figure size.

The structured interview was developed by the authors and consists of items indexing dieting concern (see Appendix B).

### Procedure

Consent forms (see Appendix C) were distributed and those subjects who were eligible for the study had their names recorded on a list. Subjects were interviewed in the order that their names appeared on the list. All subjects who received consent to participate were interviewed. The investigator individually interviewed each subject in an empty office. The investigator asked

the questions of each subject following the structured interview and then took height and weight measures. Once these measures were obtained, the investigator answered any questions pertaining to the study.

## RESULTS

The results of the tests of the hypotheses are presented following a description of the sample and an explanation of data preparation. A description of other findings are presented at the end of the results section. Multivariate analysis of variance and multiple regression techniques were performed on the data. Chi square and descriptive statistics are also presented on the data.

### Data Preparation

Subjects' responses to the two items "Why (do you prefer the figure size you selected)?" (#8) and "Why (do you want to be thinner)?" (#10) were categorized in order to aid in the interpretation of results. Six categories were developed based on the content of the subjects' responses (see Table 1).

Inter-rater reliability for all categories was obtained by having an independent rater (a graduate student not involved in the study) assign the subjects' responses into six categories: "cosmetic", "health",

Table 1

Definitions of response categories and sample responses  
from the structured interview

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| Category               | Definition                                                              | Examples of Responses                             |
|------------------------|-------------------------------------------------------------------------|---------------------------------------------------|
| <hr/>                  |                                                                         |                                                   |
| <u>Cosmetic</u> :      | physical appearance                                                     | "fat is ugly"<br>"skinny looks better in clothes" |
| <u>Health</u> :        | physical activity and health                                            | "thin better for sports"<br>"fat is unhealthy"    |
| <u>Interpersonal</u> : | comments/reactions of others to oneself                                 | "get called pig"<br>"fat gets teased"             |
| <u>Emotional</u> :     | feelings about oneself                                                  | "don't like what I am"<br>"think I'm too fat"     |
| <u>Don't Know</u> :    | don't know                                                              | "don't know"                                      |
| <u>Other</u> :         | figure size preference based on criteria other than overall figure size | "I like its feet"<br>"Its hands are nice"         |

---

"interpersonal", "don't know", "emotional", and "other" (see Appendix D). Agreement between the experimenter and the independent rater for classification of the complete set of responses into the six categories was 88% (number of correct classifications/total number of responses).

Responses to the item that requests reasons for initially beginning to diet (#17 "What made you decide to lose weight?") were also categorized. Categories were derived based on the subject's responses. The "cosmetic", "health", and "emotional" categories were the same as the categories described above. The "interpersonal" category contained responses that reflect a reaction from others due to one's size such as "my relative who diets suggested I do too" or "my friends are skinnier than me". The final category consists of the responses of subjects who reported dieting but who responded "don't know" to this question.

Information about specific dieting activities was requested by several items (#12 "What did you do?", #13 "Anything else?", #18 "What does diet /dieting mean?", #22 & #24 "What do they do?", #25 "Anything else?"). Responses to these items were classified into the following categories: "exercise", "eat less junk food", "eat healthy food", "eat diet food/drink", "eat less", "attend Weight Watchers", "lose weight", and "get thin".

Responses to the item that requested information about criteria for dieting success (#15 "How can you tell?") were classified into the categories "got thin", "felt better", "weigh less", "stay same size", "looked different", "got bigger", "clothes fit better", and "don't know".

Responses to the questions asking for family members who dieted to lose weight (#20 "Who?", #21 "Anyone else?") reflected the relationship of the family member who dieted to lose weight.

#### Sample Characteristics

In order to determine whether the data from the two schools could be treated as one sample, Chi-square analyses were performed on the following variables: preferred figure size, reason for preferred figure size, perceived figure size, figure size discrepancy, desire to be thinner, reason for desire to be thinner, dieting frequency of friends, dieting activity of friends, dieting frequency of family members, dieting activity of family members, having tried to lose weight, frequency of dieting behaviour, dieting success, reason for decision to begin trying to lose weight, definition of diet/dieting. Only one significant difference, out of fifteen analyses, was found. This difference occurred on



the question "Have you ever tried to lose weight?". At St. Andrews Elementary 39% of subjects reported having tried to lose weight, while at Bishop Abraham 58.5% of the subjects reported having tried to lose weight [Chi square (1, N=146), 6.44,  $p < .03$ ].

As the responses from the students at each school were compared on each question of the structured interview and as this is the only difference to emerge between the responses given by students at both schools, it may be that this is a chance finding. An alternate explanation is that over half of the subjects from Bishop Abraham were in the two older grades while the majority of St. Andrews students were in the two lower grades and that younger subjects may be less likely to have tried to lose weight.

Since the subjects' responses from the two schools were not significantly different and as the investigation is concerned with drawing conclusions about elementary school children, it is reasonable to treat the subjects from both schools as one sample of elementary school children.

#### Tests of the Hypotheses

It was expected that there would be an increase in dieting concern over the grades. Dieting concern was

derived from the difference between preferred and perceived figure size (figure size discrepancy), and the subjects' responses to the two questions, "Have you ever wanted to be thinner?", and "Have you ever tried to lose weight?". A second prediction was that girls at all grade levels would display greater dieting concern than boys.

Hypotheses 1 and 2 In order to test the hypotheses about the grade and sex differences in dieting concern a 2 x 4 (sexes x grades) between-subjects MANOVA (using SPSS-X) on three dependent variables: figure size discrepancy, wanting to be thinner, and having tried to lose weight, was performed. No subjects were deleted from the analysis for having outlying scores.

MANOVA analysis revealed a significant main effect for sex,  $F(3,136) = 2.82, p < .05$ , but not for grade or for the interaction between sex and grade. The main effect for sex is qualified by a low association between sex and dieting concern as reflected by Wilk's Lambda (.94). The prediction that there would be a developmental trend in dieting concern was not supported.

