

AN ABSTRACT OF THE THESIS OF

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Title: A CORRELATION STUDY OF SELF-BODY CATHEXIS OF OBESE  
WOMEN AND THEIR ATTITUDES TOWARD PHYSICAL ACTIVITY

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Dr. Charlotte L. Lambert

The purpose of this study was to investigate the relationship between the self-body cathexis of obese women and their attitudes toward physical activity. Fifty inventories were used for the research in this project. The volunteer subjects' ages ranged from 18 to 45 with a mean age of 28.9 years. The subjects' weight ranged from 20 percent to 120 percent over desirable weight. The females were chosen on the basis of their current weight being 20 percent or more higher than their desirable weight, according to the chart developed by the Build and Blood Pressure Study (48). The measuring devices used were the Jourard and Secord Self-Body Cathexis Inventory and the Kenyon Attitude Toward Physical Activity Inventory.

The data from the inventories were statistically analyzed using primarily the Pearson product moment correlation. The .05 level of significance was selected for rejecting the null hypotheses.

The results of the study revealed that the obese women surveyed had average feelings of satisfaction concerning their self and body images. These women had a highly significant positive relationship between their body and their self image. The women in this study who weighed less had a more positive body image. Also, the less the women weighed the more positive their attitude toward physical activity.

In general these obese women believed that the positive aspects of physical activity included catharsis, a social experience, an ascetic experience, an improvement of one's health and fitness and the pursuit of vertigo. They did not believe that physical activity was an aesthetic experience.

Those women who believed that physical activity was a social experience or to improve one's health and fitness also believed it was for the purpose of catharsis. There were no significant relationships between their attitude toward physical activity and their self or body cathexis.

A CORRELATION STUDY OF SELF-BODY CATHEXIS  
OF OBESE WOMEN AND THEIR ATTITUDES  
TOWARD PHYSICAL ACTIVITY

by

Julia A. Reynolds

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Chapter I

INTRODUCTION

Obesity is a major public health problem in America today. Eichold (18) reported in 1977 that 49 percent of the adult population in the United States is overweight or obese. In one year an estimated two thirds of these individuals try to find a means of weight reduction. Depending upon the criteria used to define obesity, at the present time some 40 to 80 million Americans are plagued with this problem (70).

Schemmel (60) states that Woodhouse in 1976 noted that obesity complicates the clinical management of surgery and pregnancy; worsens the clinical condition in cases such as joint disease; increases the mortality of hepatic, respiratory and arteriosclerotic heart disease; and is identified as a risk factor in the following diseases: adult-onset diabetes, hypercholesterolemia, hypertriglyceridemia, hepatic disease, cholecystitis, female genital malignant disease, abdominal hernia, cerebrovascular accident and peripheral vascular disease. Berchtold (60) in 1977 reported that in a study of 500 obese patients, 88 percent of them exhibited coronary risk factors. The most often reported risk factor was hypertension, followed by abnormal glucose tolerance, hypertriglyceridemia, hypercholesterolemia and hyperuricemia.

Research is continually being done to establish knowledge about how obesity affects health. The Task Force on the Risks, Hazards, and Disadvantages of Obesity (5) suggested the following to be possible hazards of obesity from a medical and a social point of view:

1. Increased risk of cardiovascular disease, particularly sudden death.
2. Relation to the onset of hypertension. The prevalence of hypertension may be increased three to five times in individuals who are 50 percent or more above desirable weight.
3. Increased risk of developing gall bladder disease.
4. Increased risk of developing non-insulin-dependent (usually maturity onset) diabetes mellitus.
5. Increased risk of developing endometrial carcinoma.
6. Aggravation of degenerative joint diseases.
7. Economic and social handicaps.

Rimm, Van Yserloo, and Bernstein in their report of 73,532 obesity-prone women questioned in 1975 found that the rate of diabetes increased with age and the obesity level. The risk of hypertension among obese women was six times higher than among underweight women. As the obesity level increased, the percentage of women reporting a history of high blood pressure increased. An analysis of their data also suggested that both age and obesity have independent roles in their association with gall bladder disease. It appeared that these roles are additive, that is, older obese women have a higher incidence than younger obese women. They also found a relationship between heart disease, gout and arthritis and obesity (58).

According to the Build and Blood Pressure Study (49), obese individuals have a greater than 30 percent chance of dying from coronary artery disease and a greater than 50 percent death rate

from many other diseases. There is only limited understanding of the pathophysiology of obesity and even less application of physiological principles to weight reduction.

The term obesity comes from the Latin obesus, meaning to devour. In today's research the word "obese" is defined in many different ways. There was general agreement among 91 professionals in a variety of disciplines that persistence in overeating has its basis in unresolved emotional problems and that the overeating serves as a substitute to satisfy other needs (5).

The "Midtown Manhattan Study" (5), surveyed 110,000 adults ages 20 to 59, showed an association between socioeconomic status and the prevalence of obesity, particularly among women. Within the study socioeconomic status was estimated by measuring factors dealing with the social class of the individual or family. The factors were family income, family's housing, the education of the adults, and the family's total source of income. Thirty-two percent of the men and 30 percent of the women in the lower socioeconomic group were obese in contrast with 16 percent of the men and five percent of the women in the upper socioeconomic group.

Goldblatt (23) investigated 1,660 obese adults in relation to several social factors. It was found that obesity was six times more common among women of low status as compared to those of high socioeconomic status. There was also a suggestive relationship between ethnic and religious factors and obesity.

It has been reported that lack of exercise is the most

common cause of becoming overweight and the prescription of exercise is important to its medical treatment (5,18,29,41,52). Harrison (29) stated that obesity happens when the individual's diet produces more fuel than is needed to maintain body functions and to meet the energy requirements of daily activities. The excess is stored as fatty tissue and is gradually increased to an undesirable amount.

Harris (28) worked with three groups using a self-control behavior modification technique. The groups were all similar, but group one used a written contract, group two concentrated on eating habits and exercise behavior and the third group was the control group. Members in all three programs lost weight during a 12 week program, with no significant difference between groups. But after a seven month follow-up the subjects in the two behavior modification groups lost more than the control group and the group that added exercise had the greatest loss overall.

According to Algozzine and Salvia (1), appearance is an important stimulus in the psychological development of children, and as such, has an effect on an individual's response to his environment as well as the environment's response to that individual. Harrison (29) stated that "Fatty, Tubby, Fats, Fatso" and other unkind nicknames accompany obese children through their school years. Such comments, endlessly repeated, cannot help but result in hurt feelings, inferiority complexes and social withdrawal by the recipients. Studies published from several different laboratories (5) would indicate that obese individuals respond to their environment in a manner which is quite different from

that of normal-weight people. Obese individuals are frequently hostile, frustrated, and often severely depressed rather than conforming to the stereotype of "fat and jolly." The goal of weight loss is seen as a panacea to alleviate the multiple problems in their psychosocial and vocational lives. Weight reduction frequently causes these feelings to surface so that the thinned obese individuals find adjustment to their feelings extremely difficult and control of weight almost impossible. Achievement of weight loss should not be seen as the sole end-point for therapy, but rather treatment of the basic underlying emotional problems must be incorporated into the complete program.

It should be noted that obese individuals should be medically checked for: diabetes mellitus, hypothyroidism, primary Cushing's syndrome, defects of female or male sex hormones, hyperinsulinemia and reactive hypoglycemia. The likelihood that such disorders are responsible for obesity is slight (51). In 1964 it was estimated that only one or two out of every hundred overweight persons had an endocrinologic or metabolic disorder (32).

#### PURPOSE

The purpose of this study was to investigate the relationship between the self-body cathexis of obese women and their attitudes toward physical activity.

