



EXAMINATION OF A SELF CONCEPT CONSTRUCT
IN OVERWEIGHT AND NON-OVERWEIGHT
ELEMENTARY SCHOOL-AGE CHILDREN

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ACKNOWLEDGMENTS

In retrospect of having completed any major project, it is necessary to make some statement regarding that project and those significant others who have, in some manner, exercised influence. The primary statement of this writer is that this adventure into being temporarily un-ok was undertaken and completed by me, for me. That said, the following statements will serve, in some small way, to offer my thanks and acknowledgments to these persons:

Warren Howse, who, as a nine year old, was the very first to hint that something was awry in my corner of the educational world. As a learning disabled child who came so close to "falling through the cracks" of the system, somehow, he caught my attention.

Dr. A. T. Clarke, McNeese State University, who for many years served as a worthy advisor, encouraged me to strive to be "right" in word and deed, and who has been my friend.

Dr. John Young, McNeese State University, who convinced me that I, even I, could survive STATISTICS.

Dr. Paul Warden, Oklahoma State University, for the constant reminders to "remember Thomas Merton" and "without pain there is no growth"; and, for the guidance and the care.

Dr. David Lane, Oklahoma State University, for helping to teach me that life is comprised primarily of compromises and that the ability to compromise is, rather than weakness, a mark of maturity.

Dr. Randy Koetting, Oklahoma State University, for his scholarship, encouragement, and most of all, his humor.

Dr. Katye Perry, Oklahoma State University, for statistical advice and the constant encouragement to endure.

Susan Law, Ph.D., and fellow student, who was a constant source of cheer and encouragement (there were some high points and there were some low points!). Of these degrees, we can truly say, we earned them, and yes, we did it their way (and now, does that mean no more hoops?).

Charlene Lingo, fellow student, wonderful friend, and surrogate mom who was a constant support and listener. It was she who refused to stop patching the cracks even when I thought the damage was irreparable.

Phyllis Edwards, who has, for many years, been the best of friends and for whom "thanks" in words is hardly appropriate.

Dr. Deborah Kundert, Oklahoma State University, who has been exemplary in scholarship and professionalism in directing the writing of this dissertation, has always managed to be "real", and has truly been someone with whom I have laughed and (literally and often) cried and grown.

Sir Hugh McDougall, who was a better neighbor and a far dearer friend than I could have hoped to find, had I looked. Throughout this adventure he held the unique position of living across the hall and thus, was always there. Through it all, he continually encouraged me to celebrate "me" and he savored with me the small successes along the way. I am left to wonder--how does one thank someone who "would rather have missed dinner than have missed Chapter

One"?

Dr. Jerry Whiteman, the Mentor, for the encouragement to "fly", and for the assistance in my making the discovery that flying is worthwhile only when it is done with one's own wings.

And finally, my Dad, who, beyond always being a ready (emergency) banker, has, more through his actions than his words, made me believe that I am free to take on any challenge and that I am free to be who and what I am.

For all that all that you have been and for all that you are-- thank you--and I think that now, Susan, Charlene, Phyllis, Deb, and Hugh, at last, I am ok.

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CHAPTER I

INTRODUCTION

One of the most serious health problems in the United States today is obesity. The latest estimates indicate that up to 34% of the adult population is obese (Lantz & Wampler, 1978). In 1980, Feig estimated that up to 40% of American school-age children were overweight. Obesity has been found to be present even in nursery school populations (Ginsberg-Fellner, Jagendorf, Carmel, & Harris, 1981). Wolff (1978) reported that 80% of individuals who were overweight as children became overweight as adults. Findings of other researchers (Brownell & Stunkard, 1978; Coates & Thoresen, 1978; Garn & Cole, 1980) have also indicated that obesity is frequently associated with excess weight in the individual as a child. Accompanying these statistics is an increasing awareness that overweight and/or obesity is not only a physical disorder, but is, as well, a disorder with serious implications for social and emotional development (Strauss, 1981).

Collipp (1980) stated that asking questions as to why children become fat has yielded few answers. Khan (1981) described obesity as "confusing, difficult to characterize and difficult to define" (p. 771).

Traditionally, obesity has been viewed as weight in excess of 20% of expected body weight (Heston, 1983). Overweight, or heaviness, has been defined as having a weight that exceeds the amount calculated in standard height-weight tables (Werner, 1976). Currently the

standard tables have been replaced in the practice of pediatrics by growth curve percentile charts. The growth curve charts for boys and girls list percentile rankings for height, weight, and age (Hammill, Drizd, Johnson, Reed, Roche & Moore, 1979). Overweight and obesity, commonly referred to as "fat", viewed as a continuum, have a prevalence and resistance to treatment which has made the disorder one of the most difficult medical and psychological problems to treat (Bruch, 1957; Hiller, 1981; Wolfe, Cohen, & Rosenfeld, 1984).

Cause for concern is warranted; documented health risks for obese/overweight adults, include diabetes mellitus, hypertension, atherosclerosis, renal disease, osteoarthritis, postural deviations, and an increased frequency of cirrhosis of the liver (Heston, 1983). The overweight child, besides having a high probability of overweight adulthood, faces not only medical risks, but also a high probability of body image distortion, poor self concept, and emotional disturbance (Coates & Thoresen, 1978). Meyer and Tuchelt-Gallwitz (1968) stated that overweight is the most common disease in society and is apparent at first glance. Because American culture has placed a pronounced emphasis on "thinness", the overweight child is not only physically, but also socially and emotionally at risk (Wolfe, Cohen, & Rosenfeld, 1984).

Though the term "self concept" has often been used with reference to young children and to the overweight child, it has yet to be conclusively defined. In reference to the word "self" in general, Wylie (1974) reported that the word has, for many years, held various connotations. Rogers (1951) stated:

...the self concept or self structure may be thought of as an

organized configuration of the self which is admissible to awareness. It is composed of such elements as the perceptions of one's characteristics and abilities; the percepts and concepts of the self in relation to others and to the environment; the value qualities which are perceived as associated with experiences and objects...(p. 136).

Self concept has frequently been stressed as one of the most important factors in psychological development (Coopersmith, 1967; Jourard, 1964). How people feel about themselves can have a pervasive effect on their lives academically and socially (Durbin, 1982). Overweight children, in reference to self concept, have likely established negative perceptions of themselves early in life (Strauss, 1981).

Much has been written regarding the relationship of children's attitudes toward others and its effect on social interaction and psychological adjustment (Keat, 1974; Luftig, 1983; Satir, 1974). As an outgrowth of research, the term "others concept" has come to be used to refer to one's perceptions and general expectancies about other people. People with a positive others concept, compared to people with a negative others concept, are more likely to interact with others in a positive manner (Barnett & Zucker, 1975). Wylie (1961) cited evidence from twenty-one studies that on the whole found a positive relationship between self and others concepts. One's acceptance of self and acceptance of others has been stressed as important in effective psychosocial functioning (Adler, 1927; Berne, 1961; Rogers, 1951). To date, no investigation has been made into the others concept of overweight children.

The physical component of the self is body image (i.e., how one views his/her body). While early literature (e.g., Schidler, 1935) reports on body image as perception of phantom limbs of amputees, more recent studies (Nathan, 1973; Stundard & Burt, 1967) have been concerned with body image in the overweight and/or obese individuals. A dearth of information exists on body image in overweight children. Mendelson (1982) examined "body esteem" which was defined by Fisher and Cleveland (1968) to be one aspect of body image, (i.e., one's attitudes and feelings about one's body). Stunkard & Burt (1967), in limited investigations of body image/body esteem, found disturbances in an adolescent population. A critical period for onset of body esteem disturbance has not been clearly determined.

Numerous studies (Jacobs & Wagner, 1981; Lerner & Gellert, 1969; Lerner & Schroeder, 1971; Staffieri, 1967, 1972) have reported on the social consequences for children who are overweight. As well, researchers (Bruch, 1973; Allon, 1979) have indicated that individuals who are overweight are likely to exhibit difficulties in personality adjustment. It is unclear as to which factor is the antecedent and which is the consequence in overweight and these adjustment difficulties.

There is general agreement that overweight children face various psychological penalties (Bruch, 1957; Strauss, 1981). Significant correlations have been reported to exist between attitudes toward the self and attitudes toward the body in adults (Rosen & Ross, 1968). Purkey (1970) reported that children are influenced by the perceived attitude of others toward them. Mendelson (1982) hypothesized that "negative social feedback" leads overweight children to view their bodies less positively than do their non-overweight peers.

The self concept has been stressed as one of the most important factors in adjustment (Coopersmith, 1967; Jourard, 1964). Purkey (1970) reported that the behavior of significant others can create feelings of inadequacy resulting in a low self concept in children. Sherif (1936) demonstrated "Things a person sees and believes about himself are, to a large extent, determined by what others believe about him" (p. 362). In reference to the self concept of overweight children, conclusions have been limited to assumptions and suppositions as a result of reported stereotyping and negative attitudes toward overweight (Lerner & Gellert, 1969; Giancoli & Neimeyer, 1978). No empirical evidence regarding the self concept of overweight children was available for review in the literature.

Galluzzi and Zucker (1973) reported "how a person feels about himself is related to other aspects of his personality and adjustment" (p. 104). Zucker and Barnett (1975) indicated that one's others concept is related to the self concept. However, no investigation has been made to date to examine the others concept of overweight children.

Though numerous investigations concerned with the social, psychological, and emotional consequences of overweight in children were available for examination in the literature, no empirical evidence exists to support the assumption that a low self concept is present in these children. Therefore, the purpose of this study was to examine self concept in overweight and non-overweight elementary school-age children to aid in understanding this area of research.

Hypothesis

The self concept has been reported to be a multi-dimensional

phenomenon. For the purpose of this investigation, components of the self concept utilized to measure attitudes concerning the self were hypothesized and supported through factor analysis by Gordon (1967). These components were: attitudes toward personal autonomy, interpersonal adequacy, physical appearance, academic adequacy, and teacher-school relationships. Based on literature reporting that one's attitudes toward the self are related to one's attitudes toward the body and that one's behavior is in part, a reflection of how one feels about others, the two variables body esteem and attitudes toward others were added to Gordon's multi-trait self concept to form a construct to examine the self concept of overweight elementary school-age children for comparison with the self concept of non-overweight elementary school-age children. The hypothesis for this study was:

There will be a significant difference in the self concept of overweight elementary school-age children and non-overweight elementary school-age children when measured on a self concept construct comprised of the variables of body esteem, attitudes toward autonomy, interpersonal adequacy, physical appearance, academic adequacy, teacher-school relationships, and attitudes toward others.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Obesity is one of the most serious problems in the United States (Lantz & Wampler, 1978). Various estimates indicate that obesity is one of the most challenging of contemporary health problems (Hammar, 1975). While research concerning obesity in the adult population has been extensive (Rodin, 1981; Schacter, 1968; Stunkard & Burt, 1967), research on overweight and/or obese children has been limited.