In order to investigate the effect of sex on each dependent variable and to control for Type I error, Roy-Bargman stepdown F - tests were performed on the data (see Table 2). None of the individual dependent

variables were significantly affected by sex, which reflects the low association between sex and dieting concern. [A univariate F test revealed a significant effect of sex on figure size discrepancy,  $F(1,138) = 4.08, p < .05$ , with girls (mean = .81) having a greater discrepancy than boys (mean = .39).] Pooled within-cell correlations of the dependent variables indicate that the variables are not highly correlated with each other (see Table 3). Therefore, the prediction that girls would exhibit greater dieting concern than boys is not supported.

Hypothesis 3 In order to determine whether the preference for wanting to be thinner was a predictor of having tried to lose weight, a multiple regression was carried out with having tried to lose weight as the dependent variable and body mass index, wanting to be thinner, having friends known to be dieting, grade, and sex as independent variables. Analysis was performed using SPSS-X Regression.

Table 2

The effect of sex on three dependent variables

| Dependent Variable | Univariate-F | df    | Stepdown-F | df    |
|--------------------|--------------|-------|------------|-------|
| Want to be Thinner | 1.44         | 1/138 | 1.44       | 1/138 |
| Discrepancy        | 4.08*        | 1/138 | 3.49       | 1/137 |
| Try to Lose Weight | 1.48         | 1/138 | 3.40       | 1/136 |

\*  $p < .05$ 

Table 3

Pooled within-cell correlations among dependent variables

|                    | Want to be Thinner | Discrepancy | Try to Lose Weight |
|--------------------|--------------------|-------------|--------------------|
| Want to be Thinner | .51                |             |                    |
| Discrepancy        | .12                | 1.21        |                    |
| Try to Lose Weight | .33                | .13         | .47                |

(Standard Deviations on the Diagonal)

Table 4 presents a summary of the regression analysis. R was significant,  $F(5,30) = 7.14, p < .001$ . Four of the independent variables significantly contributed to having tried to lose weight. The greatest predictor of having tried to lose weight was wanting to be thinner, followed by body mass index, sex, and having friends known to be dieting. These variables accounted for 20% of the variance (17% adjusted). Means and standard deviations are presented in Table 5.

#### Exploratory Analysis

Along with the data regarding the specific hypotheses, the subjects' responses to the structured interview provided information about a variety of other areas. Information about such areas has not previously been presented on subjects of this grade range. Although some of these responses did not yield significant differences between groups, this material is included as it provides a valuable description of children's attitudes and behaviour.

Desire to be Thinner Children have been observed to prefer thin and average figure sizes over large figure sizes. A general linear model-analysis of variance (GLM - ANOVA) (Sex x Grade x Preferred Figure Size) was

Table 4

Multiple regression of predictor variables on having  
tried to lose weight

|                               | Body Mass<br>Index | Having<br>friends<br>who diet | Want to<br>be thinner | Sex     | Grade |
|-------------------------------|--------------------|-------------------------------|-----------------------|---------|-------|
| Body Mass<br>Index            | -                  |                               |                       |         |       |
| Having friends<br>who diet    | .03                | -                             |                       |         |       |
| Want to be<br>thinner         | -.13*              | .11                           | -                     |         |       |
| Sex                           | .05                | .17*                          | .11                   | -       |       |
| Grade                         | .33*               | -.08                          | -.00                  | .12     | -     |
| -----                         |                    |                               |                       |         |       |
| B                             | -.0410**           | .1235*                        | .2367**               | -.1628* |       |
| Beta                          | -.2862             | .1660                         | .2614                 | -.1742  |       |
| R <sup>2</sup> = .20          |                    |                               |                       |         |       |
| Adjusted R <sup>2</sup> = .17 |                    |                               |                       |         |       |
| R = .45 **                    |                    |                               |                       |         |       |

\* p< .05 \*\* p<.001

Table 5

Means and standard deviations of predictor variables

|                       | Body<br>Mass<br>Index | Having<br>friends<br>who diet | Want to<br>be thinner | Grade |
|-----------------------|-----------------------|-------------------------------|-----------------------|-------|
| Mean                  | 17.59                 | 1.90                          | 1.56                  | 2.47  |
| Standard<br>Deviation | 3.24                  | .62                           | .51                   | 1.5   |

performed on the data (question #6). There were no significant main effects for grade or sex and the grade/sex interaction was also not significant.

Although there were no significant sex differences, there were some interesting patterns in the responses of girls and boys. The most dramatic pattern of figure size preference occurred in the girls' responses. They preferred the thinnest figure size at all grade levels (see Fig.2). Forty-eight percent of the kindergarten girls selected the thinnest figure size, while this preference had increased to 71.4% by grade 6; however, the increase was not significant. The opposite pattern of preference was found for boys, for by grade 6, only 25% of the boys preferred the thinnest figure size (see Fig.3). Boys were most likely to prefer the thin or average figure sizes.

While it is known that children prefer a thin or average figure size, the reasons why children exhibit these preferences are less well known. Responses in this study provided information regarding the reasons for figure size preference.



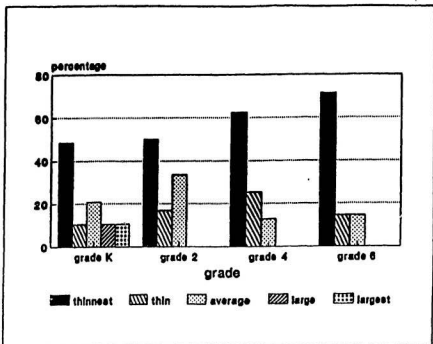


Figure 2. Girls: preferred figure size

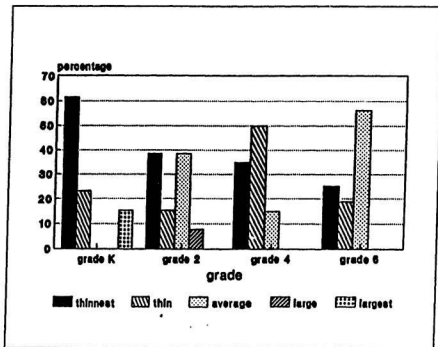


Figure 3. Boys: preferred figure size

A variety of reasons were given by both boys and girls to explain the basis for selection of their preferred figure size (see Fig.4 & Fig.5). Girls at all grade levels, except for kindergarten, were most likely to list "cosmetic" reasons as reasons for preferring a figure size. Boys in grades 2, 4 and 6 were more likely to select a figure size for "health" reasons than were girls at these grade levels; however, boys also selected a figure size based on "cosmetic" reasons.