## HYPOTHESES

The null hypotheses tested in this study were:

- Hypothesis one: There is no significant relationship between the self cathexis of obese women and their attitude toward physical activity.
- Hypothesis two: There is no significant relationship between the body cathexis of obese women and their attitude toward physical activity.
- Hypothesis three: There is no significant relationship between the self cathexis of obese women and their body cathexis.
- Hypothesis four: There is no significant relationship between age and the self cathexis of obese women.
- Hypothesis five: There is no significant relationship between age and the body cathexis of obese women.
- Hypothesis six: There is no significant relationship between the age of obese women and their attitude toward physical activity.
- Hypothesis seven: There is no significant relationship between weight and the self cathexis of obese women.

Hypothesis eight: There is no significant relationship between weight and the body cathexis of obese women.

Hypothesis nine: There is no significant relationship between the weight of obese women and their attitude toward physical activity.

#### DEFINITION OF TERMS

Attitude: a complex, but relatively stable, behavioral disposition reflecting both direction and intensity of feeling toward a particular psychological object, whether it be concrete or abstract (10,39).

Neurotic: an emotionally unstable individual (6).

Appetite: a psychological desire to eat involving a distinct anticipatory pleasure (6).

Obese: those individuals who are at least twenty percent over desirable weights ( as measured by the Build and Blood Pressure Study of 1959) (48).

Obesity/Overweight: Obesity refers to a surplus in body fat. Overweight refers to an excess in body weight relative to standards for height. Overweight and obesity are often used synonymously (5).

Physical Activity: organized, non-utilitarian gross human movement, usually manifested in active games, sports, calisthenics and dance (39).

Self-Body Cathexis: the degree of feeling of satisfaction or dissatisfaction with the various conceptual aspects

of the self or body parts. (Self concept/Body concept, Self image/Body image) (34).

### Definition of Categories of Items from Kenyon's Inventory

Aesthetic Experience: an activity perceived as possessing beauty or certain artistic qualities (39). Characterizes attitudes of persons whose primary purpose (for participation in activity) is to find beauty and certain artistic qualities in the activity (10).

Ascetic Experience: physical activity consisting of long, strenuous, and often painful training and stiff competition demanding a deferment of many gratifications (39). Characterizes attitudes of persons whose primary purpose for participating in physical activity is to find satisfaction from long, strenuous and painful learning and stiff competition (10).

Catharsis: physical activity perceived as providing a release of tension precipitated by frustration through some vicarious means (39). Characterizes attitudes of persons whose primary purpose for participating in physical activity is to find a release of tension precipitated by frustration (10).

Health and Fitness: physical activity dedicated primarily to the improvement of one's health and fitness (39). Characterizes attitudes of persons whose primary purpose for participating in physical activity is to improve one's health and fitness (10).

Social Experience: physical activity to provide a medium for social intercourse, to meet new people and to perpetuate existing relationships (39). Characterizes attitudes of persons whose primary purpose for participation in activity is to provide a medium for social intercourse (10).

Pursuit of Vertigo: physical experiences providing risk at some time to the participant. Elements of thrill through the medium of speed, acceleration, sudden change of direction, or exposure to dangerous situations (39). Characterizes attitudes of persons whose primary purpose for participating in physical activity is to find an element of thrill or exposure to danger (10).

#### LIMITATIONS

The limitations of this study were:

1. The subjects consisted of fifty volunteer adult females from the states of Washington and Oregon who varied in age and amount of overweight.
2. Evaluation of the degree of overweight of each subject was determined by the person's immediate weight compared to desirable weights as listed by the Build and Blood Pressure Study (48).
3. No evaluation of the subjects' previous or current level of physical activity was made.

4. Individual interpretations of the questions may have influenced the results of the inventory. The inventories' validity depends on the subjects' self report.
5. No history of health or previous degree of obesity was attempted.
6. No evaluation was taken of the subjects' racial or socioeconomic status.

## Chapter II

### REVIEW OF LITERATURE

Obesity has been a concern of research for many years. Researchers continually study the effects of obesity on the physical health of the person; psychologists study the barriers presented to the obese by society; and counselors research methods to motivate clients to lose weight and gain feelings of self worth. Yet obesity is still a leading health problem in the United States.

### ESTABLISHING ATTITUDE TESTS

Attitudes have been defined as complex, but relatively stable, behavioral dispositions reflecting both direction and intensity of feeling toward a particular psychological object, whether it be concrete or abstract (10,39). Edwards defined attitudes as the degree of positive or negative affect associated with some psychological object. A psychological object, according to Edwards, means any symbol, phrase, slogan, person, institution, ideal, or idea toward which people can differ with respect to positive or negative affect (17).

Since researchers found it difficult to place a degree of positiveness or negativeness to responses obtained by direct questioning or observations, attitude scales were developed. These attitude scales, given under controlled conditions and with

standardized instructions, provide quick and convenient measures which can be analyzed statistically. The attitude scales provide one means of obtaining an assessment of the degree of affect individuals may associate with certain psychological objects (17,38).

Today attitude scales are most often developed by specifying the domain of the psychological object in question and defining its area of content, selecting or developing stimuli to represent the domain and formulating scales, using either judgment or response methods with some selected sample (38).

#### ATTITUDE TOWARD PHYSICAL ACTIVITY INVENTORY

The term "physical activity" as used in this paper is considered to be organized, non-utilitarian (in an occupational or maintenance sense) gross human movement, usually manifested in active games, sports, calisthenics and dance. Gerald Kenyon established an inventory concerning attitudes toward this type of physical activity (39). Physical activity should be differentiated from the term "physical education", which is a subject taught in schools. There are numerous inventories concerning attitudes toward physical education. They were not considered to be a part of this study and were therefore not reviewed in the literature.

Kenyon's model of attitudes toward physical activity and sport characterized physical activity as a perceived social experience, for development of health and fitness, as the pursuit of vertigo, as an aesthetic experience, for catharsis and as an ascetic experience. A seventh dimension, physical activity seen

as chance, was later added to the inventory employing the Semantic Differential scale (36).

Kenyon developed Likert-type attitude statements representative of each of the six dimensions. The female inventory consists of 54 items weighted in the following seven response categories: Very Strongly Agree, Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree and Very Strongly Disagree. The inventory questions of each domain were intermixed throughout the total inventory. The questions were written both positively and negatively to prevent the subjects from answering one response continuously (36).

Kenyon (38) gave the inventory to 353 men and 215 women and found Hoyt reliabilities for each of the six scales ranged from .68 to .89. Further analysis of the inventory results yielded clusters of items clearly corresponding to each of the six domains. Kenyon's inventory using the Semantic Differential scale (not being used in this research) has been shown to be equally internally consistent with Hoyt reliabilities of approximately .85 within each domain.

Kenyon (39) found that females held a more positive attitude than males when activity was presented as a social experience, for health and fitness, aesthetic and catharsis. Men had a more positive attitude toward physical activity when seen as the pursuit of vertigo and an ascetic experience.

Cunningham (12) found that all 667 university freshman and sophomore subjects surveyed had a positive attitude toward physical activity. The females had a slightly more positive attitude than

the males. The females in general believed that enhancement of health and fitness was the most important aspect of activity while the males felt physical activity should provide a vertigo experience.

Mullins (50) surveyed 190 subjects using the Kenyon Inventory and classified their results by race (negro, white), sex and socio-economic level. She found the domains of social experience, pursuit of vertigo, and aesthetic experience were a function of race. Negro subjects had a more positive attitude toward physical activity than white subjects and males more positive reactions than females.

Corbin (10), using Kenyon's attitude test, found results slightly different when comparing women champion basketball players to non-athletes. The basketball players' highest attitudes toward activity were in the ascetic trait. Their lowest rating was the aesthetic category. Corbin found for the non-athlete the opposite to be true; their highest attitudes toward physical activity was in the aesthetic category and their lowest in the ascetic.

Seleen's (65) data taken from 57 women found a significant relationship between women's volleyball skill and their attitudes toward physical activity. Those with measured higher skill had significantly more favorable attitudes toward physical activity.

Thus previous studies have shown differences in attitudes by sex and by level of skill. Kenyon (39) has stated that attitudes toward physical activity are also functions of qualities involving acquired behavioral dispositions, including body esteem, self esteem, need for approval and social values.