The existing concern with children and weight has developed as a result of attention focused on adult overweight and a growing awareness that thin children most often become thin adults and fat children most often become fat adults (Eden, 1975; Garn, Clark, & Guire, 1975). It is likely that the overweight youth of today will become the overweight adults of tomorrow (Eid, 1970). Charney, Goodman, McBride, Lyon, and Pratt (1976) cited studies (Abraham & Nordsieck, 1969; Lloyd, Wolf, & Whelan, 1961) which indicated that 75-80% of children (ages nine to thirteen) measured to be overweight remained overweight and/or obese when measured again as adults (ages twenty to thirty-six). The United States Public Health Service (1975) issued a statement to the effect that aside from the overweight child or adolescent becoming an overweight adult, excess weight in the young

is in need of treatment for its own sake.

Mayer (1975) characterized overweight and obesity in childhood and adolescence as one condition and said "the fat child is at a grave disadvantage physically, socially, and psychologically" (p. 197). Furthermore, the individual with onset of obesity occurring during childhood faces the most severe and intractable type of obesity as an adult (Mayer, 1975). The National Institutes of Health Consensus Development Conference Statement Health Implications of Obesity (1985) included the following statement. "Obesity creates an enormous psychological burden. In fact, in terms of suffering, this burden may be the greatest adverse effect of obesity" (p.5).

The study of obesity involves a host of difficulties. Knittle (1975) appropriately labeled the disorder as a "multi-factorial syndrome" (p. 219). Etiologies listed by Knittle (1975) included "genetic defects, caloric intake imbalance, derangement of glucose and fat metabolism as well as a multiplicity of problems engendered by endocrine disorders" (p. 219). Other sources (Bruch, 1940; Isbitsky & White, 1981) reported other factors: lack of physical activity, history of overweight, dependence on external cues, eating behaviors, and personality characteristics. General consensus would seem to hypothesize that these factors can emerge to create an obese condition either singularly or in various combinations. According to Knittle (1975), it is likely that these factors form a continuum in affecting the degree of overweight in the individual.

Little is known about childhood obesity. This paucity of research can be traced, perhaps, to the fact that no exact definition of childhood obesity exists. Also, a clear line of demarcation between over-

weight and obesity in children has not been established. Several sophisticated measurement techniques have been developed, but as yet, no simple, appropriate standards have appeared (Garn, Clark, & Guire, 1975).

This review of the literature will be concerned with examining the various definitions and causes of overweight in general. Further examination will focus on the characteristics and inferred consequences of excess weight in children. That is, what are the characteristics and physical, social, and psychological consequences associated with being a fat child? The chapter concludes with a discussion of self and others concepts and body esteem as variables of interest in investigating the effect of weight on children.

Definitions of Overweight/Obesity

Overview

The overweight/obesity continuum is a complex phenomenon with a variety of causes and consequences. Given the current state of the art, the continuum is not yet sufficiently understood (Cahnman, 1968). Investigations into overweight and obesity are legion. In this review of overweight and obesity and the various elements contained therein, one factor has consistently emerged; there are, both within and across disciplines, a wide variety of definitions for overweight and obesity. The definitions are accompanied by a number of criteria for use in determining the condition(s). Werner (1976) reported that the terms are not synonymous, but that differentiating between the two is difficult. Cahnman (1968), from a sociological perspective, stated "...the difference (in obesity and overweight) is blurred in interactional

situations...therefore the terms may be considered as synonyms and used interchangeably" (p. 284). There is no established standard at which point overweight becomes obesity. Newton (1976) reported that definitions appear to be arbitrary, change from study to study, and are dependent on the criteria utilized in measurement.

A discussion of the various definitions of overweight/obesity is a necessary first step in reviewing the available literature on the effect of overweight on children. These definitions are grouped according to the following dimensions: excess accumulations of fat, appearance, behavioral, skinfold measurement, body density, height-weight tables, and growth curve percentiles.

Excess Accumulations of Fat

Overweight, defined by Bruch (1957), was "a deviation of body build characterized by excessive accumulations of fat" (p. 13). As a physician, Bruch, in extensive work concerned with the physiology of weight, utilized height-weight charts for the classification of obesity; however, in many cases, subjective, clinical judgment was used in place of standard height-weight charts to determine overweight. It should also be noted that the populations studied by Bruch were, in most instances, in treatment for some form of pathology. Fox, Rotatori, Macklin, and Green (1983) also defined obesity as excessive body fat; the child weighs too much for his/her height.

Appearance

Mayer (1975) stated "perhaps the best definition of obesity is simply that an obese person is too fat for his or her own good"

(p. vii). Simpler yet, Eden (1975) preferred "eyeballing" the child; if the child looks fat, he/she is fat. This idea was based on the notion that weight in excess of height-weight charts does not always mean that the child is fat. Since the body is composed of two components, lean body mass (muscle, bone, and water) and adipose tissue (fat), the obese child's body contains these components in disproportionate amounts. As such, there is no ideal weight, therefore, the definition rests with the results of "eyeballing" the child by the physician.

Behavioral Definition

From the behavioral perspective, "obesity is an excess of body fat resulting from an imbalance between caloric input and expenditure; this imbalance is attributable to overeating and/or inactivity" and only in rare cases can obesity be attributed to other causes (Foreyt & Goodrick, 1981, p. 573). From this perspective focus is on the act of eating and weight is defined as percentage of body fat which is indicative of the relationship between dietary input and activity output. In diagnosing obesity, both body fat and activity must be taken into account. While obesity is most often based on a high caloric/low activity ratio, it is also possible for an excess of body fat to exist with a high caloric/high output ratio.

Triceps Skinfold Measurement

The Ten State Nutrition Survey (1972), conducted under the auspices of the United States Department of Health, Education, and Welfare (USDHEW), defined obesity in terms of a triceps skinfold value. The

underside of the upper arm is measured in millimeters by a measuring instrument. Coates and Thoresen (1978) described the standards used for measurement in this study as "arbitrary measurement", since no justification was cited for the use of the specific values utilized in the study. It is interesting to note that the skinfold technique lacks standardization for children and has questionable reliability and validity (Foreyt & Goodrick, 1981).

Body Density

Another method for estimating body fat is one involving both physical and chemical measurement of body density or body water. This technique is used infrequently due to the unavailability and extreme expense of the equipment.

Height-Weight Tables

The Second Ross Roundtable on Critical Approaches to Common Pediatrics Problems, a document produced by Ross Laboratories (1971), addressed the issue of defining overweight and obesity in children. After examination of both the numerous definitions and various measurement techniques in the field, the conclusion of this report indicated that, in view of the many difficulties inherent to the various methods and the lack of standardization of these methods, height-weight tables were deemed sufficient for the definition and classification of overweight and obesity.

Hiller (1981) used height-weight tables to define overweight and obesity. The arbitrary point of somewhere between 30-40% was considered to constitute obesity. Overweight extended from 1% above

normal to the nebulous "somewhere" of obesity. Heston (1983) used the standard of 20% above the norm to define obesity. Overweight was considered to be 1-19% above the norm. Garn, Clark, and Guire (1975) were in agreement with the 20% above normal weight definition of obesity, but found 1% above normal weight to be an unacceptable standard for overweight. Eichold (1975), a physician, used standard tables with 40% excess weight as obese.

Growth Curve Percentile Charts

The most recent norms for height and weight for children were prepared as percentile curves for the assessment of growth (National Center for Health Statistics, 1979). These curves were developed from measurements made on large nationally representative samples of children. The growth curves give percentile distributions for "length of stature, body weight and head circumference for age and body weight for length or stature" (Hammill, Drizd, Johnson, Reed, Roche, & Moore, 1979, p. 607). The charts were designed for use in comparing, by anthropometric classification, any child in the United States with the "norm". Measurements between the 25th and 75th percentiles are likely to be representative of normal growth. Placement at the 95th percentile suggests obesity, but such a diagnosis must be accompanied by other criteria as determined by individual physicians. By these standards, overweight would lie between the 76th and 94th percentiles. "Growth charting is a screening and classifying procedure; it is not a diagnostic one", and the diagnosis of obesity must take into account various other factors (Hammill, et al., 1979, p. 635).

Summary of Definitions

From a review of the literature, it is clear that there are currently in existence, a number of definitions for overweight and obesity. No clear line of demarcation between the two conditions has been indicated and some controversy exists in establishing a point at which overweight becomes obesity for adults.

For children, the most current method in use is a growth curve percentile chart, but physicians will not define obesity solely by a cut-off point on a chart. One may infer, then, that physicians, for some unknown reason(s) are reluctant to make a diagnosis of obesity for a child.

Causes of Overweight/Obesity

Overview

In 1931, Newburgh reviewed the literature on obesity and reached the conclusion that "studies...have convinced us that there is only one basic cause of obesity--that it is invariably the result of overeating..." (p. 1660). He ascribed the overeating to the individual's neglect of the "primitive instinct (appetite)" which, over a period of time resulted in a delay in response of the body in indicating that it had been satisfied (p. 1660). Fifty years of research have yielded more complex explanations (Knittle, 1975; Mayer, 1975). It is now hypothesized that there are numerous causes and contributing factors to overweight and obesity (Knittle, 1975). Mayer (1975), a Harvard nutritionist, has stated that "obesity is not a single phenomenon...we now know that there are twelve or fifteen different forms

of obesity" (p. 74). Bruch (1981), a physician and psychotherapist, has indicated that it is beyond belief that millions of overweight persons could be afflicted with the same condition.

The review of the literature yielded numerous hypothesized etiologies which can be grouped into broad categories. These categories are: psychological etiologies including disturbed familial interactions, parental practices, and prevention of mental illness; etiologies based on physical activity or physiological states; social class and ethnic etiologies; biological or genetic origins; and medical etiologies.

Psychological Etiologies

Disturbed familial interactions. Some of the earliest cases of childhood obesity were recorded by Bruch in the thirties. In studying obese children diagnosed as having Froelich Syndrome (an endocrine disorder), it was concluded from systematic observations not that the children had any physical disorders, but that they were voracious eaters and were physically inactive (Bruch, 1940). When overeating was established as the cause of the obesity, the children were placed on restricted diets and a program of increased activity. As case after case resulted in lack of success in weight reduction, apparently due to the lack of cooperation of and between parent and child, Bruch (1940) inferred the presence of psychological disturbance.

The theory of familial disturbance is based on over-feeding. Mothers of obese children feel rejection toward their children and compensate for this rejection by overprotection and excessive feeding (Bruch & Touraine, 1940). From the experienced rejection and the offer

of food as a substitute for nurturance, eating becomes associated with emotional comfort. The mis-cued eating eventually becomes a satisfier for all conditions of emotionality (Bruch, 1981). Bruch (1964) hypothesized that the physiological symptoms accompanying food deprivation are similar to conditions of arousal characteristic of emotional states, (i.e., eating is precipitated not by hunger, but by feelings).

Other parental practices. Eden (1975), like Bruch, places emphasis on early experiences in the development of overweight and obesity. Several parental practices influence eating habits early in life. Among these practices are: feeding the baby when he/she has had sufficient nourishment; feeding solid food too early and insisting that the baby "eat it all"; encouraging inactivity; rewarding the child with food or candy; allowing the child to eat unbalanced meals; and, providing family meals at erratic times.