It appears that "cosmetic" reasons are important to both girls and boys when selecting an ideal figure size. "Health" reasons are not perceived as important by girls which may explain why girls are more willing than boys to try to control their weight through unhealthy means, such as restrained eating (Hackett, 1988).

If children express a preference for a thin or average figure size, then there may be a discrepancy between this ideal figure size and their perceived figure size. Adult and adolescent women have a greater discrepancy between their ideal and current figure size than do their male counterparts (Rozin & Fallon, 1988). It is of interest to determine whether a similar pattern of discrepancy exists between girls and boys.

Girls' discrepancy scores indicated that they would like to be thinner. These ideals were most evident

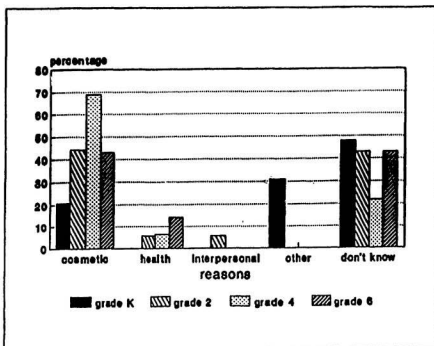


Figure 4. Girls: reasons given for preferred figure size

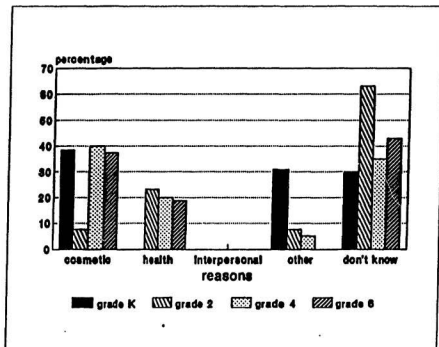


Figure 5. Boys: reasons given for preferred figure size

in the older grades. The discrepancy scores of grade 6 boys indicated that they would like to be larger. These are the only subjects who report wanting to be larger. (In order to graphically illustrate the pattern of discrepancy between preferred and perceived figure size the data were collapsed into the following categories: thinner, stay the same, larger. see Fig.6 & Fig. 7).

These results suggest that girls establish a preferred figure size that is thinner than their perceived size when quite young and are consistent in their support of this ideal size. While boys also exhibit discrepancy between their preferred and perceived figure size they do not endorse the thinner figure size to the same extent as the girls.

If some children endorse a thin figure size as the ideal, it follows that they may express a desire to be thinner. Figure 8 illustrates the pattern of wanting to be thinner across the grades and sexes.

It could be assumed that some children express a desire to be thinner as a consequence of their preference for a thin figure size. In order to determine whether this was indeed true, subjects were asked to give a reason for wanting to be thinner. Many subjects indicated to some extent that they "did not know" why

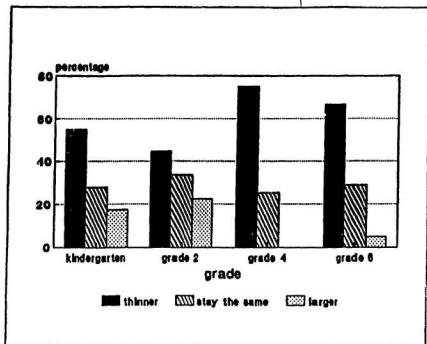


Figure 6. Girls: discrepancy between preferred and perceived figure size

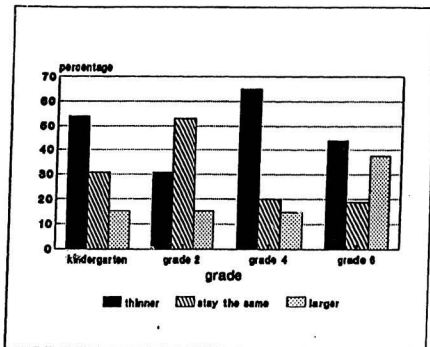


Figure 7. Boys: discrepancy between preferred and perceived figure size

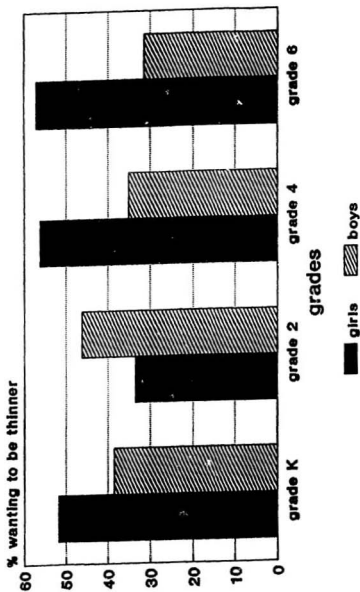


Figure 8. Frequency of wanting to be thinner

they wanted to be thinner. This response was most the most common response given by kindergarten subjects and decreased through all grade levels to become the least common response by grade 6 subjects, though the differences failed to reach significance (see Fig.9 & Fig.10). Girls in all grades listed "cosmetic" reasons as the main reason for wanting to be thinner. The most common reasons given by boys were "health" and "cosmetic" reasons. It appears that "cosmetic" reasons are important reasons that prompt children to want to be thinner; however, they are not the only reasons.

Definition of Diet/ Dieting As part of this study was concerned with dieting concern, it was essential to determine each subject's understanding of the words diet and dieting. If subjects used either word in their responses to the interview questions, the investigator asked what they meant. Chi square techniques were applied to subjects' definitions of diet/dieting in order to determine whether grade or sex differences existed. The only significant difference was between grades [Chi Square (21,N=146)= 56.70,p <.001]. Subjects from the lower grades were more likely than subjects from the higher grades to respond "don't know" when asked to define either word. Figure 11 illustrates the variety of subject's responses.