## SELF-BODY CATHEXIS INVENTORY

In 1953 Secord and Jourard (63) created a test to evaluate self-body cathexis. Self-body cathexis means the degree of feeling of satisfaction or dissatisfaction with the various conceptual aspects of the self or body. The self-body cathexis is believed to be integrally related to the self concept.

The subjects were asked to indicate things they were satisfied with, things they worried about and would like to change if possible and things they had no feelings about one way or the other. They were to consider 80 items and circle the number which best represented their feelings according to the following scale (63):

1. Have strong feelings and wish change could somehow be made.
2. Don't like, but can put up with.
3. Have no particular feeling one way or other.
4. Am satisfied.
5. Consider myself fortunate.

Secord and Jourard found a .92 reliability for females who took the self-cathexis inventory.

A study in 1954 of 62 undergraduate males by Secord and Jourard (64) found their body-cathexis and actual measured size of the body to correlate significantly beyond the .01 level. They observed that large size was associated with strong, positive feelings toward the respective body parts and small size with weak or negative feelings.

In 1955 Jourard and Secord (34) studied body-cathexis in college women. Their aim was to evaluate the relationship between cathexis ratings for selected body parts and three expressions of the size of those parts: measured size, self estimated size and

self-rating of ideal size. None of the women in the study had physical dimensions that were identical with their ideal self-ratings, and none of the women rated positively all of their body parts. The findings demonstrated, among that sample of college women, the existence of shared ideals of the female figure, with the exception of the bust measurement. It appeared likely to the authors that the restrictive nature of these ideal dimensions was, in some cases, a source of anxiety and insecurity (34).

#### OBESITY'S EFFECT ON THE SELF IMAGE AND BODY IMAGE

Orbach (52) in her discussion of the social dimensions of women who eat compulsively stated that, in general, women moving into society have been trained to occupy a position of relative powerlessness vis-a-vis the men in their social strata. Their image and identity reflect this powerlessness. In this culture, women who are overly endowed with endomorphic tendencies, she believed, are apt to occupy a social role that inhibits the development of a good impression of self.

One way to rebel against this is to become a compulsive eater and in some cases to get fat. To be fat means to be excluded from the mass culture as it is exemplified today in fashion, sports, the outdoor life, dating and dancing. For the overeater, thin represents a scary unknown or perhaps the known of a long ago or not-so-happy time (52).

Stunkard (73) explained the term "body image" as " the picture that the person has of the physical appearance of his body."

Disturbances in the body image may range from "gross depersonalization ...through distorted thoughts and feelings about the body, to distorted perceptions..." Orbach stated that compulsive eaters constantly make negative judgments about their own self and body images (52).

In 1964 Stunkard and Mendelson (73) randomly selected 74 obese persons and of those, studied the psychotherapy record of twenty. They divided the disturbances into three areas: views of the self, self-consciousness in general and self-consciousness in relation to the opposite sex. They found that the main focus for an obese person was the preoccupation with obesity, often to the exclusion of any other personal characteristics. It made no difference whether the persons were talented, wealthy, or intelligent; their weight was their overriding concern and they saw the world in terms of body weight. They sometimes divided society into people of differing weights, and their association with others were largely in terms of that division. They envied those thinner than they and feel contempt for those who were fatter. At the center of that attitude was the appraisal of their own body as grotesque and even loathesome, and the feeling that others viewed it only with horror and contempt.

Stunkard and Mendelson (73) stated that it might be expected that all obese persons would not only have derogatory feelings about their bodies but that these feelings would be a central feature of the neurosis of all emotionally disturbed obese persons. However this was not the case. Body image disturbances did not occur in

emotionally healthy obese persons studied, and they were found in only a minority of neurotic obese persons.

Data established in a study of 18 obese patients by Hamburger (27) indicated that they seriously overate in relation to underlying emotional problems. Sometimes the overeating was a symptom of an underlying psychological illness, sometimes a reaction to an acute or chronic emotional stress, sometimes a substitute gratification for other unsatisfied longings.

Pascatore (55) expressed that obesity early in life prevents the person from developing a comfortable self-concept, that youngsters may not even be able to look in a mirror without feelings of disgust or hatred. He stated that unkind teasing by other children could make an obese child afraid of normal social contacts and suggests to them that they are somehow less worthy than others. Pascatore also believed that body image is an integral part of the self-concept and alterations of the body image will alter the self concept.

Wunderlich (77) administered the California Psychological Inventory to 13 super-obese females, with a mean age of 20, and compared the results with a normative group. The inventory is designed to measure social interaction in non-psychiatrically disturbed populations. Scores of the female subjects supported predicted higher scores on Dominance and Psychological-mindedness. Psychological-mindedness refers to the degree the individual is interested in, and responsive to, the inner needs, motives and experiences of others. The subjects scored lower than the normative

group on Responsibility, Socialization, Communication and Femininity.

A study of 117 female undergraduates was done by means of a paper-pencil test evaluating their perception of normal weight and affect. Both underweight and overweight persons misperceived their weight-related appearance toward their believed normal weight. Overweight respondents had more negative affect scores than other respondents (24).

Dwyer (16) surveyed 446 high school girls and found that obese girls had a much higher level of dissatisfaction than other girls, both with weight and appearance. Most of the girls wanted to weigh less than they actually did.

Karpowitz (35) stated that Falker and Kay in 1971 found a high correlation between body type and self-concept of seventh-grade boys. The normal weight boys had a significantly higher self-concept than obese boys.

Rand (56) compared 84 obese patients with 63 matched normal weight patients, all of whom had been treated by psychoanalysis or psychoanalytic therapy. The goals of the study were: to systematically assess personality characteristics of obese as compared with non-obese patients; to determine the effectiveness of psychoanalysis in treating problems specific to obesity, overweight and alteration of the body image. After 42 months of psychoanalytic treatment a striking decrease in the percentage of obese patients suffering from body image disparagement was found.

The majority of the 55 obese patients disapproved of or were frankly contemptuous of obese people. In evaluating their own

appearance 56 of the obese patients considered themselves unattractive. This compared with 55 of the non-obese patients disapproving of obese people and 11 considering themselves unattractive. This study also showed that 57 of the obese group had no regular exercise program while 38 of the normal-weight patients did exercise regularly. Seventy three of the obese showed "severe" or "mild" body image disparagement (56).

Shainess (66) study of anorexia (thinness) explained that obesity and anorexia had some common body image problems. Shainess elaborated that obese people had misperceptions of their body appearance, often denying the reality of their actual size and refusing to look into the mirror or to be photographed. Often the obese who become thin continue to see themselves as obese. Shainess said that along with this distortion of the body image perceptions goes body function distortion; the anorexic feels full after a few bites while the obese seems to have room for more (66).

Shainess reported four basic eating patterns of the obese:

1. Response to varied emotional situations, such as loneliness or frustrations.
2. Response to chronic tension or frustration.
3. As a symptom of underlying emotional illness, especially depression.
4. Compulsive eating serious enough to be comparable with other addictions (66).

In thoughts toward treatment of the obese Shainess stated:

From a physical vantage point, manipulation of food intake and energy output are the tools of treatment. I express that physicians need to recognize that there are many emotional currents to the overeating problem and help the patient to acknowledge the need for help, at which point they can suggest changes in dietary and life styles; and if the patient is quite disturbed, to recognize that dieting may need to be postponed for a later time. Above all in the treatment of obesity, there

is a need for a consistent, nonderogatory attitude, and a reappraisal of the patient's unrealistic expectations.

Allon (2) studied the stigma of being overweight by observing and interviewing 68 female children ranging from age 7-17. He explained that a negative body image could act as an inhibitor or deterrent in the weight-losing process. For weight-losing to be successful, a person must have a positive self-image or have a degree of self-esteem, or at least not be overwhelmed by a poor body-image and self-image that could be reaffirmed by not succeeding on a diet. It was Allon's belief that obese persons may need to be encouraged to concentrate more on their worthwhile traits, constructive abilities and achievements and less on their weight, in order to build their self-confidence to prepare them for dieting.