Protection against mental illness. Another theory hypothesized by Bruch (1958) is that excess weight sometimes functions as a protection against more serious mental illness. Obesity serves as "an alibi for the avoidance of threatening and unacceptable demands, and food indulgence permits the experience of at least a semblance of satisfaction in an otherwise dismal existence" (Bruch, 1958, p. 65). This says, in essence, that the fat person is more mentally healthy than that he/she would be thin.

Etiologies Based on Physical Activity or Physiological States

Physical activity/inactivity. Another cause under investigation

is the imbalance in physical activity/inactivity and caloric intake of overweight/obese children. In 1907, von Noorden (as cited in Bruch, 1940) classified obesity into two types: endogenous (of endocrine origin) and exogenous (an imbalance between food intake and energy expenditure). Porter (1920) inferred inactivity to be the cause in the greater weight gains recorded for a group of school-age children in fall and winter than in spring and summer. Bruch (1940) reported on 160 obese children in which 76% of the boys and 68% of the girls were abnormally inactive. These children were also reported to consume abnormal amounts of food. Fry (1935), in measuring the "fat pads" in children, found that the children did not have a higher caloric intake, but were more often labeled inactive than a normal weight control group. Johnson, Burke, and Mayer (1956) found that physical inactivity, not caloric intake, was responsible for the development and maintenance of an overweight condition. Stefanik, Heald, and Mayer (1959) studied adolescent boys and found lower activity levels in overweight boys as compared to normal weight controls. Bullen, Reed, and Mayer (1964) used motion picture sampling to compare the activity of obese and non-obese girls and results indicated that these subjects, when responding to projective instruments, deemphasized activity and indicated that their weight was a deterrent to participation in physical activity.

In commenting on probable causes of obesity in adults, Mayer (1975) indicated that the level of a child's physical activity is the factor most often responsible for obesity in children and adults. From the preponderance of evidence reported in the literature, the preceding statement would appear to be valid; however, caution should

be exercised in evaluating the reported results. There can be found, in each of the studies presented, some serious methodological flaws. All studies were conducted on limited samples; all were geographically located in the Northeast; most often subjects were non-randomly selected from populations at summer camps, selection from which yielded biased samples. Most instruments utilized were self-report instruments with no checks for accuracy built in. As such, there is question as to the generalizability of the results from these studies.

Although the studies concerning physical activity are, in respect to methodologies, suspect, results from the most recent investigation of the role of activity in health and fitness of children and youth parallel the earlier findings. A 1985 study of youth fitness described as "the most rigorously controlled mass testing study of fitness among children and youth conducted in the United States" indicated that "American young people have become fatter since the 1960's (Ross & Gilbert, 1985, p. 6; Ross, Katz & Gilbert, 1985, p. 19). This study (Ross & Gilbert, 1985) further reported that only about half of American school children are getting enough exercise to build healthy hearts and lungs. The current "fitness boom" in the American adult population has not yet positively affected the children and youth of today. In terms of weight control and fitness, exercise is a major component.

Internality/externality theory. In 1968, Schacter proposed a theory of causation for overweight and obesity; the obese individual is more responsive to external stimuli and less responsive to internal physiological states than normal weight persons. Through experi-

mentation (with adults), Schacter (1968) measured response to salient environmental cues and found that obese persons are more receptive to these cues while lacking the ability to recognize the physiological state of hunger, that is, obese persons eat as a response to seeing food available, not because they are hungry.

After considerable research, Rodin (1981) reported that early conclusions on externality as a cause of obesity to be premature. This conclusion was based on several findings: externality has been found in persons of all weight categories; internal sensitivity to physiological states has been found to be present in obese persons; and, a variety of factors have been identified as causal in the overweight/obesity continuum. The externality theory is now hypothesized to be too simplistic an explanation for a disorder of the complexity of obesity.

In this review of the literature, one study concerned with internality/externality in children was reviewed. In this study, no support for the theory was found (Isbitsky & White, 1981).

Social and Ethnic Etiologies

Another area of investigation into possible causes of obesity has been the relationship between obesity, social class, and ethnicity. Two studies with adult subjects showed a high correlation between social class and obesity (Goldblatt, Moore, & Stunkard, 1965; Moore, Stunkard & Srole, 1962). Studies involving children are few in number. Stunkard, d'Aquili, Fox, and Filion (1972) reported the prevalence of obesity to be nine times higher for lower class girls than upper class girls. Ethnic origin was not investigated. Garn,

Clark, and Guire (1975) reported racial differences at equal income levels; Puerto Rican children were heavier than English children. The Ten State Nutrition Survey (USDEW, 1972) yielded evidence that weight increased in both whites and blacks as income increased but the analysis was not considered conclusive since blacks in the high income range were under represented. No comprehensive study has been conducted to examine the correlation of social class/ethnicity and weight. The National Institutes of Health Consensus Development Conference Statement (1985) has recommended that "studies utilizing cultural and physical measurements in several cultures, including minority, low socioeconomic, and rapidly changing cultures, should be conducted" (p. 14).

Biological/Genetic Etiologies

A common belief is that the tendency to become heavy runs in families (Withers, 1964). Several studies have yielded conflicting findings in regard to the genetic predisposition to obesity (Garn, Bailey & Cole, 1976; Mayer, 1975; Seltzer & Mayer, 1964).

Stunkard (1980) proposed three methods of studying genetic influence on obesity: studying familial resemblance, twins, and adopted children. His investigations yielded inconclusive evidence to attribute obesity exclusively to either genetic or environmental factors. He reported little progress in the study of interactions between these two factors. Collipp (1975), however, has suggested that obesity does run in families and cites the incidence of obese parents producing obese children. The incidence for normal weight parents is 3-7%; for one obese parent and one normal weight parent,

40%; and for two obese parents, 80%. Stunkard and Burt (1967) reported that the prognosis for fat children is poor; the odds for attaining and maintaining average weight as an adult are 28 to 1.

Studies of twins and obesity have been limited in number. Brook, Huntley, and Slack (1975) reported heritability (the amount of variance due to genetic factors) to be $.77 \pm .17$ for a sample of two hundred twenty-two pairs of twins (78 monozygotic and 144 dizygotic). When the sample was divided into age groups, heritability was less in twins under age ten ($r = .52$) than for those over age ten ($r = .98$). Stunkard (1980) cited the results of a 1976 Scandinavian study which found heritability in twins to be .88. In this study, prenatal and early environmental nutrition was ruled out as causal, and therefore obesity in this sample was attributed to heredity.

Reports of correlations between adopted and natural parents' weight and the weight of their children are in question. Withers (1964), a geneticist, reported a significant correlation between natural parents ($r = .59$ for fathers and $r = .34$ for mothers) and children and negligible correlation between adopted children and parents (.11 for fathers and .16 for mothers) in a small sample. From a re-examination of this data, Stunkard (1980) reported that Withers had used a level of significance of $p < .025$. When subjected to the criterion of $p < .05$, the correlation of adoptive mothers and their children was significant. Furthermore, questions are raised by the use of self report measures and a lack of control for socioeconomic variables. Mayer (1975) reported a high incidence of obesity in children with obese natural parent(s), but no incidence in adopted children. Garn, Bailey, and Cole (1976), from a study of 7,230

parent/child pairs, found no significant differences between incidence of obesity in natural parents and their children and adoptive parents and their children. They stated:

...parents and their children share more in common than genes and some parent-child resemblances in stature and other dimensions may reflect dietary habits and learned patterns of energy expenditure and conservation (p. 539).

From limited investigation, it has been reported that the somatotype of the individual, believed to be genetically determined, is a probable influence in the development of obesity (Seltzer & Meyer, 1964; Sheldon, Stevens, & Tucker, 1940). After classifying adolescent girls at a summer camp into somatotypes, Seltzer and Mayer (1964) found:

...obese girls appear to be more endomorphic, somewhat less mesomorphic and considerably less ectomorphic than non-obese girls...endomorphs predisposes to the laying on of fat unless insufficient diet, excessive activity, disease or voluntary weight control supervenes...not all endomorphs become obese but the tendency is there... ectomorphic body types are only rarely subject to obesity and these people may apparently follow the dictates of their appetites without fear of growing fat (p. 683).

Seltzer and Mayer (1964) stated that generalizability of this one study is limited. The researchers did note, however, that the findings are similar to findings in animal studies (Ross, 1974; Schacter & Rodin, 1974) where genetic transmission of obesity has been shown to influence body type.

Although some genetic component does seem to exist in obesity, some familial resemblances and correlations in parent/child weight can be attributed to family social patterns, eating habits and the "psychological milieu of the family" (Collipp, 1975; Withers, 1964, p. 86). Stunkard (1980) concluded "we are confident that many types of obesity are influenced by a multitude of factors and that many of the factors are genes" (p. 69). He further acknowledged that we simply do not yet know how these genetic components interact with the environment in the causation of obesity.

Medical Etiologies

Medical anomalies. The literature yielded numerous medical etiologies for obesity. Collipp (1975) reported the following types and their etiologies. Simple obesity with no apparent underlying causes account for 60-70% of the cases reported. Obesity with increased androgens is typified by increased adrenal androgen which results in taller children with more lean body mass and advanced bone age. This condition accounts for 20-30% of the cases reported. Obesity with increased glucocorticoids is typified by excessive production of cortisol by the adrenal glands and is a mild and reversible form of Cushing's disease. Children with this condition are of normal height and normal bone age. Osteoporosis is not present as it is in Cushing's Syndrome but glucose intolerance is often a problem. Symptoms include purple striae on legs or abdomen and borderline hypertension. Hypothyroidism is evidenced by circulatory problems, a slow pulse, cold hands and feet, retarded bone growth and delayed bone age. Cushing's Syndrome is extremely rare and diffi-

cult to recognize. Children with this syndrome are of short stature, have retarded bone age, moderate obesity, glucose intolerance, hypertension, purple skin striae, truncal obesity with a "buffalo hump", osteoporosis with back pain and vertebral body narrowing. Childhood Leukemia with Cushing's Syndrome is a result of excessive adrenal hydroxycorticosteroids due to central nervous system invasion of leukemic cells causing ACTH production. Mauriac Syndrome is a result of inadequate insulin therapy in diabetes and results in obesity and growth retardation. This condition can be reversed with proper insulin treatment. Frolich's Syndrome is an extremely rare condition evidenced by the presence of a tumor in the hypothalamus area. The condition is accompanied by extreme obesity, visual field defects and eventually papilledema. Pickwickian Syndrome is evidenced by severe obesity accompanied by narcolepsy and is caused by a hypothalamic defect. Prader-Willi Syndrome is a congenital condition and is evidenced by hypogonadism, hypoparathyroidism, hypotonia and obesity. Children with this condition are mentally retarded. There is minimal sexual development at puberty. The obesity is extremely resistant to weight reduction efforts. Klinefelter Syndrome is infrequently found in males and is evidenced by the presence of an extra X chromosome, reduced androgens and small testes development at puberty. Laurence-Moon-Biedl Syndrome is a complicated syndrome accompanied by limited intelligence, syndactyly of fingers bilaterally, incomplete puberty and extreme resistance to weight loss. Pseudohypoparathyroidism is evidenced by moderate retardation, short stature, extreme obesity, shortened fourth and fifth metacarpals, and advanced bone age and numerous other medical problems. Multiple X Chromosomes

(3-5) have been linked to extreme obesity accompanied by mental retardation, short, small hands with deformities, slanting eyes, foot deformities, and congenital heart disease. Other chromosomal anomalies, lacking specific definitions, are evidenced by growth and mental retardation and physical abnormalities.