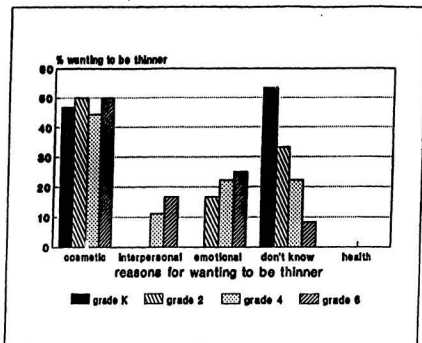


Figure 9. Girls: reasons given for wanting to be thinner

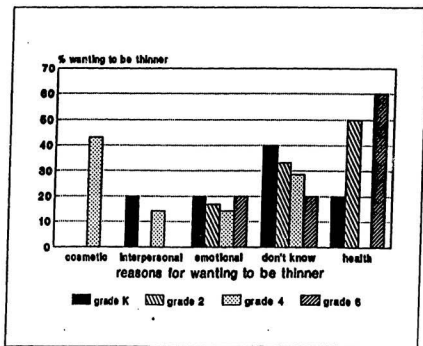


Figure 10. Boys: reasons given for wanting to be thinner



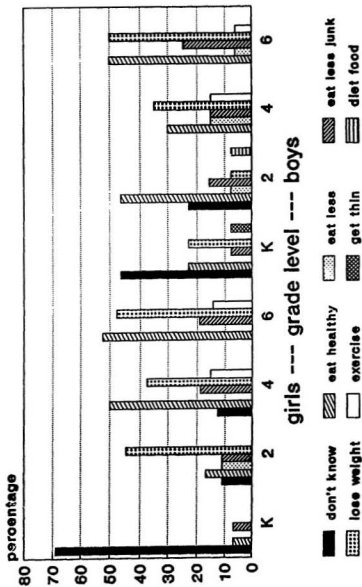


Figure 11. Definition given for diet/dieting

Dieting Behaviour Subjects were asked questions about dieting behaviour in order to determine whether the sex differences in dieting behaviour observed in adults and adolescents (i.e. women dieting more than men) was present in children. The percentage of subjects, by sex and grade, who reported having tried to lose weight is presented in Figure 12.

The differences between grades or sexes in the frequency of having tried to lose weight failed to reach significance. When asked how often they had tried to lose weight most subjects responded with "once" or "twice" (see Fig.13 & Fig.14).

An increase in the frequency of having tried to lose weight across the grades would be expected. This was not observed in this study as kindergarten subjects reported having tried to lose weight more often than other subjects. In view of this pattern of results the information on frequency of having tried to lose weight must be viewed with skepticism.

As children of all ages reported that they were trying to lose weight, it was interesting to compare the activities that they selected in order to try to lose weight. There was a significant difference between grade levels in the activities that subjects engaged in to try to lose weight [Chi square (15,  $N=146$ ) = 41.13,  $p < .001$ ].

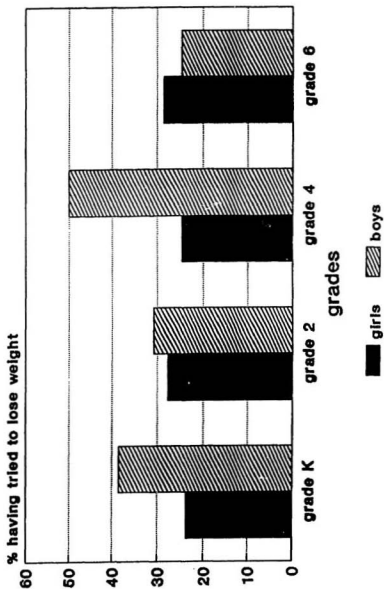


Figure 12. Distribution of subjects having tried to lose weight

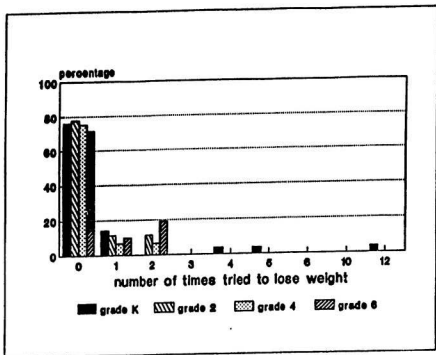


Figure 13. Girls: frequency of having tried to lose weight

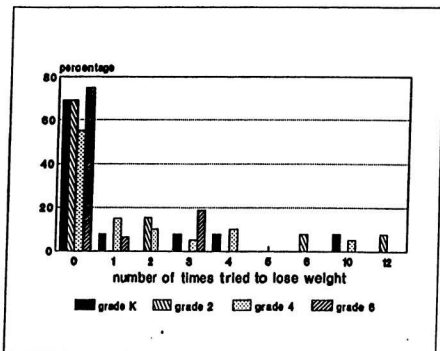


Figure 14. Boys: frequency of having tried to lose weight

Older subjects were more likely to "eat healthy" or "eat less" than younger subjects. Girls listed more activities that they engaged in to try to lose weight than did boys (see Fig.15 & Fig.16).

The reasons why children begin to try actively to lose weight were expected to be related to a desire to be thinner, as this is the reason expressed by most adolescents. The reasons for the initial decision to try to lose weight significantly differed between grades [ $\chi^2(12, N=146) = 45.15, p < .000$ ]. Kindergarten subjects were most likely to begin to try to lose weight due to "cosmetic" reasons, while by the grade 6 level no subjects stated this reason (see Fig.17 & Fig.18). The initial decision to try to lose weight was influenced by different variables for boys and girls [ $\chi^2(4, N=146) = 20.53, p < .001$ ]. Boys said that they wanted to lose weight for "health" reasons; no girls reported this reason.

Subjects expressed a variety of criteria for success at having tried to lose weight (see Fig. 19 & Fig. 20). In the higher grades, subjects were most likely to state "weigh less" as their criteria for success.