Kessler (40) administered four tests to 30 mildly to severely overweight women and 33 women of normal weight. The four tests were: Slade Body Size Estimation Apparatus, Body Cathexis Test, Second Word Association Test and Rotter's Internal-External Locus of Control Test. The results suggested that the obese woman does not accurately assess and respond to her body's needs. Her body image perception is vague, inaccurate and negatively assessed. She tends to turn away from her body and toward external sources of personal control and evaluation.

Body size altered by surgical gastric bypass has been a means for some to improve their appearance. Reich (57), in studying women seeking appearance improvements through surgical means, believed that most requests appear motivated by a conscious desire to conform to current standards of physical attractiveness.

Reich explained that the appearance of the female body has psychological significance both for the individual concerned and for her close contacts. Reich continued to express that although "... surgery is not the solution to the problem of obesity, it may provide the incentive for a determined dietary approach to the problem, as well as the means of restoring shape after gross decrease in bulk of the body."

Silberfarb (67) scored 14 patients undergoing bypass surgery for severe obesity on the Draw-A-Person Test. It was given before the surgery, one year after and at least two years after. The first year after the operation found the body concept was poorer than the preoperative level. The bypass operation seemed to cause a temporary disruption in the stable personality dimension because at the second year test the patient's body concept recovered and had reached at least the preoperative level.

In contrast to the above information, Halmi (26) found from 70 women who were 137 percent overweight that the gastric bypass produced large weight loss with far fewer emotional disturbances than had accompanied earlier weight loss through dieting. Half of the subjects reported an increased feeling of self-confidence.

Schiebel (61) tested 10 super-obese women, age 18-30 years, before and after a bypass operation and found them to be very aware of their dramatic progress in weight reduction but that their emotional response to their appearance and physical characteristics basically was unaffected. In contrast with the

same group, a more positive attitude of the patients' self-esteem and general sense of liking themselves was found. Therefore Schiebel believed that "body image" should be differentiated from "self image."

On the other hand, Leon's (42) results showed that distortions in the perception of one's own body size are significantly associated with age rather than with weight status, at least for younger subjects. His subjects were 33 male and 37 female youngsters ranging from age 8 to 13.

Strain and Strain (69) went on to state that the psychological factors should be evaluated before treatment when individualizing a weight reduction program and also during the weight loss process. Weight loss in itself may cause problems within six of the categories. The Strains believed that loss of weight may cause: fear of the loss of, or injury to, a body part; fear of the loss of love and approval; fear of or loss of control of developmentally achieved functions; separation anxiety; fear of pain; and reactive feelings of guilt and shame.

#### OBESITY AND HEALTH

The Build and Blood Pressure Study of 1959, conducted by the Society of Actuaries, revealed that over 30 percent of adult Americans between the ages of 40 and 60 are more than 20 percent overweight (49). Observations of two high school girls' groups (18) showed that inactivity was a much more important factor than overeating in the development and maintenance of

obesity. Genetic factors, overfeeding babies and neurotic behavior problems all contribute to obesity. The lives of most obese subjects are vicious cycles of weight gains and loss. There is a wide variety of programs to gain the attention of the obese, including reduction programs by dieting, drugs, hypnosis, psychotherapy and surgical intervention. All these have met with varied success.

Even with the growing statistics of obese individuals, Fullerton (20) expressed in her report of 1978 concern with the "over-medicalization" of obesity. She stated that there is...

Over-emphasis on the health risks purported to be associated with all obesity and a misleading under-estimate of the difficulty of changing complex behaviors; over-emphasis on the role of the physician in the management of obesity; and under-estimation of the role that the individual must play in any weight management strategy and the differing values of individuals about overweight and obesity.

Fullerton (20) believed that in the future more clarification must be made about the relation of weight to health by using relative degrees of overweight rather than by continuing to use the single, simplistic category, obesity.

It was reported by Fullerton (20) that there is little risk data on excess mortality of women. There is data on the relation of overweight to endometrial carcinoma, and spotty and inconclusive evidence linking overweight to cancer of the breast. She reported that the United States Department of Health, Education and Welfare study of 1977 associated being overweight with diabetes mellitus, an illness in itself a risk factor of premature death from cardiovascular and renal disease.

Obesity was found to be a consistently associated factor with adult-onset diabetes in the United States. The USDHEW in 1966 reported that being overweight is thought to enhance degenerative joint disease and is associated with the increased risk of developing gall bladder disease. Fullerton believed that the general public is not informed about nutrition, dietary practice, overweight/obesity, energy balance and related health risks.

In 1968 to 1970 the Ten-State Nutrition Survey (TSNS) (21) was taken to include fatfold data from both the triceps and subscapular body areas. The research consisted of 40,000 infants, children, adolescents and adults including blacks, whites, Puerto-Ricans, Mexican-American and others. It was found that in both sexes there was a late preadolescent gain in fatness. Traditional adolescent gains were evident, especially in the female who does not commonly lose the "fatness of childhood" but gains. The long period of adult fatness-gain peaks about age 50.

Using a questionnaire completed by 73,532 weight-conscious women Rimm (59) examined the association between juvenile obesity and adult severe obesity. The data revealed that severely obese women (regardless of age) were 2.4 times more likely than normal weight women to have been fat children. Along the same line the risk of a fat child developing severe obesity was substantially greater than that for a non-fat child.

In 1974 a random sample of 1,619 women and 440 men measuring their heights and weights was taken by Ashwell (3). They were asked if they considered themselves to be "underweight",

"overweight" or suitable for their height. Their actual heights and weights were also analyzed and classified according to the standards of the Metropolitan Life tables. There was a reasonably accurate self-assessment of each individual concerning body weight. However, 60 percent classified as underweight thought they were of suitable weight. Almost all of the overweight women knew that they were overweight, but 30 to 40 percent of the overweight men thought their weight was suitable. Less than 50 percent of the men had ever tried to reduce their weight, but about 80 percent of the women had tried.

Wing (76) produced a study comparing individual's self report of weight and an observer's rating. She found that self reported weights were more accurate predictions of actual weight than observers' ratings.

Pomerantz (54) randomly chose 20 male and 20 female patients of a weight reduction program to take the Minnesota Multiphasic Personality Inventory. The female patients scored significantly lower than a normal population on the femininity scale. Pomerantz also suggested that assertiveness training should become an integral part of the behavior modification program in the treatment of obesity.

#### EXERCISE AND OBESITY

Fullerton (20) expressed that exercise has continually emerged as an important substitute behavior in smoking cessation, dietary changes, weight management, blood pressure reduction, stress

reduction and it has improved the impact of counseling and other interventions. There has been a greater trend toward education about caloric reduction combined with exercise.

Albert Stunkard's (72) research of 1958 emphasized that physical activity of obese persons is a subject that has been greatly neglected. Results comparing 15 obese and 15 non-obese women measured by a pedometer revealed that in one week's time the obese women walked less than half as far as the non-obese. Stunkard stated that "obese women appear to be far less active than non-obese women, and this difference in activity is paralleled by differences in attitudes toward activity." The obese women also expressed sharp attitude differences in comparison to the non-obese during situations of depression or boredom.

In research done by Stunkard (74) in 1960, he observed 15 obese preadolescent girls and 15 matched non-obese girls during a two week summer camp and their first week at home. The girls were studied by means of mechanical pedometers. At camp the obese girls walked 7.2 miles per day compared with 8.1 for the others. However, when the weight was taken into account the obese were found to perform more work than their controls. Both groups were less active in the home environment. Comparison weight changes at camp showed that the obese girls either lost more or gained less than their controls.

Hilyer (31) worked with three groups of 40 obese college students in an experiment created to investigate the effect of

systematic distance running. The second group participated in the identical physical activity program but additionally received one hour per week of group counseling designed to reinforce progress made in the fitness program. The third group, the control group, received no fitness program or counseling. After the 10 week program group one made significantly greater gains in self concept as measured by the Tennessee Self Concept Scale. However, only the students in group one who had a low self concept on the pretest made positive changes at the .05 significance level.