Adipose tissue cellularity. The most recent investigations into causal factors of overweight/obesity have dealt with adipose tissue cellularity (Newton, 1976). Stunkard (1980) cited a group of researchers at the University of Gothenberg (Sweden) as the originators of the adipose tissue cellularity theory in the etiology of obesity. This theory divides obesity into two distinct types: hypertrophic obesity in which the individual has a number of fat cells which have enlarged; the individual has merely to "empty" the normal number of fat cells to reduce excess weight; and hyperplastic obesity in which the individual has an excessive number of cells which have enlarged; weight reduction is more difficult in that more cells must be emptied. Though conflicting opinions exist on the two theories (one opinion holds that critical periods exist for the development of fat cells; another, that the number may be increased at any time), Stunkard (1980) reported that hyperplasia does more to explain the natural history and intractability of obesity than any existing theory.

Summary of Causes of Overweight/Obesity

From the literature, inference can be made that many factors can create, or assist in creating a condition of overweight or obesity. These factors include genetic, environmental, physiological, and psychological causes. Bruch (1964) is likely correct in implying that

there are millions of reasons why people get fat.

Characteristics of Overweight and Obese Children

Attention has been directed to the problem of excess weight in overweight and obese children based on the assumption that these children will become the obese adults of tomorrow (Coates & Thoresen, 1978; Wolff, 1978). As adults, these individuals will face a variety of serious health problems (Heston, 1983). The United States Public Health Service (1975) has made a statement to the effect that, apart from the risks associated with adult weight problems, childhood and adolescent overweight and obesity is in grave need of treatment for its own sake.

Physical Characteristics

Physically, the fat child is subject to a number of consequences (Jolly, 1976). Usually the child is taller than average "as a result of secondary adrenocortical overactivity, shown by the increased production of seventeen ketogenic steroids" (Jolly, 1976, p. 288). Onset of puberty is often up to one year early. Other physical disorders are genu valgum (knock knees), flat feet, backache, "distended abdomen, ankle pronation, toes which are abducted, kyphosis, and lordosis... large deposits of adipose (fat) tissue on the inner thighs may result in a wide base of support, hampering locomotor movements" (Bruch, 1939; Eden, 1975; Jolly, 1976; Heston, 1983, p. 146). Overweight and obese children are usually non-rhythmical and possess poor motor skills (Mayer, 1975). Mayer (1975) also reported that, with the encouragement of sedentary activity for children (e.g., television viewing) and the

discouragement of physical activity (e.g., riding in an automobile rather than walking), the incidence of obesity in children will rise.

Social Characteristics

Numerous researchers have reported on overweight and obese children. Much of this research has indicated that the stereotypes are strongly negative (Jacobs & Wagner, 1981). Staffieri (1967) reported that children aged 6-10 held "a common stereotype of behavioral/personality traits associated with...endomorphs, mesomorphs and ectomorphs body types" (p. 101). Lerner and Gellert (1969) in investigating body build preferences of kindergarten children found no significant preference overall, but did find an expressed aversion to "chubbiness" in 86% of the sample ($N = 45$). Lerner and Schroeder (1971) assessed words used by kindergarten children to describe "fat and thin children" (p. 179). Results of this study indicated a clear awareness of body build types. Staffieri (1972), from a study of descriptions of ectomorphs, mesomorphs, and endomorphs by 7-11 year olds, found that "clear stereotypic images" were held by the children. Mesomorphs were considered "kind, good looking, best friend, neat and smart", while endomorphs were judged to be "sloppy, stupid, and mean" (p. 216). Staffieri (1972) also found that though the endomorphs were also judged to be "teased" and "lonely" which gives some indication that the children in the sample, even after expressing unfavorable attitudes toward endomorphs, were aware, to some degree, that overweight children are less happy than normal weight individuals (p. 216). Moreover, results indicated that girls, more so than boys,

based peer affiliations on weight conditions.

Socially, overweight children are at risk (Strauss, 1981). "They learn early to become injustice collectors" (Harmettz, 1975, p. 74). Richardson, Hastorf, Goodman, and Dornbusch (1961) reported evidence which indicated that one's physical appearance is a significant influence on how others perceive him/her. In their study of children's reactions to physical disabilities, children were asked to rank order drawings of children with different disabilities. It is interesting to note that not only was obesity included as a disability, but that the drawing of the obese child was consistently ranked last. Alessi and Anthony (1969) in a replication of the Richardson et al. (1961) study found "strong agreement in liking a healthy child best and disliking an obese child the most" (p. 545). In another similar study, Giancoli and Neimeyer (1978) reported on the liking preferences of handicapped and non-handicapped persons. From a group of six drawings (representing a non-handicapped person, four categories of disabilities, and an obese person), subjects were asked to indicate which person they liked best. From forced choice selection, the obese person was selected last by both groups. Young and Avdzej (1979), in a study of behavior and appearance in social acceptance, found that obesity was viewed as an undesirable characteristic and had negative impact on acceptance by peers.

Mayer (1975) reported that in obese children weight becomes an obsession. He further reported that on sentence completion, word association tasks and picture descriptions, obese children have psychological profiles similar to children studied by Allport (1965) in a study of the effects of race discrimination. These profiles

included an obsession with self, lack of autonomy, expectations of rejection which, in turn, lead to social isolation and greater unhappiness. This isolation and unhappiness seems to lead to more overeating, greater inactivity, and a continuation of this cycle of behavior. Strauss (1981) reported that feelings of isolation are accompanied by feelings of inferiority. The overweight child who is non-rhythmical and non-athletic is seldom chosen in athletics and is many times ignored as a friend.

Personality Characteristics

Bruch (1973) hypothesized that particular personality factors could be precipitating factors in the development of obesity. The presence of obesity creates adjustment difficulties for the individual. Theories tracing obesity to adjustment difficulties have been viewed from various psychometric perspectives in attempts to establish a profile of the overweight personality. A simple and basic conclusion was reached; there is, in existence, no one basic personality type by which overweight/obese persons can be characterized (Mendelson, 1982).

Reports in the literature concerning overweight and obese children parallel the comments of Allon (1979), a sociologist, who, in commenting on the consequences of overweight said:

Many onlookers lower fat people from whole and usual people to tainted, discounted people. Stigmatizing the overweight person includes the rejection and disgrace that are connected with a condition viewed both as a physical deformity and as a behavioral aberration. Many

fat people are chastised for their lack of self-control. Over-weight people are often held responsible for their voluntary, self-inflicted disability. Many mortified and ashamed fat people, full of self-disparagement and self-hatred, are trebly disadvantaged: (1) because they are made to feel that they deserve discrimination; (2) because they are discriminated against; and (3) because they come to accept their treatment as just (p. 470).

In an examination of self perceptions of overweight children and adolescents (ages 7-17, male and female), through the use of interviews and open-ended questions, Allon (1979) found recurring themes regarding weight and the stigma attached to being overweight. The themes were divided into eight categories. The individuals indicated that: (a) overweight was the primary focus of all their interactions because of its "blatant visibility"; (b) their weight condition elicited negative reaction from others--they referred to themselves as "ugly, sexually unattractive, bowls of jelly, tents, sand dunes, robin red breast, hippo, elephant, tub and blobs"; (c) their overweight "overwhelmed others, evoking pity, repugnance, and avoidance"; (d) their overweight detracted from their other qualities as a person; (e) they were viewed as unable to participate in "normal" activities; (f) overweight made one deserving of punishment of others and the self in that weight was a personal responsibility; (g) overweight was sometimes viewed as an illness and in need of treatment and merited assistance of others; and, (h) overweight sometimes required one to own one's own responsibility and to enlist the aid of others (pp. 472-474).

Psychological Characteristics

Although much has been said concerning the prejudice and discrimination toward the overweight, the psychological adjustment of overweight and obese children has not been thoroughly investigated (Sallade, 1973). There is general agreement that a variety of psychological penalties exist for these children (Strauss, 1981). Bruch (1940) characterized the children as "withdrawn" and "seclusive", as exhibiting overall immaturity and to be possessors of "a sense of helplessness, a conviction of inadequacy and inner ugliness, derogatory and self destructive attitudes that are compensated for by flight into fantasy and day dreams" (p. 270).

Body image/body esteem. Schidler (1935) described body image as the way one's body appears to one's self. Bruch (1957) theorized that this phenomenon develops in children from the integration of sensory and psychic experiences. The child develops the body image through defining the boundaries of the self and differentiating the self from the perceptual field. These perceptions change over time and through interaction with the environment. Through these interactions, the child is influenced by the perceived attitude of others toward his/her body. Kolb (1959) reported the interactions to result in viewing the body pleasantly with satisfaction or as unpleasant with considerable dissatisfaction.

Fisher and Cleveland (1968) expanded the definition to include an affective component--one's attitudes and feelings about one's body, (i.e., body esteem). Secord and Jourard (1953) reported that "attitudes toward the body are of crucial importance to any compre-

hensive theory of personality; yet little attention has been given to this subject by psychologists" (p. 343). Though one may infer from the literature on body image in adults that body esteem would be negatively affected by excess weight in children, body esteem has been the subject of limited investigation. Mendelson (1982) hypothesized that "negative social feedback may affect the overweight individual's feelings and thoughts about self and body" which affects both self and body image (p. 10), and Mendelson and White (1982) reported lower body esteem in overweight children than in normal weight children. Other authors (Rosen & Ross, 1968) have found a significant correlation between attitudes toward the self and attitudes toward the body. The earlier work of Secord and Jourard (1953) established support for the hypotheses: (a) "feelings about the body are commensurate with feelings about the self"; and, (b) "negative feelings about the body are associated with feelings of insecurity involving the self" (p. 343).

Mendelson and White (1982) indicated that, though numerous investigations have examined body image in adults, few have been concerned with body image in children. Nathan, (1973) in examining human figure drawings of obese children, found that the children had poor body image and low feelings of worth and competence. Strauss (1981) reported that fat children hold a distorted view of their bodies and are bashful and ashamed of being fat.

Self concept. Self concept has frequently been stressed as one of the most important factors in psychological development (Coopersmith, 1967; Jourard, 1964). How people feel about themselves

can have a pervasive effect on their lives (Durbin, 1982). In spite of the assumed and/or established import of the self concept, there is, as yet, no widely accepted definition. Wylie (1974) reported that numerous definitions exist. Rogers (1951) defined the self concept as:

...the self concept or self structure may be thought of as an organized configuration of the self which is admissible to awareness. It is composed of such elements as the perceptions of one's characteristics and abilities; the percepts and concepts of the self in relation to others and to the environment; the value qualities which are perceived as associated with experiences and objects... (p. 136).