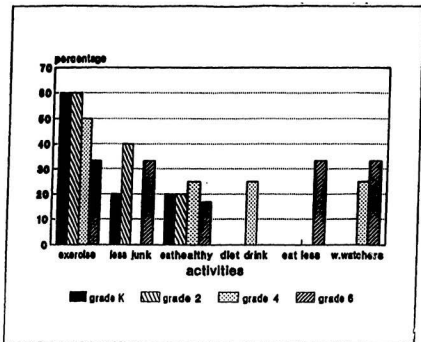


Figure 15. Girls: what I do to try and lose weight

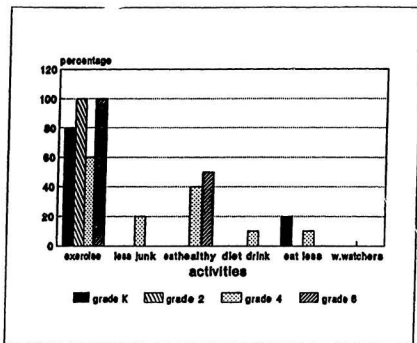


Figure 16. Boys: what I do to try and lose weight

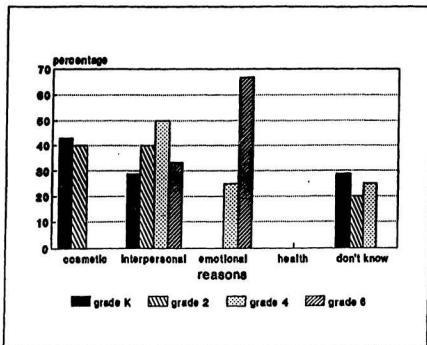


Figure 17. Girls: reasons given for decision to try to lose weight

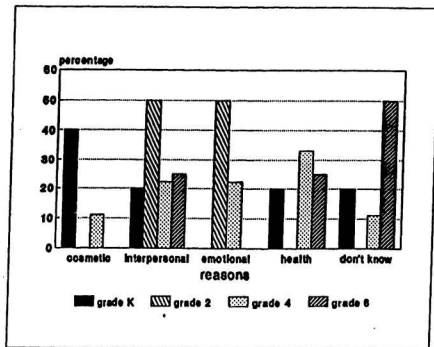


Figure 18. Boys: reasons given for decision to try to lose weight

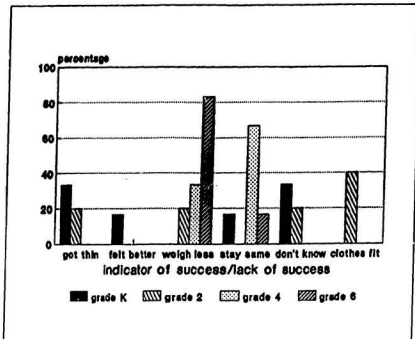


Figure 19. Girls: criteria for success at trying to lose weight

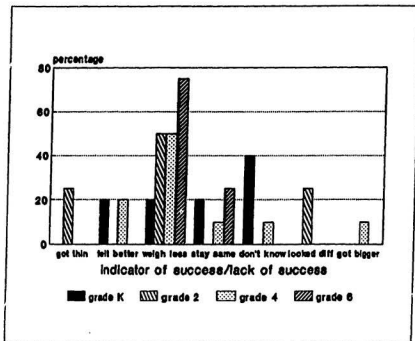


Figure 20. Boys: criteria for success at trying to lose weight



Dieting Behaviour of Family Members For subjects who reported family members to be dieting, the family member who was most frequently said to be dieting was the mother. Fathers were the next most frequently reported to be dieting (see Fig 21). Grade 6 girls' frequency of sisters' dieting was 20 percent higher than any other group; however, there were no significant differences between either grade levels or sexes.

When asked to describe what their family members do to diet all subjects gave similar responses. Subjects who reported that they knew of family members who were dieting stated that the family members "exercised", "ate healthy food", "ate less food", and "ate less junk food". A few subjects also reported that family members "attended Weight Watchers" or that they "did not know" what their family members did to diet.

Dieting Behaviour of Friends There were no significant differences between grades in the frequency of friends known to be dieting although a gradual increase across the grade levels in the percentage of subjects with friends known to be dieting was observed (see Fig.22). Subjects reported that their friends who were dieting engaged in the same activities to lose weight as did their family members who were dieting.

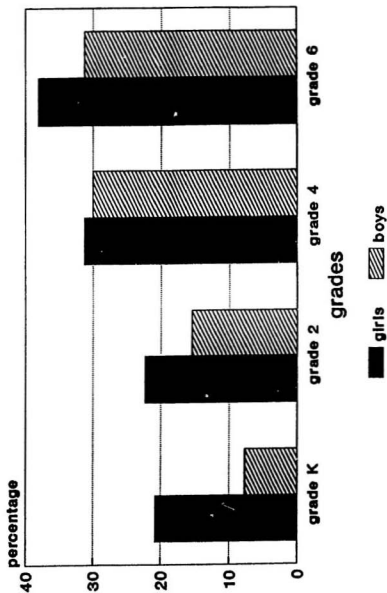


Figure 22. Frequency of friends who try to lose weight

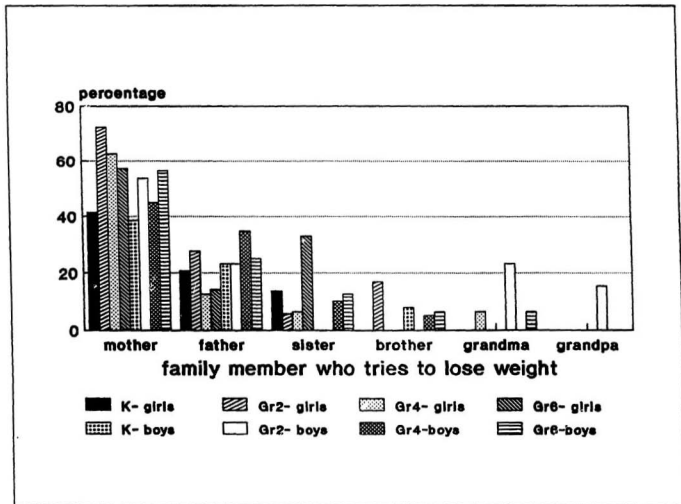


Figure 21. Distribution of family members who try to lose weight

## DISCUSSION

Dieting Concern

Hypothesis 1 The first prediction that there would be an increase in dieting concern across grades was not supported in the study. Subjects of all ages were not only aware of the attractiveness of the thin figure size, but also described activities in which they participated in an attempt to achieve this ideal figure size. The similarities between grades was unexpected and suggests that dieting concern is established much earlier than has been previously reported.