Guggenheim (25) studied 499 boys and girls 13-14 years of age. The subjects considered eating habits as causes of obesity or thinness but few mentioned the effects of physical exercise.

Dahlkaetter (13) studied the effectiveness of exercise and eating habit changes individually and in combination for weight loss and physical conditioning. Forty-four subjects were placed within one of the following treatment groups: exercise, eating habits, combination and delay-of-treatment control. The results of eight one hour sessions showed significant improvements for all treatment groups. Groups that exercised showed the most improvements in physical fitness. The most improvement in weight and body circumferences was found in the combination group. In an eight week follow-up study, only the combination group had continued to lose weight. Dahlkaetter stressed the necessity of combining exercise and eating habit

change in dealing with obesity.

Stalonas (68) also investigated aspects of behavioral control programs for obesity. The study of 44 obese subjects after a 10 week treatment session with three month and one year follow-ups found that only those exposed to exercise maintained weight loss after one year. The influence of exercise at the one year follow-up was very noticeable.

On the other hand, Mayer (45) expressed these concerns about exercise for the obese:

In many cases of mild overweight and in all cases of obesity, only rigid adherence to caloric restriction will permit successful reduction. An increase in physical activity may be impossible in the frequent situations where overweight is accompanied by an already dangerously increased load on the cardiovascular system. A decrease in physical activity is not necessarily accompanied by decreased appetite, nor is a moderate increase in exercise accompanied by an increased appetite. But moderate, frequent, and consistent exercise is a very helpful aid in weight reduction.

Bullen (7) used a motion picture technique to compare the activity of obese and non-obese adolescent girls. On the basis of 27,211 three-second filmed individual observations it was clear that the obese girls were far less active than the non-obese girls, even during supervised sport periods. On a questionnaire given to the subjects, they reported their estimate of the time spent in physical activity during the school year and their attitudes toward exercise. The obese girls had a favorable attitude toward physical activity but did not transfer that into voluntary participation during the school year nor into a high activity level at camp. The obese girls were aware of being less active than their peers and attributed this to their overweight problem but they

failed to recognize their disinclination for active exercise.

In 1963 Bullen (6) published in the American Journal of Clinical Nutrition responses of obese and non-obese adolescent girls to direct questioning of their attitudes toward physical activity, food and their family. The non-obese group, consisting of 39 subjects, implied a family life of sociability and unity and believed that there would be little difficulty in separating from the family. The 115 obese girls expressed a less unified family setting which they were afraid to leave. Those in the obese group knew of their inactivity but had no concept of the degree of their inactivity. They were unaware of any dislike of physical activity or of any relationship between inactivity and obesity.

Pliner (53) found that in 24 obese and 24 normal weight subjects a decrease in food intake occurred when the subjects were made aware of their eating by means of a mirror. The study was created to demonstrate that increasing awareness of eating can decrease amounts eaten by the obese. The study showed that the mirror affected normal weight subjects as well as overweight ones, although the effect was smaller for the normal weight subjects.

Garner (22) in 1978 supplied a summary of investigations of obesity and anorexia nervosa (Table I). Implications of these studies stress clinical observations of alteration in the body image.

#### TREATMENT OF OBESITY

A subsequent study in 1975 by Stunkard (71) emphasized psychosomatic treatment for obesity. He believed that there needs

TABLE I

## SUMMARY OF BODY IMAGE INVESTIGATIONS IN OBESITY

Investigator	Criteria for Obesity	Sample Size	Average Age	Sex	Control Groups*	Assessment Method	Summary of Results
Gottesfeld (1962)	Superobese ~50%+ over average	30	**	**	Neurotic (30)	Self drawings	OBESE (OB) show more negative "body cathexis" than NON-OB
Stunkard & Mendelson (1967)	**	74	Median 43	37M 37F	None	Interview after OB look in mirror	"Severe" body image disturbance related to juvenile onset and neurosis.
Shipman & Sohlkhan (1967)	**	37	Range 24-45	F	NON-OB (20)	Distorting mirror	OB make themselves "substantially broader" than their actual size.
Meyer & Tuchelt-Gallwitz (1968)	30% + over average	69	28.1	F	NON-OB (39)	Facial photographs	Overestimation of facial width with OB correlated with psychopathology and bulimia. Greater variability in OB self estimates.
Cappon & Banks (1968)	25% + over average	23	38.9	3M 20F	NON-OB (6) M (17) F	Caliper device	70% of both OB and NON-OB groups overestimate size. OB self-estimates decreased after exposure to image in mirror.
Glucksman & Hirsch (1969)	** (average weight 334 lbs)	6	Range 20-36	3M 3F	NON-OB (3) M (1) F	Anamorphic lens	OB overestimated size of self during weight reduction; controls underestimated size.
Nathan & Pisula (1970)	23-57% over average	15	Range 12-16	7M 8F	None	Human figure drawings	Drawings were primitive and lacked detail.
Grinker (1973)	Juvenile Onset (JO) Adult Onset (AO)	11 6	28	28 28	NON-OB (4)	Anamorphic lens	JO-OB overestimated size of self during weight loss. AO-OB underestimated. Mirror information improved estimates of AO-OB but not JO-OB. Controls underestimated.
Slade & Russell (1973)	**	7	**	**	**	Caliper device	Overestimation tendency observed; details not provided.
Solow et al. (1974)	Bypass surgery	29	37	9M 20F	None	Paper & pencil test	Improvement in 80% of OB following surgery
Garner et (1976)	25-75% over average (JO)	16	28.8	F	(16) Neurotic (16) NON-OB (16) thins	Anamorphic lens Caliper	43% of OB overestimated self size compared to 10% of controls. With OB, overestimation related to external locus of control All groups overestimated to similar

to be an awareness of the influence of the social environment on the production and control of obesity. In this article he discussed Weight Watchers as a type of behavioral control group. Richard Stuart helped the Weight Watchers program develop behavioral techniques which seemed to draw the interest of obese persons. The figures of growth have shown the program's membership to exceed 2.4 million since 1962.

Several authors studied the long term effects of behavior therapy on weight reduction (1,33,41,52). The role of the therapist is varied in weight reduction programs. When meetings with the therapist were "faded out" over the duration of the ten week period subjects lost significantly more weight compared to subjects who met with the therapist on a regular basis. Six months after therapy, subjects who had regularly met with the therapist during treatment periods had gained back all the weight they had lost during treatment (8,33). Subjects who had the therapists "faded out," however, maintained their losses (8). A study by a group at the Stanford Eating Disorders Clinic found that after a year treatment with behavioral techniques, 43 percent lost additional weight. Clients reported substantial improvements in eating behaviors during treatment and improvements were still clearly evident a year later (1).

Maddox (43) found that even physicians chose not to deal with obese clients. One hundred physicians preferred not to manage the overweight patient and indicated that they did not, in fact, do so. Their description of the severely overweight patient was extremely negative.

Newsweek, of March 1975, (19) published an article speaking of discrimination and the weight problem:

Probably the biggest reason many fat job applicants are turned down is simply their appearance. Some of our bright young executives think it enhances office decor to have a TV star out there.

Some employers equate fatness with laziness; others fear that obesity may be a sign of a physical or psychological problem that could prevent a person from doing a decent job.

The bias against fat people begins long before they even enter the job market, according to Harvard nutrition expert, Jean Mayer. When college applications involve personal interviews, Mayer says, fat men have only half the chance of being admitted as do those of normal weight; fat women have only one third the chance.

A few disappointed overweight job seekers have taken legal action against companies they say discriminated against them; two cases were in Portland. But while many state antidiscrimination laws in theory cover fat people, charges of violations are hard to prove and the Federal Equal Employment Opportunity Commission, which has made major advances for blacks and women, can't help. Its charter covers race, color, sex, religion and natural origin, but not bulk.