Combs and Syngg (1959) based research on the definition of self concept as "a pattern of conscious beliefs which an individual holds true about himself, a belief with a corresponding value" (p. 6). Edgar, Walden, Moffett, Guertin, and Gentile (1972) formulated the definition "all the things a person feels to be true about himself" (p. 2). Weinhold and Hilferty (1983) utilized, for their research, the definition of "our view of ourselves, our ability, our appearance, our background, our attitudes, and our goals" (p. 2).

How a child feels about him/her self has been recognized as an influence on both academic and social adjustment (DeGenaro, 1984). Combs (1971) reported that the most significant differences between the individual with good social adjustment and those with poor adjustment are to be found in the attitudes about the self. Gordon (1967), in acknowledgement of the nebulosity of the term self

concept, described it to be not a unitary trait, but rather, a multi-dimensional construct which is influenced by a variety of factors.

The spheres of influence on the self concept are numerous. Through continuous interaction with the environment, the child is subjected to the opinions of significant others--parents, teachers, and peers. The conception of the self, then is molded, in part, by the reaction of those "others" to the individual. Purkey (1970) reported that the behavior of significant persons can create feelings of inadequacy and/or unworthiness which can have a crippling effect on the self concept of the child. Sherif (1936) demonstrated that those things an "individual sees and believes about himself are, to a large extent, determined by what others believe about him" (p. 362).

From a review of the literature concerning overweight/obesity in children, one is led to infer and/or assume that a low self concept exists in these children; yet empirical evidence is limited. Maddox, Back, and Liederman (1968), in reporting on the attitude of society in viewing obesity as a physical disability and where the individual is held responsible for his/her condition, found that little positive support is available for the overweight/obese child. Rotter's social learning theory (Rotter, Chance, & Phares, 1972) posited that the obese child, in reaction to negative reactions of others, comes to expect negative responses which come to serve as cues for expected behaviors, (i.e., rejection becomes cyclical). Rotter, Chance, and Phares (1972) hypothesized that the child, living with the expectation of rejection, loses self-esteem and suffers from diminished self concept.

Cahnman (1968) made no distinction between overweight and

obesity and said of the "social phenomenon":

clearly, in our kind of society, with its stress on affluence and upward mobility, being overweight is considered to be detrimental to health, a blemish to appearance, and a social disgrace. What is much less obvious is that it is held to be morally reprehensible (p. 283).

From Cahnman's (1968) sociological perspective, one who is overweight is subject, simply, to gluttony. He/she is considered a social deviant with all the marks that accompany such stigmatization and others, in dealing with the individual:

...fail to accord him the respect and regard which the uncontaminated aspects of his social identity have led him to anticipate receiving; he echoes this denial by finding that some of his attributes warrant it (p. 293).

Cahnman (1968) further reported, in accordance with other studies of handicapped individuals, that the obese child is subject to greater problems with self concept; while physical deformities are viewed by other children as "misfortunes", obesity is considered to be a "defect"; a blind child will be assisted by age-mates while a heavy child will be ridiculed (p. 296). The heavy child is at a grave disadvantage both socially and emotionally because: "he/she is discriminated against; made to believe that he/she deserves this treatment; and he/she comes to accept this treatment as just" (p. 296).

Others concept in children. Although Rotter's social learning theory has posited that the overweight child, after continued rejection, comes to expect rejection and behaves in accordance with these

beliefs and the notion exists that children's conception of the self is significantly influenced by others, there has been, to date, no investigation into determining the feelings of the overweight/obese child toward these others. The self concept of children has been explored extensively in young children, but examinations of attitudes toward others have been limited.

Galluzzi and Zucker (1977) reported "it is readily apparent, however, that how a person perceives and feels about other people will influence his behavior with others, which in turn, should affect many other aspects of his personality and adjustment" (p. 104). Barnett and Zucker (1973) stated that this conception of others is "related to, but sometimes quite different from the self concept" (p. 493). By definition, the others concept is one's general expectancies about other people on a positive to negative continuum (Barnett & Zucker, 1975). To date, no investigation has been made into examining the others concept of overweight/obese children.

Summary of the Literature

From a review of the literature, evidence has been cited concerning several aspects of overweight/obesity in children. These aspects are described in the paragraphs that follow.

There is general consensus in the literature implicating obesity as a major national health problem and as a serious problem for children, due primarily to the evidence that fat children become fat adults. There is in the literature, as well, emphasis on the various consequences associated with being a fat child.

Considerable confusion exists in the study of overweight and

obesity. To date, no definition is available to delineate between the two conditions or to determine a point on the continuum where overweight becomes obesity. Questions raised by the condition(s) are perplexing and no clear cut answers have been found.

Hypothesized etiologies are numerous. One may best conclude that overweight and obesity exist on a continuum and are rooted in complex phenomena which involve a host of variables: physiological, psychological, medical, genetic, and sociological factors.

There presently exists no standard profile of the fat child though frequent reference is made in the literature to the varied and serious social, emotional, and psychological consequences. The overweight/obese child, reported to be subjected to discrimination, prejudice, and stigmatization is inferred to have a low self concept; yet little empirical evidence exists in support of this assumption.

Investigations into body image and/or body esteem of the overweight/obese child is limited in both scope and number. One study was reviewed which reported low body esteem to be present in overweight elementary school children.

The others concept, one's general expectancies toward others, has been investigated in school age children and findings have indicated that both self concept and others concepts are associated with overall adjustment. No investigation has been made to date concerning the others concept of the overweight/obese child.

CHAPTER III

METHOD

Subjects

The subjects were 70 students (all white) from grades 3 through 5 from a school district in northeastern Oklahoma (Table I). The school population, largely middle class, was a reflection of the population of the community. Many residents were employed by a large manufacturing facility located in the city. Demographic information based on USDA - Family Size - Income Scale for Reduced Price Meals (Appendix A) revealed that approximately 2% of the school population fell within the standards for low socioeconomic class, approximately 2% within high socioeconomic class, and the remainder within middle socioeconomic class range.

To obtain the subject sample, two hundred parental permission letters were distributed to all students in grades 3 through 6. One hundred and eighty, or 90% of the letters distributed were returned to the school, all of which granted permission for the child named on the letter to be included in the sample for test administration (Appendix B).

Several conditions necessitated the removal of data cases. Upon examination of responses, all sixth grade data cases ($N = 46$) were removed due to the limited height range of the National Center

TABLE I
SUBJECT CHARACTERISTICS BY GRADE

Characteristics	Grade 3	Grade 4	Grade 5
<u>N</u>	26	19	25
Sex			
Male	15	10	25
Female	11	9	6
Age			
<u>X</u>	8.8	9.8	11
SD	.5	.4	.4

for Health Statistics growth curve percentile charts. All sixth grade subjects' heights exceeded the height ranges on both boys' and girls' charts which extend only through the prepubertal years. Five data cases were removed due to incomplete responses on the instruments. Classification for inclusion in the sample for analyses was made from a population of $N = 129$.

Instrumentation

Three instruments were selected for use in data collection. These instruments were selected to measure attitudes of the child toward the self and others and for the purpose of forming a construct of dependent variables for a multivariate analysis of variance (MANOVA) procedure. The instruments were: The Body Esteem Scale (Mendelson & White, 1982); the How I See Myself Scale (Gordon, 1967); and The Paired Hands Test (Zucker & Barnett, 1977).

The Body Esteem Scale (BES) (Mendelson & White, 1982) is a 24-item, forced-choice (Yes/No) instrument on which elementary school-age children are asked to respond to statements concerning their perceptions of how they look. This instrument is unique in its measurement of self perception and body image in that it is the only instrument of its kind presently available to examine body image/body esteem in children.

As reported by the authors, Mendelson and White (1982), split-half reliability, based on responses of a sample of 36 (15 boys and 21 girls) white, middle-class subjects from a day school in Montreal, Quebec, Canada, was significant; $r = .85$ ($p < .002$). Concurrent criterion related validity with the "Physical Appearance and Attri-

butes" subscale of the Piers-Harris Self Concept Scale (Piers & Harris, 1964) was reported to be .67 ($p < .002$). The items on the scale appear to have face validity in that they ask questions relating to how one feels about one's body and appearance. Responses indicating high esteem are equal in numbers of "yes" and "no" responses. The body esteem score is obtained by counting the number of responses which indicate high esteem (Mendelson & White, 1982).

The How I See Myself Scale (HISMS) (Gordon, 1967) is a self report instrument for the assessment of the self concept. A basic assumption of research concerning the self concept is that it is not a unitary trait (Gordon, 1967). The scale attempts to measure the self concept construct through the use of forty pairs of descriptive statements. Subscales of this construct, determined by factor analysis, are comprised of items relating to the views of the child concerning his/her appearance, relationship with peers, teacher-school relationships, autonomy, and academic adequacy, all of which are measured on a five point Likert scale.

The author cited evidence of content validity based upon the construction of the scale. Items were based on actual responses of children to open-ended questions as first reported by Jersild (1952). Evidence for construct validity is reported in terms of the relationship between the self concept and observed classroom behavior. Significant correlations emerged in a study of a sample ($N = 101$) of school children in Florida. From a point-time sampling approach in observing behaviors, significant correlations obtained ranged from $r = .13$, ($p < .05$) to $r = .88$, ($p < .05$) for total test scores. Subtest reliabilities were not reported in the manual.

The Paired Hands Test (PHT) (Zucker & Barnett, 1977) is a forced choice, projective instrument designed to measure one's general expectancies about other people on a positive through negative continuum (e.g., very warm, very kind, to cruel or hostile feelings). On this instrument, subjects are asked to select from among five statements the one statement most similar to his/her impression of what two hands in a series of twenty pictures may be doing. Scores are obtained from point values assigned to each of five statements describing a picture of two hands in varying positions. A high score is indicative of a positive and friendly others concept, while a low score is indicative of negative and hostile feelings toward others.

Test-retest reliability was reported in the manual on sample ($N = 328$) of fourth, fifth, and sixth grade students in three elementary schools in Terre Haute, Indiana. The correlation, $r = .72$, was significant.

Content validity for the PHT was derived from the construction procedures used in the development of the instrument. Statements included for descriptions of the stimulus pictures were selected from actual responses of subjects to open-ended questions about the pictures. Scale positions of the responses were proposed and subjected to inter-rater agreement.

Construct validity was cited by the authors to be evidenced by the comparison of test scores with behavioral criteria. The authors hypothesized that persons with high others concepts would interact more positively in social interactions than persons with low others concepts. This hypothesis was confirmed by the results of several

studies (Barnett & Zucker, 1973, 1975; Burzynski, 1972). Galluzzi and Zucker (1977) predicted and found that high others concepts were significantly related to psychological adjustment as measured by the California Test of Personality (Thorpe, 1953).