The similarities between grades on the measures of "wanting to be thinner" and "having tried to lose weight" may be due to the dichotomous nature (yes vs. no) of the items. A more sensitive scoring method with more response choices for these items may have yielded some differences across grades.

Subjects in all grades were adamant in expressing their preference for thinness and their desire to be thinner. Some comments made by subjects in the study show the extent of their concern: "Fat is ugly", "My legs look fat when I wear shorts in gym class", "My brother calls me a pig", "I don't like what I am".

Children as young as 5-years-old expressed these concerns.

Subjects in all grades reported wanting to be thinner and having tried to lose weight. Some children have already felt the stigma of being considered overweight. Indeed, many subjects reported that their attempts to lose weight were consequences of being teased about their appearance. All subjects focused on the "cosmetic" aspects of dieting; however, some subjects reported other factors such as "health" or "emotional" reasons. The occurrence of "health" and "emotional" reasons suggests that some subjects have a more complex rationale for attempting to try to lose weight of which only one part is the development of a thin physique. It is not until the emotional component of body size dissatisfaction emerges that children abandon the 'proper' dieting activities for the unhealthy weight loss strategies that are often practiced by adults.

It was very surprising that 5-year-olds reported similar dieting behaviour to 12-year-olds. All subjects appeared sincere when responding to the investigator's questions; however, discrepancies between responses and actions may have existed. One explanation is that subjects may have given a response that they thought

would make them 'look good' to the investigator. Children have learned that thinness is desirable, perhaps they have also learned that attempting to become thinner is also admired. By indicating that they have tried to lose weight, subjects may be trying to create a positive image. A more direct method may be more effective in measuring the dieting behaviour of children.

Subjects in all grades report trying to lose weight. What is of particular interest in the dieting behaviour of children is that the weight reducing activities that are most often reported are those which are generally associated with a healthy lifestyle, such as "eating healthy" and "exercising". One explanation of this is that children are absorbing the 'proper' way to diet from the material on nutrition that they are taught in health class. They then repeat what they have learned as their report of their own dieting behaviour.

Along with "proper" weight reducing activities, some subjects reported engaging in weight reducing strategies that do not seem effective, such as "not eating (chocolate) bars...eating chips instead". They reported following their "diets" with the same intensity as those that followed more logical weight loss techniques. Weighing less and looking thinner is

the goal of both the logical and farfetched strategies.

A shift in activities from those dieting practices reported by most children (i.e. exercise) to dieting practices that are more similar to those of adults (i.e. attend Weight Watchers) was observed by the investigator. This shift appears to follow developmental changes that occur throughout childhood. As the change in dieting behaviour is observed between grade 4 and grade 6 it may be tied to the onset of puberty. Unfortunately, this cannot be determined based on the results from this study.

Hypothesis 2 The second prediction that girls would express more dieting concern than boys was not supported. Although there were no statistical differences, the investigator did observe differences in the attitudes of girls and boys, especially in the higher grades.

As girls physically mature at an earlier age than boys, they are more likely to become dissatisfied with their body size at an earlier age (Salmons, Lewis, Rogers, Gatherer & Booth, 1988). Some girls in grades 4 and 6 were very reluctant to be weighed, despite knowing that all information was anonymous. Only after the investigator weighed herself would they consent to be

weighed. These girls reported being teased about being fat, although none were markedly overweight.

There is some evidence to suggest that the growth of fat tissue that accompanies puberty in girls leads to increased body dissatisfaction (Salmons et al., 1988). Since girls in grade 6 are likely to be entering puberty they may be experiencing increased body dissatisfaction. Along with the social pressures for women to be thin, this body dissatisfaction may explain the emotional component of dieting concern as was found in this study. Some subjects in this study stated that "emotional" reasons were the reasons that they began to try to lose weight.

The sex-difference in the reasons for beginning to try to lose weight are consistent with the pattern observed by Striegel-Moore, Silberstein and Rodin (1988). They found that women viewed their bodies on "aesthetic and evaluative dimensions", while men viewed their bodies as "functional and active" (Striegel-Moore et al., 1988, p75). In this study, many boys based their decision to try to lose weight on "health" reasons. Girls never reported "health" as a reason for trying to lose weight. Perhaps boys attempt to manipulate their weight to improve their physical effectiveness, while



girls do so in an attempt to improve their physical appearance.

Hypothesis 3 The third prediction that the attraction of thinness would influence reports of having tried to lose weight was supported. This suggests that children are similar to both adults and adolescents in this reason for trying to lose weight.

The youngest subjects in the study were not always able to verbalize the reasons for their preference for thinness; however, it was no less intense than that of older subjects. "Because skinny is best!" is a typical response from a subject who could not explain why she preferred the thin figure size.

Children have been shown to rate physically handicapped children ahead of obese children when asked who they would like to have as friends (Jarvie et al., 1983). Such results suggest that being overweight is associated with negative characteristics and that even young children make the association between thinness and attractiveness.

The mass media's promotion of the "ideal" figure size as a thin figure size may influence dieting behaviour. Many subjects expressed a strong preference for the thin figure size, while at the same time

acknowledging that they did not resemble this ideal figure size. It is well known that body dissatisfaction in adults leads to dieting behaviour; therefore, this preference for the thin figure size when combined with the emotional component of body dissatisfaction may also lead to dieting behaviour in children.

Dieting is perceived as a behaviour prevalent in adolescence. The results of this study indicate that dieting concern is present in pre-adolescent children.

#### Implications for Research

There are several results of this study which seek further clarification. The possibility of a shift in dieting activities between grade 4 and grade 6 could be examined in order to determine the factors that influence this shift.

As dieting concern was observed to be present at the kindergarten level, children younger than those in this study could be questioned in order to determine when dieting concern begins.