Obesity is quickly becoming the foremost psychophysiologic disorder of our time, affecting employers and employees alike. Illnesses associated with obesity -- lower back problems and chronic cardiovascular disease among them -- cost companies billions of dollars annually in lost output and workers compensation.

In response to these problems, an increasing number of companies have started exercise programs to thin down employees.

This author believed that occupational counselors need to counsel the hidden factors for an obese client and help them understand the problems they face as they enter the job market. Counselors may also help the employer understand the ability of the obese.

### Chapter III

#### RESEARCH DESIGN

##### SUBJECTS

The present study was conducted in Oregon and Washington during 1980 - 1981. The two inventories were administered individually or in groups. Three hundred inventories were distributed with fifty being used for the research in this project. The other two hundred and fifty participants chose not to return the inventories or did not qualify because of the weight and/or age variables. The volunteer subjects' ages ranged from 18 to 45 with a mean age of 28.9 years. The subjects' weight ranged from 20 percent to 120 percent over their desirable weight. The mean weight was 183.7 pounds.

The subjects' desirable weight was derived from the table created by the Build and Blood Pressure Study of 1959, (48) which was the basis for the Metropolitan Life Insurance table that is used frequently by researchers. The major difference in the tables is that the Metropolitan Life Insurance table gives desirable weight in relation to age, height and body frame whereas the other table only concerns itself with age and height. Also the Build and Blood Pressure table gives desirable weights for subjects as young as 20 where the life insurance table begins with age 25. The Metropolitan Life Insurance Company was to revise its popular height and weight charts and release the complete guidelines in

December of 1981. In this, desirable weights were to be increased by at least ten pounds (46). Unable to find the chart in February of 1982 this researcher spoke to a Metropolitan Life Insurance agent in a Portland, Oregon, regional office and was informed that the new guidelines had not yet been published and were not yet in use by the insurance company.

The Metropolitan Life Insurance table, which begins at age 25, recommends a procedure for determining desirable weight for younger people. Using this as a guideline, one pound was subtracted for each year under 20 from the Build and Blood Pressure table (Appendix A).

Subjects signed a release form (Appendix B) which explained that there was no risk or benefit to them with their participation. Their names were never used as references to data but rather each subject's inventory was assigned a letter, A-Z (1-26) and A<sub>1</sub>-X<sub>1</sub> (27-50).

#### PHYSICAL ACTIVITY INVENTORY

Several attitude inventories were reviewed. Wear (75) established a physical education attitude inventory where subjects are asked to respond to 29 statements selecting one of five choices; strongly agree, agree, undecided, disagree, strongly disagree. Almost one half of the items were worded negatively. Wear found that with 472 cases studied the reliability was .96. Keough also created a physical education inventory. His inventory contains 40 statements that the subjects rate on a Likert Scale. Hellison created a three part inventory in which the subjects

circled letters that corresponded to words that evaluated the subject, evaluated what was important to the subject and what was like or not like the subjects. The statements dealt mostly with academic school classes and self esteem. Within all three of these inventories the statements referred to attitudes toward physical education rather than toward physical activity. These inventories were not appropriate for this study and therefore were not used.

Gerald Kenyon's inventory (Appendix C) was chosen because it was the only one which measured attitudes toward physical activity. He developed attitude statements representative of six dimensions: physical activity perceived as a social experience, for development of health and fitness, as the pursuit of vertigo, as an aesthetic experience, for catharsis and as an ascetic experience. The female inventory consists of fifty-four items to which subjects respond with one of the following seven categories: Very Strongly Agree, Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree and Very Strongly Disagree.

Examples from the inventory representing the ascetic dimension:

- + 1. I would gladly put up with the necessary hard training for the chance to try out for the U.S. Women's Olympic Team.
- 2. The years of strenuous daily training necessary to prepare for today's international competition is asking a lot of today's young women.

Since question number one is stated in a positive manner, the answer weighting is scored as follows:

VSA	SA	A	U	D	SD	VSD
7	6	5	4	3	2	1

Question number two is stated negatively and the weighting reverses:

VSA	SA	A	U	D	SD	VSD
1	2	3	4	5	6	7

Total scores for each subject for each inventory were obtained by adding the value of the selected response for all items on the inventory.

Appendix D indicates the positive and negative statements for each domain. Hoyt reliabilities for each of the six dimensions ranged from .68 to .89 when given to 568 subjects (37).

#### SELF-BODY CATHEXIS INVENTORY

There are many instruments to evaluate the self. Four types were reviewed and the Jourard and Secord Self-Body Cathexis inventory was chosen because of the two incorporated parts that relate to physical activity.

Other types reviewed included the Adjective Check List, which consists of three hundred adjectives, arranged alphabetically. The subject checks all adjectives considered descriptive of the self. The Q-Sort Technique is a set of cards containing descriptive statements. The subjects sort the cards into piles ranging from most characteristic to least characteristic of the self, or other people, or situations. Correlations are computed to determine the degree of similarity or difference among Q-Sorts. The Tennessee Self Concept Scale, developed by William H. Fitts, consists of one hundred self description items, of which ninety assess the self concept and ten involve self criticism. The subject indicates

feelings about each statement by circling a number corresponding to: 1 completely false, 2 mostly false, 3 partly false and partly true, 4 mostly true and 5 completely true. The answers are then summed, persons with high scores tending to like themselves, people with low scores having feelings of low self worth (78).

Secord and Jourard's inventory (63) (Appendix E) combined measurement of the self and body cathexis. The subjects are asked to indicate levels of satisfaction or dissatisfaction with 40 items relating to their self image and 40 items relating to their body image. Each word or word phrase was followed by five numbers and subjects were asked to circle the one number that represented their own feelings concerning that item. The numbers represented the following personal feelings:

1. if you have strong negative feelings.
2. if you have moderately negative feelings.
3. if you have no feelings one way or the other.
4. if you have moderately positive feelings.
5. if you have strong positive feelings.

#### STATISTICAL ANALYSIS

The raw data of the two inventories were statistically analyzed using the Pearson product moment correlation. Means and standard deviations also were computed. The statistics were calculated on the HP - 85 computer. Computer programs used were Paired Sample Analysis and One Sample Analysis. The .05 level of significance was used for rejection of the null hypotheses. The statistics were computed in the following groups: total group of 50 inventories, the 50 inventories divided into age groups, the 50 inventories divided into weight groups. The age groups are

divided into letter categories:

A	Age 18-19	N= 11
B	Age 20-24	N= 6
C	Age 25-29	N= 12
D	Age 30-39	N= 15
E	Age 40-45	N= 6
		<u>50</u>

The weight groups were also divided into letter categories:

A	20%-25%	over	N= 14
B	26%-39%	over	N= 16
C	40%-59%	over	N= 13
D	60%-120%	over	N= 7
			<u>50</u>

## Chapter IV

### ANALYSIS AND INTERPRETATION OF THE DATA

#### INTRODUCTION

The purpose of this study was to investigate the relationship between the self-body cathexis of obese women and their attitudes toward physical activity. Kenyon's Inventory for determining Attitude Toward Physical Activity and Jourard and Secord's Self-Body Cathexis Inventory were administered to 50 obese women who volunteered to participate in the study.

Matrix tables of correlations obtained were constructed as well as tables showing the means, standard deviations and amounts of skewness and/or kurtosis for the distributions obtained.

Data from Kenyon's Inventory for Determining Attitudes Toward Physical Activity were also analyzed by responses in the subdomains: social, health and fitness, vertigo, aesthetic, catharsis and ascetic. Means obtained were compared both to norms established by Kenyon and to a constant value.

The data gathered were analyzed statistically to determine whether there was any significant relationship between the obese women's self cathexis and body cathexis; between self cathexis and their attitudes toward physical activity; and between body cathexis and their attitudes toward physical activity. The data was also analyzed separately by age and weight groups using the same

correlation procedure.

### STATISTICAL TREATMENT

The data from the inventories were analyzed using the Pearson product moment correlation. The .05 level of significance was selected for rejection of the null hypotheses.