The National Center for Health Statistics growth curve percentiles, from the Division of Health Examination Statistics (1979), were developed "for assessing the physical growth of children in the United States" (Hammill, et al., 1979, p. 607). Clifford Johnson, a co-developer of the growth curve percentiles, (personal communication, July, 1985) indicated that the curves were developed as smoothed percentile curves fitting through points of raw data collected over a twelve year time span with a sample of $N > 20,000$. Standard error of measurement for percentile points, though desirable and theoretically possible, were, due to the lack of availability of a simple random sample and a sufficiently efficient and sophisticated software program, unobtainable in the data analysis. Information regarding the standard error of the means of the raw data was, at one time, available from the National Technical Information Service, but is currently out-of-print and unavailable.

Validity of the charts was established through standardized measurement procedures. These procedures included calibrated "state of the art" measuring instruments (skinfold calipers) and standardized clothing for each age range (personal communication, July, 1985).

The growth curve percentile charts are limited to measurement of pre-pubescent males and females. This limitation exists because data were not collected in regard to presence or absence of "clinical

signs of pubescence" (Hammill, et. al, 1979, p. 627) in those individuals measured who were within the range of the emergence of puberty.

For classification as an overweight individual, physicians generally use the criteria of weight above the 75th percentile accompanied by other factors which vary from physician to physician (i.e., height, age, body type, hereditary factors). For the purpose of this study, in order to obtain a more objective classification, overweight was defined to be weight above the 75th percentile on NCHS (1979) growth charts for weight for height and weight for age.

Procedure

Permission to use a school population was requested of the board of education (Appendix C). Permission was granted by a vote of the school board and was conveyed to this researcher by the superintendent of the district (personal communication, May, 1985). Parental permission letters were delivered to the school secretary who distributed the letters to classroom teachers who, in turn, distributed the letters to all students in grades 3-6.

Returned parental permission letters were collected by the classroom teachers of grades 3-6. On the day of testing, the researcher entered the classroom, was introduced to the class, collected the permission slips and made a statement to the effect that they would be asked to choose responses to some statements which would describe them. They were assured that no one would know which answers they had chosen and that no individual's responses would be identifiable by name. Instruments were distributed and subjects who had not returned permission slips were given an alternate activity

(puzzle) to complete.

The BES was presented with the instructions to respond to each statement by circling either "Yes" or "No" for each item. The HISMS was presented with standardized instructions. Subjects were also asked to circle a statement that best described them (i.e., I am too thin, I am too fat, I am just right). After instructions were presented, the researcher weighed and measured each subject with a standard doctor's scale (Health-O-Meter) and standard yardsticks taped to the classroom wall while subjects completed the instruments independently. Each subject was weighed and measured individually to insure confidentiality.

When the subjects had finished the instruments and the researcher had completed weighing and measuring each subject, the PHT was administered, the procedure was repeated for each of the ten classrooms participating in the study. Instrument administration was completed in two days.

CHAPTER IV

RESULTS

Experimental Design

This study was concerned with existing conditions of weight which is an ex post facto variable; therefore, the procedure for a causal-comparative research design was employed for the investigation. The fixed categorical independent variable was weight with two levels (overweight and non-overweight). The dependent variable was a construct of variables relating to the self concept and others concept of elementary school children. The construct was comprised of these measures: body esteem, perception of others, attitudes toward teacher-school relationships, academic adequacy, physical appearance, autonomy, and interpersonal relationships. Since a review of the literature indicated no prior investigation of this construct of variables, variables were ordered based on the judgment of this researcher. Results were analyzed for significance by examination of the multivariate F and of the univariate F 's. Examination of stepdown F 's could not be utilized since such use is dependent on the availability of a prior ordering of variables from the literature.

Descriptive Data

Subjects

Subjects for the testing of the hypothesis were selected from a population of $N = 129$. Selection for the sample was based on classification by weight according to two factors: height and age. To be included in the sample, subjects were classified as overweight or non-overweight by both measures. Five data cases were discarded due to the classification of underweight. Fifty-four data cases could not be classified consistently on both measures and thus, were discarded. Results yielded a sample of $N = 70$ from which two groups were formed (overweight $n = 23$, or 18% of the population; and non-overweight $n = 47$, or 36% of the population).

Dependent Variables

Variables for the dependent construct were obtained from scores on the three instruments: Body Esteem Scale (BES), How I See Myself Scale (HISMS) and Paired Hands Test (PHT). The BES was scored by counting the number of "yes" and "no" responses. Higher scores indicated more positive body esteem. Scores for the subtests of the HISMS were obtained from sums of the Likert ratings (1-5) for the items which constituted each scale. Higher scores indicated higher ratings. Scores for the PHT were calculated by summing the assigned point values for each of the statements selected by each child. As with the other instruments, a higher score indicated a more positive others concept. After scores were entered into an IBM computer for analysis utilizing the MANOVA procedure

of the Statistical Package for the Social Sciences - X (SPSS-X, 1983). Dependent measure means and standard deviations for the two groups are noted in Table II.

HISMS Test-Retest Reliabilities

Reliabilities for subtest scores for the HISMS were not reported in the test manual; therefore, the test was administered twice, with parental permission (Appendix D), to third, fourth, and fifth grade students in a school located in central Oklahoma (at a two week interval). Demographic information available concerning the socio-economic status of the school population indicated that the sample was representative of lower middle to middle class standing. Ideally, a sample more representative of a middle class population was desirable, but the availability of subjects for testing was limited to this population. Reliabilities for the subscales obtained in the form of Pearson Product-Moment coefficients were: Teacher-school relationships, $r = .72$, $p < .001$; Physical appearance, $r = .80$, $p < .001$; Interpersonal adequacy, $r = .78$, $p < .001$; Autonomy, $r = .76$, $p < .001$; and Academic adequacy, $r = .79$, $p < .001$ (Table III).

Data Analysis

As presented in Table IV, an examination of the error correlation matrix revealed that the within cells correlations were within the limits of $< .3$ and $< .8$. Correlations within these limits indicated the need for the MANOVA procedure for data analysis.

An examination of the homogeneity of variance covariance matrix (Box M test and \underline{F} (max) test) warranted no concerns regarding homo-

TABLE II
DEPENDENT MEASURE MEANS AND STANDARD
DEVIATIONS BY GROUP

Dependent Measure	Non-Overweight	Overweight
<u>BES</u>	<u>N</u> = 23	<u>N</u> = 47
\bar{X}	16.55	12.13
SD	4.8	5.2
range ^a	4-23	2-22
<u>PHT</u>		
\bar{X}	87.55	83.61
SD	12.0	10.4
range ^b	50-112	64-91
<u>HISMS</u>		
Autonomy		
\bar{X}	30.17	28.78
SD	5.5	8.1
range ^c	19-41	13-47
Interpersonal adequacy		
\bar{X}	63.23	60.91
SD	10.8	12.6
range ^d	43-90	33-81
Physical appearance		
\bar{X}	39.62	37.39
SD	6.3	7.4
range ^e	28-40	24-51
Academic adequacy		
\bar{X}	22.38	21.13

TABLE II (Continued)

Dependent Measure	Non-Overweight	Overweight
SD	4.5	4.8
range ^f	16-30	15-28
Teacher-school relationships		
\bar{X}	21.80	22.91
SD	4.9	6.7
range ^g	11-30	12-29

Total possible score ranges

a 1-25

b 20-130

c 9-45

d 17-95

e 11-55

f 6-30

g 6-30

TABLE III
TEST-RETEST RELIABILITY
COEFFICIENTS OF HISMS

Subscale	<u>r</u>
Teacher-school relationships	.80*
Physical appearance	.80*
Interpersonal adequacy	.78*
Autonomy	.76*
Academic adequacy	.79*

* p < .001
n = 32

TABLE IV
 ERROR CORRELATION MATRIX
 FOR MANOVA PROCEDURE

	TS	AA	PA	IA	A	PHT	BE
TS	5.52149						
AA	.36771	4.60453					
PA	.25595	.65406	6.67368				
IA	.38680	.64047	.73363	11.37480			
A	.25507	.23584	.30114	.23050	6.45408		
PHT	.13271	.20078	.07671	.19803	-.10030	11.50390	
BE	.31320	.42779	.51659	.34394	.43243	.23626	4.91729

TS (Teacher-school relationships)
 AA (Academic adequacy)
 PA (Physical appearance)
 IA (Interpersonal adequacy)
 A (Autonomy)
 PHT(Others concept)
 BE (Body esteem)

Note: Standard deviations on the diagonals

geneity, multicollinearity, and singularity. Cell sizes, each of which exceeded 20 subjects met the assumption of normality. Linearity was assumed in that the procedure is based on correlation which assumes that a linear relationship exists between variables.

Examination of the analysis of weight groups and the self concept construct revealed a significant multivariate difference for weight ($F(7,62) = 2.26, p < .04$). The largest support for the construct from the univariate F 's was found for the variable body esteem ($F(1,68) = 12.49, p < .001$), as reported in Table V. Examination of the means (Table II) revealed that the non-overweight group responses ($\bar{X} = 16.55, SD = 4.8$) indicated a significantly higher degree of body esteem than did the responses of the overweight group ($\bar{X} = 12.13, SD = 5.2$).

The global strength of association, $1 - \lambda$, indicated that weight accounted for 20% of the variance in the self concept construct. The univariate strength of association, n^2 , for body esteem, indicated that weight accounted for 16% of the variance in body esteem scores. No significant differences were found for the variables of attitudes toward others, autonomy, interpersonal adequacy, physical appearance, academic adequacy, and teacher-school relationships.

TABLE V
MANOVA SUMMARY TABLE

Dependent Variables	Multivariate <u>F</u>	Univariate <u>F</u>
Self concept	2.26*	
Body esteem		12.49*
Others concept		1.82
Autonomy		.71
Physical appearance		.69
Interpersonal adequacy		.71
Academic adequacy		1.72
Teacher-school relationships		.69

* $p < .05$

$\bar{N} = 70$ ($\underline{n} = 23$ overweight; $\underline{n} = 47$ non-overweight)

CHAPTER V

DISCUSSION

Overview

The purpose of this study was to investigate the effect of weight on a construct of variables concerned with the self concept of overweight and non-overweight children (ages 8-11). Children classified as overweight scored significantly lower than children classified as non-overweight on the experimental construct. Thus, it is inferred that weight is a factor in the self concept of children, particularly in the area of body esteem, or, how they affectively view their bodies.

In this chapter, the research question (i.e., Is there a significant difference in the self concept of overweight and non-overweight elementary school children?) is addressed. Explanations and implications of the results will be offered, as well as the limitations of the investigation. Recommendations for further research are also indicated.