## REFERENCES

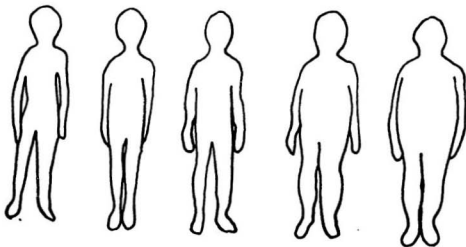
- Brenner, D. & Hinsdale, G. (1978). Body build stereotypes and self-identification in three age groups of females. Adolescence, 13(52), 551-561.
- Cash, T.F. & Hicks, K.L. (1990). Being fat versus thinking fat: Relationships with body image, eating behaviours, and well being. Cognitive Therapy and Research, 14(3), 327-341.
- Cohn, L.D., Adler, N.E., Irwin, C.E., Millstein, S.G., Kegeles, S.M. & Stone, G. (1987). Body figure preferences in male and female adolescents. Journal of Abnormal Psychology, 96(3), 276-279.
- Connor-Greene, P.A. (1981). Gender differences in body weight perception and weight-loss strategies of college students. Women & Health, 14(2), 27-42.
- Davies, E. & Furnham, A. (1986). The dieting and body shape concerns of adolescent females. Journal of Child Psychology and Psychiatry, 27(3), 417-426.
- Davis, C. & Cowles, M. (1989). A comparison of weight and diet concerns and personality factors among female athletes and non-athletes. Journal of Psychosomatic Research, 33(5), 527-536.
- Dwyer, J.T., Feldman, J.J., Seltzer, C.C. & Mayer, J. (1969). Adolescent attitudes towards weight and diet concerns. Journal of Nutritional Education, 1, 14-19.
- Feldman, W., Feldman, E. & Goodman, J.T. (1988). Culture vs. biology: Children's attitudes toward thinness and fatness. Pediatrics, 81(2), 190-193.
- Garner, D.M. & Garfinkel, P.E. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. Psychological Medicine, 9, 273-279.
- Garner, D.M., Garfinkel, P.E., Schwartz, D. & Thompson, H. (1980). Cultural expectations of thinness in women. Psychological Reports, 47, 483-491.
- Garner, D.M., Olmstead, M.P., Bohr, Y. & Garfinkel, P.E. (1982). The eating attitudes test: Psychometric

- features and clinical correlates. Psychological Medicine, 12, 871-878.
- Garner, D.M., Olmstead, M.P. & Polivy, J. (1983). Development and validation of a multi-dimensional eating disorder inventory for anorexia nervosa and bulimia. International Journal of Eating Disorders, 2(2), 15-34.
- Garner, D.M. & Olmstead, M.P. (1984). Eating Disorder Inventory Manual. Lutz, Florida, Psychological Assessment Resources, Inc.
- Grant, C.L. & Fodor, A. (1986). Adolescent attitudes toward body image and anorexic behaviour. Adolescence, 21(82), 269-281.
- Hackett, R. (1988). An investigation of obesity and dietary restraint in two samples of Newfoundland adolescents. Unpublished manuscript. Memorial University of Newfoundland, St. John's.
- Herman, C.B. & Mack, D. (1975). Restrained and unrestrained eating. Journal of Personality, 43, 647-660.
- Hill, A.J., Rogers, D.J. & Blundell, J.E. (1989). Dietary restraint in young adolescent girls: A factor analytic study. British Journal of Clinical Psychology, 28, 165-176.
- Huon, G.F. & Brown, L.B. (1986). Attitude correlates of weight control among secondary school boys and girls. Journal of Adolescent Health Care, 7, 178-182.
- Jarvie, G.J., Lahey, B., Graziano, W. & Framer, E. (1983). Childhood obesity and social stigma: What we know and what we don't know. Developmental Review, 3, 237-273.
- Kirkpatrick, S.W. & Sanders, D.M. (1978). Body image stereotypes: A developmental comparison. The Journal of Genetic Psychology, 132, 87-95.
- Koslow, R.E. (1988). Differences between personal estimates of body fatness and measures of body fatness in 11 and 12 year old males and females. Journal of Applied Social Psychology, 18, 533-535.

- Kovacs, M. (1985). The Children's Depression Inventory. Psychopharmacological Bulletin, 21, 995-998.
- Lerner, R.M., Karabenick, S.A. & Stuart, J.L. (1973). Relations among physical attractiveness, body attitudes, and self-concept in male and female college students. Journal of Psychology, 85, 119-129.
- Lerner, R.M. & Korn, S.J. (1972). The development of body build stereotypes in males. Child Development, 43, 908-920.
- Lerner, R.M., Orlos, J.B. & Knapp, J.R. (1976). Physical attractiveness, physical effectiveness, and self-concept in late adolescents. Adolescence, 11(43), 315-326.
- Maloney, M.J., McGuire, J., Daniels, S.R. & Specker, B. (1989). Dieting behaviour and eating attitudes in children. Pediatrics, 84(3), 482-489.
- Moore, D.C. (1990). Body image and eating behaviour in adolescent boys. American Journal of Disabled Children, 144, 475-479.
- Moses, N., Baniliv, M. & Lifschitz, F. (1989). Fear of obesity in adolescent girls. Pediatrics, 83(3), 393-398.
- Nylander, K. (1971). The feeling of being fat and dieting in a school population. Psychologica Scandanavica, 3, 17-26.
- Petersen, A.C., Crockett, L., Richards, M. & Boxer, A.M. (1988). Measuring Pubertal Status: Reliability and validity studies. Journal of Youth and Adolescence, 17, 117-133.
- Richards, M.H., Boxer, A.M., Petersen, A.C. & Albrecht, R. (1990). Relation of weight to body image in pubertal girls and boys from two communities. Developmental Psychology, 26, 313-321.
- Richards, M., Casper, R. & Larsen, R. (1990). Weight and eating concerns among pre and young adolescent boys and girls. Journal of Adolescent Health Care, 11, 203-209.