Table II indicates the correlations for the total group of obese women surveyed. Three comparisons were found to correlate significantly at the .05 level. There was a significant negative relationship between the subjects' body image and their weight. This indicates the lower the body weight, the higher the score on the body image scale. Weight also correlated negatively with their attitude toward physical activity; those who weighed less had a more positive attitude toward physical activity. The health and fitness category correlated negatively with physical activity seen as an aesthetic experience. The subjects who viewed physical activity as a means to improve their health and fitness did not value it for its beauty or artistic qualities.

Two categories were highly significant (.01). The higher the score on physical activity the higher the score on vertigo. The higher the score on the social aspect of physical activity the higher the score on the catharsis category.

There was a .001 significant relationship between self and body cathexis. Subjects who felt good about themselves also felt good about their body. There were also .001 significant relationships between attitudes toward physical activity and the following

subdomains: the health and fitness component; catharsis; and ascetic. There also was a highly significant relationship between scores on the health and fitness and catharsis components.

TABLE II  
CORRELATION MATRIX FOR FIFTY SUBJECTS

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic	Weight	Age
Self	-	<sup>c</sup> .51	.18	.07	.00	.06	.23	.04	.09	-.09	.07
Body		-	.13	-.03	.09	.13	-.08	.08	.15	-.27	.00
Physical Activity			-	<sup>c</sup> .52	<sup>c</sup> .47	<sup>b</sup> .36	.09	<sup>c</sup> .68	<sup>c</sup> .51	<sup>a</sup> -.29	-.03
Social				-	-.01	-.05	.11	<sup>b</sup> .42	-.03		
Health & Fitness					-	-.15	<sup>a</sup> -.32	<sup>c</sup> .51	.25		
Vertigo						-	-.13	-.15	.26		
Aesthetic							-	-.20	-.24		
Catharsis								-	.23		
Ascetic									-		

a Significant at the .05 level (.2732)  
b Significant at the .01 level (.3541)  
c Significant at the .001 level (.4433)

Table III indicates what the average score would be if a subject had responded with the same degree of personal feeling to each item in the inventories. For example: If a subject had circled the number three, which corresponds to "no personal feeling one way or the other" to all 40 of the word phrases on the self cathexis inventory, her mean for that inventory would have been 120. If a subject had circled U (undecided - #4) throughout the 54 items on the physical activity inventory her mean for that inventory would have been 216. Scores above these means indicate a positive attitude while scores below these means indicate a negative attitude.

TABLE III  
CONSTANT INVENTORY MEANS

Numbered Responses	1	2	3	4	5		
Self-Body Inventory Means	40	80	120	160	200		
Numbered Responses	1	2	3	4	5	6	7
Physical Activity Means	54	108	162	216	270	324	378

In Table IV the means, standard deviations and the degree of skewness and kurtosis of the curves of the distribution of their scores have been recorded for the entire fifty obese women. Comparing the means of Table III and Table IV it is evident that the women do have slightly positive attitudes toward their self images and their body images (140 vs 120). These means also indicate

that the subjects had a slightly higher self image than their body image. Concerning physical activity the women had only a slightly positive attitude toward physical activity (217 vs 216).

TABLE IV  
ONE SAMPLE ANALYSIS OF DATA  
FOR FIFTY SUBJECTS

	Mean	S. Deviation	Skewness	Kurtosis
Self	140.96	18.11	.42	3.07
Body	138.94	20.29	.06	2.34
Physical Activity	217.32	18.28	.07	3.11

#### Weight Groups

In weight group A, the lightest subjects (20%-25% over desirable weight), there were four significant correlations. As seen in Table V, the subjects' self and body image categories correlated significantly at the .01 level. Three aspects of physical activity correlated significantly at the .05 level: as the pursuit of vertigo, as a social experience and as an ascetic experience, in that order.

TABLE V  
CORRELATION MATRIX FOR WEIGHT GROUP A

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	b .62	-.04	-.09	-.13	.00	.23	-.34	.25
Body		-	-.22	-.09	-.19	-.31	-.08	.06	.13
Physical Activity			-	a .59	.32	a .61	.24	.48	a .52

a Significant at the .05 level (.4973)

b Significant at the .01 level (.6226)

c Significant at the .001 level (.7420)

N= 14

As indicated in Table VI correlations for women in weight group B, 26% to 39% over their desired weight, there were three significant correlations all in the physical activity category. Physical activity was correlated with social and health and fitness at the .05 level. The correlation between physical activity and catharsis was significant at the .001 level.

TABLE VI  
CORRELATION MATRIX FOR WEIGHT GROUP B

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	-.17	.18	.35	-.11	-.23	.32	.05	.16
Body		-	.07	.12	-.12	.08	.41	-.16	-.18
Physical Activity			-	a	a			c	
				.50	.56	.18	.39	.71	.15

a Significant at the .05 level (.4683)

b Significant at the .01 level (.5897)

c Significant at the .001 level (.7084)

N=16

As Table VII shows, weight group C, which was 40% to 59% over their desired weight, had the largest number of significant correlations. Body and self images correlated significantly at the .001 level. Those obese women who had a strong positive self image also had a strong positive body image. Weight group C was the first weight group to have other significant figures in the body category. Weight group C also was the only weight group to have a significant figure for physical activity. At the .05 level of significance, these women who had positive body images also had a positive attitude toward physical activity as a whole. Those women with a positive body image also believed that physical activity improved one's health and fitness and involved catharsis, a release of tension. For weight group C as a whole, physical

activity created an ascetic experience, significant at the .01 level. Catharsis and pursuit of vertigo were both significant at the .05 level.

TABLE VII  
CORRELATION MATRIX FOR WEIGHT GROUP C

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	<sup>c</sup> .81	.41	.20	.38	.08	.13	.34	-.08
Body		-	<sup>a</sup> .52	.34	<sup>a</sup> .53	.04	-.14	<sup>a</sup> .51	.10
Physical Activity			-	.43	.26	<sup>a</sup> .52	.11	<sup>a</sup> .60	<sup>b</sup> .69

a Significant at the .05 level (.5139)  
 b Significant at the .01 level (.6411)  
 c Significant at the .001 level (.7603)  
 N= 13

Table VIII indicates the significant correlations for weight group D, those women who were 60% to 120% over their desirable weight. At the .01 level of significance the women in weight group D felt physical activity was for catharsis and constituted an ascetic experience. At the .05 level of significance they believed physical activity was to improve one's health and fitness. Those women who had a positive body image felt that physical activity involved vertigo (.05 level of significance), and believed that physical activity was not a social experience (.01 level).

TABLE VIII  
CORRELATION MATRIX FOR WEIGHT GROUP D

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	-.23	-.03	-.19	-.41	.26	.21	.02	.29
Body		-	-.10	-.82 <sup>b</sup>	.27 <sup>a</sup>	.76	-.59	-.45	.26
Physical Activity			-	.50 <sup>a</sup>	.70 <sup>a</sup>	.17	-.24 <sup>b</sup>	.87 <sup>b</sup>	.86 <sup>b</sup>

a Significant at the .05 level (.6664)

b Significant at the .01 level (.7977)

c Significant at the .001 level (.8982)

N= 7

Table IX indicates the means for the weight groups.

Comparing this table to Table III one can see that the mean for the self image of each of the weight groups was higher than the mean for the number three response for the inventory. The lightest, group A, had the highest positive self image; weight group C had the lowest of any of the weight groups. All the weight groups also had slightly positive attitudes toward the body image. Weight group B had the highest positive body image with a gradual decrease through group C to group D, which had the lowest body image mean. Weight groups A, B and C had slightly positive attitudes toward physical activity. Group D, the heaviest weight group, had the lowest mean attitude toward physical activity, the group mean being only 202, while an

TABLE IX  
ONE SAMPLE ANALYSIS OF DATA  
FOR WEIGHT GROUPS

	Mean	S. Deviation
Group A		
Self	145.0714	18.73
Body	140.86	18.33
Physical Activity	216.29	18.42
Group B		
Self	140.44	12.09
Body	148.13	17.19
Physical Activity	221.19	18.41
Group C		
Self	137.62	24.22
Body	131.08	23.82
Physical Activity	221.77	15.41
Group D		
Self	140.14	17.71
Body	129.00	16.84
Physical Activity	202.29	17.93

average attitude would have been 216.