Evaluation of the Experimental Construct

Reports cited in the literature indicated that the overweight child is often subjected to discrimination, prejudice, and stigmatization. Harmetz (1975) stated that "they (overweight children) learn early to become injustice collectors" (p. 74). Mayer (1975),

in citing an earlier study by Allport (1965), reported that overweight children have psychological profiles that are similar to children who were subjected to race discrimination. Allon (1979) reported that the results of interviews with overweight children and adolescents indicated that the individuals spoke of themselves as stigmatized and discriminated against. From these reports, this author hypothesized that since overweight children have been frequently reported to be the subject of discrimination, they would be more likely than their non-overweight peers to exhibit a low self concept. Mendelson (1982) and Mendelson and White (1982) reported low body esteem to be present in overweight children. Other researchers (Secord & Jourard, 1953) reported that feelings about the body are reflected in feelings about the self. Galluzzi and Zucker (1977) indicated that the self concept is related to the others concept, or how one views others. Based on these reports, a construct of variables was derived for use in examining the self concept of overweight children. These variables were derived from scores on three instruments (BES, HISMS, and the PHT) and, since no previous ordering was available in the literature, were ordered according to researcher interest based on experience and observation. The variables, in order of examination, were: body esteem, attitudes toward others, attitudes toward personal autonomy, interpersonal adequacy, physical appearance, academic adequacy, and teacher-school relationships. Statistical analysis supported the validity of the construct.

The significant difference obtained from an examination of the construct in two groups of elementary children, when classified by weight, suggests that it may be inferred that weight is a factor in

the self concept of children, as self concept was defined by this researcher. However, an examination of the individual variables of the construct indicated that caution must be exercised in the interpretation of these results. The strongest support for the construct was found in body esteem. Results indicated that the reported body esteem of overweight elementary school-age children was more negative than the reported body esteem of their non-overweight peers. No significant differences were indicated for the other variables.

In interpreting the results of this study, questions are logically raised as to why the overweight children rated themselves lower on body esteem and not on the other variables. In addition, what is the relationship of body esteem to the self in light of the literature; does low body esteem lead to body image distortion; and/or, is low body esteem an antecedent to or the consequence of excess weight? Some of these questions may be answered by the literature, while others are open to speculation and subject to future investigations.

Secord and Jourard (1953), in regard to body image, stated, "...feelings about the body are commensurate with feelings about the self" and "negative feelings about the body are associated with feelings of insecurity involving the self" (p. 343). Furthermore, "...attitudes towards...(the) self are of crucial importance to any comprehensive theory of personality; yet little attention has been given to this subject by psychologists" (p. 343). A review of the literature supports this thesis. Body image in adults has been the subject of limited investigations (Kolb, 1959; Stunkard & Burt, 1967). Yet more limited is the investigation of body image in children. One lone researcher (Bruch, 1957) theorized that the phenomenon develops

in a child as a result of sensory and psychic experiences; the child develops the body image through defining the boundaries of the self and by differentiating the self from the perceptual field. The perceptions change over time and as a result of interaction with the environment.

In 1968, Fisher and Cleveland reported on the effective component of body image, or, body esteem. This component was defined as one's attitudes and feelings about the body. From the literature, one study concerned with body esteem in young children was available for review. Mendelson (1982) hypothesized that "negative social feedback may affect the overweight individual's feelings and thoughts about self and body" (p. 10). Mendelson and White (1982), in reporting the findings of their study, indicated that elementary school children who were overweight had lower body esteem than their non-overweight peers, but the self esteem of these children was not statistically different from the self esteem of their peers. These results are similar to the findings of the present study. Body esteem appeared to be affected by weight, but other factors relating to the self were not.

Nathan (1972) found that obese children exhibited poor body image as measured by differentiation in human figure drawings. Strauss (1981) reported that fat children hold a distorted view of their bodies and are ashamed of being fat. Allon (1979) found that overweight children and adults attached a stigma to being overweight. Therefore, some evidence exists which suggests that overweight individuals are indeed discontented with their bodies. The results of this investigation reflected this discontent in the form of reports of low body esteem, yet other factors of the construct appeared to be unaffected.

Several possibilities exist in making suppositions as to why no differences were found for the other variables. Feelings toward others, attitudes toward interpersonal relationships and teacher-school relationships, and judgments concerning physical appearance are likely developed as a result of reciprocal interactions with others in the environment. It is possible that the overweight child, in these interactions with others, compensates for being different by attempting to and/or maintaining positive interactions; or, perhaps, he/she is not, as yet, aware of negative responses to the self. It is also possible that, as Elkind (1971) pointed out, "While children are aware of themselves, they are not able to put themselves in other people's shoes and to look at themselves from that perspective" (p. 111); which is to say that the child may be cognitively aware of being overweight (i.e., be aware of the body as fat) while as yet not evaluating the body or interactions with others by the standards of others. Thus, body esteem differed by group, but other variables did not. Okun and Sasfy (1977) indicated that formal theories about the self do not take shape until adolescence, in which case overweight may not yet be relative to evaluations of the self in childhood. Another possibility is that, in these particular children, overweight did not constitute an unacceptable condition. No information regarding family history or incidence of overweight was collected. It is possible that, if one or more family members are overweight, the condition in a child is not regarded as negative, or the child is offered adequate support in terms of self acceptance as a person of worth as opposed to viewing the measure of one's worth as a function of pounds and inches.

No differences were indicated for autonomy, or the ability to function independently. If the child does not perceive the self, for whatever reason(s), to be different from peers, there is no indication that autonomy should be different from that of any group of children within this age range; or, if he/she does perceive a difference, compensation for that difference may take the form of "taking control" and/or maintaining independence in relationships and situations.

Likewise, no differences were indicated for academic achievement. Marsh, Parker, and Smith (1983) reported that achievement may be affected by low self concept and/or negative body image. This report was primarily concerned with low achievement as a result of self concept/body image problems. It is possible that, as problems in these areas are manifested, the overweight child may exert special effort to achieve in academics where one is not judged by physical characteristics, i.e., one may be a social isolate while experiencing success and satisfaction in the safety of academic pursuits. The possibility exists that high achievement in overweight children may be an indicator of low self concept.

In viewing the construct, it is possible that the factors which were measured are not the most important characteristics of self concept in young children; or, perhaps, the variables are not those best suited for measurement of the concept in this age child. The variables are subject to a re-ordering for examination and are, as well, subject to addition and/or deletion of other variables which may be shown to be related to the self concept. And finally, it is possible that these results may have been affected overall by the small sample size. Investigations involving larger groups of

children may yield different results.

Two studies in the literature (Allon, 1979; Cahnman, 1968) indicated that overweight children reported negative feelings about themselves. Data for these reports were not gathered through the use of objective, standardized instruments but were, rather, obtained through the use of qualitative-type methodologies. Taped interviews, open-ended statements, and group sessions were utilized to obtain responses. The responses were coded in categories and counted for frequency. Reports were based on those responses which occurred most frequently. It is possible that, in examining self concept in young children, these methodologies over the course of time, will yield more information than is possible to be obtained by the use of objective instruments. Data gathered over a period of time extending from early childhood to adolescence may add to the limited body of knowledge concerning self concept in overweight children.

Implications

Although generalization of the results of this study is limited and further investigations of self concept and body esteem in young children are needed, several factors appeared repeatedly in the literature. These were: (1) overweight is a health risk for overweight individuals, both adults and children; (2) overweight children quite often become overweight adults; (3) prejudice and discrimination toward overweight individuals is a social reality; and (4) body image distortion occurs in adolescents and adults. This study, as well as one previous study, indicated that body esteem is reported to be lower in overweight children than in their non-overweight peers. In

view of these factors, several implications are presented.

A cursory look at American public education will reveal that the primary focus of education is the development of the cognitive abilities of the child. Findings of the National Survey on Fitness (Ross & Gilbert, 1985) which examined heart rate and lung capacity in elementary school children indicated that attention to the physical fitness and well-being of the elementary school-age child is long overdue. In most instances where physical education classes are held in elementary schools, emphasis is placed on competitive sports, not fitness for all children. Wagner (1985) stated "lifestyle is a major contributive factor to disease and health" and has called for a "wellness approach", or focus on the health, fitness, and development of the total child in the schools (p. 127). Medical experts are in agreement with this concept (National Institutes of Health, 1985). Moreover, both Ross and Gilbert (1985) and Zins and Ponti (1985) indicated that the schools are in the position of having enormous potential in both the fitness and the mental health of children. It is unfortunate that, before this potential can be realized, many issues concerning the role of the school must be examined. These issues, or impediments, include the philosophies and goals of education, attitudes of the tax-paying public, and quite logically, funding by local boards of education.

Numerous sources (Knittle, 1975; Mayer, 1975; Stunkard, 1980; Wolfe, Cohen & Rosenfeld, 1984) have reported the conditions of overweight and obesity to be complex; therefore, programs geared only toward "dieting" and/or in eliminating the problems of the overweight child. Programs must address a number of issues. Zins and Ponti (1985)

proposed a feasible model. This model would provide a "continuum of services to all students" (p. 51). The continuum would have as a goal the prevention of disorders. Components include group screening, client consultation, as well as inservice training and parent education programs. Multi-disciplinary personnel would be able to deal with any issue related to the mental health of children. Another component to be included in the model is the competency building to "strengthen competencies" (p. 54), which would better enable individuals to deal with personal problems. As well, the call for a "wellness approach" (Wagner, 1985) would include a review of school lunch and snack programs. A focus on the health and fitness of the "whole" child is needed.

Limitations

In interpreting the present results, it is important to address the limitations of the study. In terms of population, generalization is limited. The sample consisted of fairly homogeneous groups which were small in number. Subjects for the study were within a limited age range (8-11 years). Furthermore, subjects who were classified as underweight were not included; nor, were sex differences analyzed. The population was restricted to a community in one geographical location. Finally, all subjects were Caucasian.

Another limitation, found consistently in the literature dealing with overweight and self concept, was the lack of standard definitions of the concepts. According to the latest symposium on overweight and obesity (National Institute of Health, 1985), any definition of overweight is arbitrary and subject to limitations. No measure has yet been developed which takes into account all of the factors of weight.

One is simply left with the option to define overweight and to utilize measurement instruments consistent with the definition developed by the individual. Likewise, the self concept has yet to be conclusively defined (Wylie, 1974). For the purposes of this study, overweight was defined to be weight above the 75th percentile on the NCHS (1979) growth curve charts. Self concept was defined to be perceptions of the self and others as measured by three instruments (BES), HISMS, and the PHT). Definitions other than the ones utilized in this study may have yielded different results.

Of the instruments utilized for the measurement of the construct, two were objective, self-report measures (BES and HISMS) and one (PHT) was projective in nature. The self-report measures had no built in checks for accuracy, an inherent problem with such measures. Determination of validity and reliability for projective instruments is difficult (Karon, 1968). As such, caution should be used in interpreting the results and in making inferences about the social and emotional status of people.

The three instruments utilized in this study required that the child, in some way, reflect on him/herself. Children within this age range are classified, in Piagetian terms, to be within the level of concrete operations. That is, they are bounded by physical realities. The child is dealing with "concrete facts in a concrete world" (Pulaski, 1971, p. 67). He/she is not yet able to deal with abstractions which may be necessary in evaluating the self. It is possible that this age child is not capable of making judgments which require differentiation in degrees of response. Studies (e.g., Alessi & Anthony, 1969; Giancoli & Neimeyer, 1978; Lerner & Gellert, 1969), which investigated

children's aversion to overweight, reported such findings based on subjects' ratings of others, an external condition rather than on ratings of the self. The instrument utilized for the examination of the construct necessitated viewing the self, not others, which could account for the difference in the results of this study when compared to previous studies.