- Rosen, J.C. & Gross, J. (1987). Prevalence of weight reducing and weight gaining in adolescent girls and boys. Health Psychology, 6(2), 131-147.
- Rosenberg, M. (1965). Society and the adolescent self-image: Princeton: New Jersey: Princeton University Press
- Rozin, P. & Fallon, A. (1988). Body image, attitudes to weight and misperceptions of figure preferences of the opposite sex: A comparison of men and women in two generations. Journal of Abnormal Psychology, 97(3), 342-345.
- Salmons, P.H., Lewis, V.J., Rogers, P., Gatherer, A.J.M. & Booth, P.A. (1988). Body shape dissatisfaction in schoolchildren. British Journal of Psychiatry, 153 (Suppl. 2), 27-31.
- Seligman, J., Joseph, N., Donovan, B. & Gosnell, M. (1987, July). The littlest dieters. Newsweek, pp 48.
- Staffieri, J.R. (1967). A study of social stereotype of body image in children. Journal of Personality and Social Psychology, 6, 101-104.
- Stager, S.F. & Burke, P.J. (1982). A reexamination of body build stereotypes. Journal of Research in Personality, 16, 436-446.
- Story, M.D. (1979). Factors associated with more positive body self-concepts in preschool children. The Journal of Social Psychology, 108, 49-56.
- Striegel-Moore, R.H., Silberstein, L.R. & Rodin, J. (1988). Towards an understanding of risk factors for bulimia. In Hetherington, M.E. & Parke, R.D. (Eds.), Contemporary Readings in Child Psychology (pp. 66- 96). New York: McGraw-Hill.
- Stunkard, A.J. (1981). Adherence to medical treatment: Overview and lessons from behavioral weight control. Journal of Somatic Research, 25(13), 187-197.

- Stunkard, A.J., Sorenson, T. & SCHWABINGER, F. (1980). Use of the danish adoption register for the study of obesity and thinness. In S. Kety (Ed.), The Genetics of Neurological and Psychiatric Disorders. (pp.115-120). New York: Raven Press
- Taylor, N. (1989). The relative impact of physical, social-cultural, and personality influences on moderate dieting behaviour. Unpublished manuscript, Trent University, Peterborough.
- van Strien, T., Frijters, J.E.R., Bergers, G.P.A. & Defares, P.B. (1986). Dutch eating behaviour questionnaire for assessment of restrained, emotional and external eating behaviour. International Journal of Eating Disorders, 5, 295-315.
- Wardle, J. & Beales, S. (1986). Restraint, body image and food attitudes in children from 12-18 years. Appetite, 7, 209-217.
- Zakin, D.F., Blyth, D.A. & Simmons, R.G. (1984). Physical attractiveness as a mediator of the impact of early pubertal change for girls. Journal of Youth and Adolescence, 13(5), 439-450.

**Appendix A: The Appearance Scale**



Appendix B: Structured Interview

1. Height \_\_\_\_\_ 2. Weight \_\_\_\_\_

3. Age \_\_\_\_\_ 4. Sex \_\_\_\_\_

5. Grade \_\_\_\_\_

6. Which of these figures would you like to look like?

7. Which of these figures looks most like you?

8. Why?

9. Have you ever wanted to be thinner?

10. Why?

11. Have you ever tried to lose weight?

12. What did you do?

13. Anything else?

14. Does it work?

15. How can you tell?

16. How often do you try to lose weight?

17. What made you decide to lose weight?

18. What does diet/dieting mean?

19. Has anyone in your family been on a diet to lose weight?

20. Who?

21. Anyone else?

22. What do they do?

23. Have any of your friends been on a diet to lose weight?

24. What did they do?

25. Anything else?

Appendix C: Consent Form

Dear Parent or Guardian,

We request the participation of your child in a study of the dieting concerns and behaviours of children. Students will be individually interviewed for approximately ten minutes. All records will be anonymous.

I agree that my child \_\_\_\_\_ will participate. \_\_\_\_  
(child's name)

I prefer that my child \_\_\_\_\_ not participate. \_\_\_\_  
(child's name)

Thank-you,

Mrs. N. Scales  
B.Sc.

Dr. D. Hart  
Phd.

\_\_\_\_\_  
Signature of Parent/Guardian

# Appendix D: Check for Agreement of Categories

## Instructions:

Please classify the subject's responses into the following categories:

1. cosmetic: responses having to do with appearance only
2. health: responses reflecting fitness, activity, sport
3. interpersonal: responses involving other people directly or indirectly
4. emotional: responses reflecting specific feelings about oneself
5. don't know: responses of don't know
6. other: responses that cannot be classified elsewhere

## Why (do you prefer the figure you chose)?

|                           |                       |
|---------------------------|-----------------------|
| nicer to live being thin  | skinnier              |
| fit through skinny places | fat is ugly           |
| fat is unhealthy          | run faster            |
| normal is better          | skinny looks nicer    |
| thin better for sports    | don't know            |
| clothes fit better        | don't like too skinny |
| like average size         | fatter is healthier   |
| figure problem            | fat gets teased       |

## Why (do you want to be thinner)?

|                           |                      |
|---------------------------|----------------------|
| don't want to be too big  | fat is funny         |
| get called "pig" & teased | be taller            |
| want to lose weight       | think I'm too fat    |
| look better in clothes    | don't know           |
| skinny is prettier        | fitness              |
| normal is nicer           | don't like what I am |
| like to be thin           | want to be a model   |

What made you decide to diet?

|                                |                    |
|--------------------------------|--------------------|
| relative's idea for me to diet | don't know         |
| couldn't keep up with others   | thought I was fat  |
| own idea to lose weight        | like losing weight |
| look like a model in video     | nutrition class    |
| thin healthier for sports      | have clothes fit   |
| friends are slimmer            |                    |

Please classify the subject's responses into the following categories:

- |                       |                    |
|-----------------------|--------------------|
| 1. exercise           | 5. diet foods      |
| 2. eat less           | 6. weight watchers |
| 3. eat healthy        | 7. don't know      |
| 4. eat less junk food | 8. lose weight     |

What do they (family friends) do (to diet)?

|                  |                      |                 |
|------------------|----------------------|-----------------|
| exercise         | no evening eating    | no snacks       |
| no sugar         | eat diet foods       | not eat much    |
| drink diet coke  | don't drink alcohol  | eat good foods  |
| less junk food   | eat less red meat    | weight watchers |
| don't know       | eat certain foods    | drink milk      |
| no fatty food    | drink doctor's drink | take diet pills |
| eat low-cal food | watch what they eat  |                 |

What does diet/dieting mean?

|                |                           |                 |
|----------------|---------------------------|-----------------|
| lose weight    | don't eat sugar           | don't eat candy |
| eat healthy    | no salty food             | not gain weight |
| get slimmer    | go from fat to skinny     |                 |
| stop eating    | not eat certain things    |                 |
| watch calories | eat low-cholesterol foods |                 |