Future Research

The results of this study leave many questions to be answered in future investigations. One area to be addressed is weight and self-perception of weight in children. In addition to this investigation of the self concept, a preliminary study based on classifications of weight using physical criteria and self-perception of weight category yielded interesting results. Children were asked to indicate, in response to an open-ended statement, how they viewed themselves, i.e., too thin, just right, or too fat. In interpreting the results of this survey, caution should be exercised since a response to one open-ended statement represents a limited sample of behavior. In addition, the psychometric properties of this method have not been evaluated; therefore, interpretations are necessarily tentative. Preliminary results indicated that 42 of the 47 non-overweight subjects classified themselves as just right (five classified themselves as too thin). However, 10 of the 23 overweight subjects also classified themselves as just right (five did not respond to the statement). Eight of the overweight subjects classified themselves as too fat, the classification which was consistent with their classification based on the physical criteria (growth charts). It was apparent that

the subjects who classified themselves as just right while in reality were overweight: (1) considered size to be irrelevant in the evaluation; (2) considered size to be positive rather than negative; (3) were developmentally immature and unable to view themselves as they really are; (4) desired to present a positive report on the self to the researcher; or, (5) viewed just right to be something measured by factors other than the shape of one's skin. Further research is indicated to investigate the area of self perception of weight and its influence on mental health. Such a study will require the development of a psychometrically sound instrument to assess perception of weight.

In addition, several other areas warrant future research. Replication(s) of the present investigation with larger sample(s) may provide opportunities for further definition and or refinement of the self concept construct. Replications will allow a re-ordering of variables based on future research to determine if such re-ordering will indicate differences in results. Future investigations may be concerned with analysis of the individual variables of the construct. Body esteem may or may not be related to body image distortion. This variable, measured over a period of time may indicate a critical period for the onset of body image distortion and may or may not be related to self concept. Attitudes toward the self and others, or interpersonal relationships, are believed to be formed as a result of reciprocal interactions within the environment. Investigations utilizing surveys, questionnaires, observations, and/or sociograms are warranted to determine the degree to which these variables are related to self attitudes. Academic adequacy may be measured through

the comparison of self attitudes with grades and/or achievement. It is important that achievement and self concept be viewed from two perspectives. It is possible that low achievement may be a result of low self concept, yet, it is also possible, and quite likely that a low self concept as a result of overweight, may be related to high achievement. The overweight child may view academics as "safe ground" and utilize achievement as protection against prejudice, discrimination, and/or rejection. Autonomy in overweight children may or may not be related to dependency and conformity. Locus of control measures may be of use in investigating autonomy in these children.

The collection of data through qualitative methodologies (i.e., taped interviews, open-ended statement, group sessions in which trust has been established between the group leader and overweight children) may yield significant information which may or may not be related to the construct. It is possible that through this method, some individuals may be identified who have, due to family or other influences, come to regard personal worth as something to be measured and valued in ways other than in pounds and inches.

To deal effectively with overweight children, objective, reasonable standards of weight are needed. This responsibility falls within the jurisdiction of the medical community. Likewise, the responsibility for education of the total child lies with the public schools. This responsibility necessarily involves health and fitness as well as development of the cognitive abilities of the child.

Data collected regarding the family history of overweight, as well as family attitudes toward overweight, may yield interesting

results in examining attitudes about the self in the overweight child. As well, data collected on the self concept of the overweight child over a period of years may or may not yield support for the developmental nature of the self concept as theorized by some researchers (Beane, Lipka, & Bonadventure, 1980; Elkind, 1971; Kikuchi, 1968; Okun & Sasfy, 1977). Qualitative as well as quantitative investigations are warranted.

Conclusion

The self concept has been reported to be a significant factor in the adjustment of the child; the well-being of the child has been related to attitudes toward the self and others; therefore, this study examined the difference between overweight and non-overweight children on variables related to the self concept. The results indicated that overweight children scored lower than non-overweight children on the experimental construct. The largest contributor to this difference was self report of body esteem. No differences were indicated for other variables included in the construct. These results suggest the need for future research to examine self concept and adjustment in overweight elementary school children. Several possible avenues for future investigations were presented.

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APPENDIX A

FAMILY SIZE - INCOME SCALE

FAMILY SIZE - INCOME SCALE FOR REDUCED PRICE MEALS

1985-1986 SCHOOL YEAR

This is the income scale used by Miami Public Schools to determine eligibility for reduced price meals.

ELIGIBILITY SCALE FOR REDUCED PRICE MEALS			
HOUSEHOLD SIZE	INCOME		
	Yearly	Monthly	Weekly
1	\$ 9,713	\$ 810	\$ 187
2	13,043	1,087	251
3	16,373	1,365	315
4	19,703	1,642	379
5	23,033	1,920	443
6	26,363	2,197	507
7	29,693	2,475	572
8	33,023	2,752	636

For each additional family member, add \$3,330 to the yearly income level.

Both free and reduced price scales must be part of the public release (Attachment E).

Only the reduced price scale accompanies the application for free and reduced price meals (Attachment C).

APPENDIX B

PARENTAL PERMISSION LETTER

May 12, 1985

Dear Parents,

I am a doctoral student at Oklahoma State University and am currently conducting some research which looks at the height and weight of children and how they view themselves and the world around them. I have been given permission by school officials to ask your permission to ask your child to respond to some statements about him/herself and how he/she feels about school. The answers your child gives will be either yes or no. NO CHILD'S RESPONSES WILL BE IDENTIFIED BY NAME. All information will be viewed as whole group information. The questionnaires to be used are presently in Mr. Sikes' office, should you wish to see them. I will be at the school two days of next week and will be happy to answer any questions, should they arise.

In order for me to carry out this project, I need your permission for your child to participate. Please sign the statement at the bottom of this page and return this sheet to your child's teacher.

Thank you very much.

Lynette Fisher

Lynette Fisher
Oklahoma State University
Graduate Student

Deborah K. Kundert
Deborah K. Kundert, Ph.D.
Oklahoma State University
Thesis Advisor

My child _____ has my permission to participate in the research study. It is my understanding that no child will be identifiable by name and that all scores will be viewed as total group scores rather than as individual scores.

Parent's signature

Please return this sheet to school as soon as possible.

APPENDIX C

PERMISSION REQUEST FOR SAMPLE SELECTION

March 3, 1985

Dr. Jack Reed, Superintendent
Miami Public Schools
5th & G Street SE
Miami, Oklahoma 74354

Dear Dr. Reed:

Having spoken with you by telephone today, I will offer a further explanation of my research project.

I am a doctoral student in school psychology at Oklahoma State University and am in the process of completing my dissertation proposal (Weight and Aspects of the Self in Elementary School Children). I am therefore in need of subjects for data collection. Mrs. Charlene Lingo, an employee of your district who is also currently attending OSU, mentioned to me that your district has five elementary schools which comprise a population from which an adequate sample could be drawn.

My project consists primarily of: (1) Securing the height and weight of each child; and (2) administering three self-report instruments to each classroom (grades 3 - 5). Administering the instruments should take approximately one hour. Should permission be granted, I will provide permission slips and an explanation of the project as well as a guarantee of student anonymity for parents.

Realizing that research in a school district must usually be submitted to the board of education and/or principals, I am asking that this project be given consideration. I will be visiting Miami with Mrs. Lingo near the end of March and would be pleased to visit with you to provide more details. She has informed me that Spring Break for the Miami schools is scheduled for the same week as that for the university; therefore, I will call your office after that time to schedule an appointment.

A brief description of the self-report instruments is included.

Thank you ever so much for your time and consideration.

Yours truly,

Lynette Fisher

Lynette Fisher
3700 W. 19th Apt. C-3
Stillwater, OK 74074

Deborah K. Kundert

Deborah K. Kundert, Ph.D.
Dissertation Chair

Enclosure

Self-report Instruments

The Body Esteem Scale (Mendelson & White, 1982) contains 24 statements to which the child responds with Yes or No and yields an estimate of how the child values his physical appearance. An example:

I like the way I look in pictures. Yes No

The How I See Myself Scale (Gordon, 1967) is comprised of 40 statements to which the child responds on a Likert-type scale. The scale is concerned with measuring various aspects of the "self". Scales proposed for use in this project are concerned with autonomy, teacher-school relationships, and academic and interpersonal adequacy. An example:

I'm very good at drawing 1 2 3 4 5 I'm not much good at
drawing.

The Paired Hands Test (Zucker & Barnett, 1975) is a 20-item, forced choice instrument designed to measure one's perceptions of others on a friendliness/hostility continuum. Children respond to each of 20 slides (a pair of hands in different positions) and select one of five statements which he/she believes represents what the hands are doing.

APPENDIX D

PARENTAL PERMISSION FOR TEST-RETEST ADMINISTRATION

April 11, 1985

Dear Parents,

In order to collect information about the self concepts of children in regard to their life at school for my doctoral dissertation, I must administer an instrument to one group of Oklahoma school children before gathering information for the dissertation. The instrument is quite simple, takes very little time, and no child's responses will be identifiable by name.

In order to administer this instrument, I must first obtain your permission. A copy of what your child will be responding to will be available for your examination in Mr. Carney's office, as will be overall group reports when completed.

Thank you very much.

Lynette Fisher

Lynette Fisher
Doctoral student, OSU

Please return this slip to school (Deep Rock)

My child _____ has my permission to respond to the How I See Myself Scale. It is my understanding that my child's responses will not be recorded by name.

2

VITA

M. Lynette Fisher

Candidate for the Degree of

Doctor of Philosophy

Dissertation: EXAMINATION OF A SELF CONCEPT CONSTRUCT IN OVERWEIGHT
AND NON-OVERWEIGHT ELEMENTARY SCHOOL-AGE CHILDREN

Major Field: Applied Behavioral Studies in Education
Specialization: School Psychology

Biographical:

Personal Data: Born in Lake Charles, Louisiana, April 14, 1949,
the daughter of Simeon E. and Dorothy Clark-Fisher.

Education: Graduated from LaGrange Senior High School, Lake
Charles, Louisiana, in May, 1967; received Bachelor of
Arts Degree in Education from McNeese State University
in May, 1971; received Master of Education degree from
McNeese State University in May, 1974; received Education
Specialist degree from McNeese State University in July,
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Professional Experience: Teacher, Calcasieu Parish Public
Schools, Lake Charles, Louisiana, September, 1971 to
May, 1983; Teaching Assistant, Department of Applied
Behavioral Studies in Education, Oklahoma State Univer-
sity, September, 1983 to December, 1985; Psychometrist,
Stillwater Public Schools, Stillwater, Oklahoma, 1985-86.

Member of: American Educational Research Association;
Association for Children with Learning Disabilities,
Kappa Delta Pi; National Association of School Psycho-
logists; Oklahoma Association for Children with Learning
Disabilities; Oklahoma School Psychological Association.