Concerning self image, group C had the greatest amount of variability, with a standard deviation of 24.22. The slightly lighter group B produced more similar responses with a standard deviation of only 12.09.

Weight group C also had the most variable responses for their body image. The body image responses of the heaviest group (group D) were the least variable.

Attitudes toward physical activity responses were quite consistent. The standard deviations ranged from 15.41 for weight group C to 18.42 for weight group A.

#### Age Groups

Considered by age groups, Table X indicates three significant correlations for age group A, 18 to 19 years old. Physical activity correlated with health and fitness, significant at the .01 level for this youngest group. Physical activity also correlated with catharsis, significant at the .05 level. Body image correlated with physical activity as an aesthetic experience at the .05 level.

TABLE X  
CORRELATION MATRIX FOR AGE GROUP A

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	1	.41	.14	-.33	.06	-.06	.15	-.13	.49
Body		1	.12	.00	.15	.36	.59 <sup>a</sup>	-.15	.13
Physical Activity			1	.53	.70 <sup>b</sup>	.32	.47	.55 <sup>a</sup>	-.12

a Significant at the .05 level (.5529)

b Significant at the .01 level (.6835)

c Significant at the .001 level (.8010)

N=11

Age group B (Table XI), the 20 to 24 year olds, produced four significant correlations. Those who had a positive self image also had a positive body image, significant at the .05 level. Physical activity correlated with catharsis, significant at the .01 level. At the .05 level, physical activity correlated with health and fitness and an ascetic experience.

TABLE XI  
CORRELATION MATRIX FOR AGE GROUP B

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	a .71	.66	.34	.50	.28	.11	.50	.31
Body		-	.27	-.31	.31	.65	-.46	.22	.34
Physical Activity			-	.47	a .81	-.32	.68	b .91	a .78

a Significant at the .05 level (.7067)  
 b Significant at the .01 level (.8343)  
 c Significant at the .001 level (.9249)  
 N= 6

Those of age group C (Table XII), the 25 to 29 year olds, who had a positive self image believed that physical activity was not to aid one's health and fitness or for catharsis, significant at the .05 level. However as a total group, the age group C believed, at a .001 level of significance, that physical activity was for catharsis, followed at the .01 level of significance by health and fitness and an ascetic experience.

TABLE XII  
CORRELATION MATRIX FOR AGE GROUP C

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	.34	-.51	-.15	-.61 <sup>a</sup>	-.20	.36	-.58 <sup>a</sup>	-.03
Body		-	.04	-.14	.25	.14	-.44	-.02	.39
Physical Activity			-	.40 <sup>b</sup>	.77 <sup>b</sup>	.22	-.28	.84 <sup>c</sup>	.71 <sup>b</sup>

a Significant at the .05 level (.5324)

b Significant at the .01 level (.6614)

c Significant at the .001 level (.7800)

N= 12

Age group D (Table XIII), consisting of 30 to 39 year olds, had five significant figures. The self and body image correlated positively at the .05 level. In the physical activity category the age group believed that physical activity was for catharsis (.001), was a social experience (.01) and at the .05 level of significance involved the pursuit of vertigo and an ascetic experience.

TABLE XIII  
CORRELATION MATRIX FOR AGE GROUP D

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	a .54	.37	.42	.01	.15	.07	.39	-.11
Body		-	-.00	.09	.03	-.05	-.04	.19	-.41
Physical Activity			-	b .63	.42	a .59	-.10	c .77	a .56

a Significant at the .05 level (.4821)

b Significant at the .01 level (.6055)

c Significant at the .001 level (.7246)

N= 15

Age group E (Table XIV) also indicated that those who had a positive self image had a positive body image (.05). These 40 to 45 year old subjects believed that physical activity involved the pursuit of vertigo (.01). At the .05 level of significance data showed that physical activity for them furnished an aesthetic experience and a social experience. There was a negative correlation, significant at the .05 level, between physical activity and health and fitness.

TABLE XIV  
CORRELATION MATRIX FOR AGE GROUP E

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	<sup>a</sup> .82	.40	-.03	.09	.29	.09	.11	.64
Body		-	.04	-.12	.31	-.11	-.12	.08	.46
Physical Activity			-	<sup>a</sup> .75	<sup>a</sup> -.71	<sup>b</sup> .83	<sup>a</sup> .80	-.06	.68

a Significant at the .05 level (.7067)

b Significant at the .01 level (.8343)

c Significant at the .001 level (.9249)

N= 6

Comparing Table III and Table XV the means indicated all of the age groups had a slightly positive attitude toward their self and body images. Age group B had both the lowest self and body image means while age group C had the highest. In the physical activity category the older age group, E, had a negative attitude toward physical activity while all the other age groups were at least slightly positive. Age group D had the most positive attitude toward physical activity.

Concerning self image, group B had the greatest amount of variability, with a standard deviation of 25.92. Group E, the oldest group surveyed, were more similar in their responses, producing a standard deviation of only 11.84.

Body image responses were similarly varied, the standard

TABLE XV  
ONE SAMPLE ANALYSIS OF DATA  
FOR AGE GROUPS

Group A	Mean	S. Deviation
Self	139.18	17.35
Body	140.55	25.88
Physical Activity	217.45	12.45
Group B		
Self	134.00	25.92
Body	135.33	27.46
Physical Activity	217.83	19.53
Group C		
Self	144.58	15.33
Body	141.75	19.65
Physical Activity	216.17	20.81
Group D		
Self	142.20	20.54
Body	137.20	17.24
Physical Activity	221.53	21.24
Group E		
Self	140.83	11.84
Body	138.67	14.75
Physical Activity	208.33	14.61

deviations ranging from 27.46 for age group B to 14.75 for group E, these older women again being more similar in their responses. Since there were only six subjects in each of groups B and E, they made an interesting comparison. Attitudes toward physical activity however were more consistent, the standard deviations ranging only from 12.45 for group A, the youngest, to 21.24 for group D.

Table XVI was confined to those with negative attitudes toward physical activity, their means on the Physical Activity Inventory being below 216. Table III indicates that if subjects circled U (undecided) for all the items on the inventory their mean would be 216.

These 27 subjects with a negative attitude toward physical activity indicated that physical activity is done for catharsis (.01) and involves a social experience and the pursuit of vertigo (.05).

Of these women, those who had a positive self image also had a positive body image, significant at the .001 level. But those women who felt good about their body images believed that physical activity was not a social experience.

TABLE XVI

CORRELATION MATRIX FOR GROUP OF  
NEGATIVE ATTITUDES TOWARD  
PHYSICAL ACTIVITY

	Self	Body	Physical Activity	Social	Health & Fitness	Vertigo	Aesthetic	Catharsis	Ascetic
Self	-	<sup>c</sup> .59	-.05	-.14	-.09	-.12	.30	-.12	.09
Body		-	-.21	<sup>a</sup> -.39	.28	-.04	-.17	-.10	.11
Physical Activity			-	<sup>a</sup> .42	.03	<sup>a</sup> .42	-.07	<sup>b</sup> .50	.30

a Significant at the .05 level (.3683)

b Significant at the .01 level (.4716)

c Significant at the .001 level (.5801)

N=27

Table XVII indicates the means for this study for each of the six domains of the Physical Activity Inventory compared to the constant and to Kenyon's original norms (10). The constant value was determined by multiplying the number of items within each domain times four, which was the "Undecided" response. For example: The social domain contains eight items specific to physical activity perceived as a social experience. This times four equals 32.

Comparing the mean of these obese women to the constant, the women had positive attitudes toward all the subdomains except the ascetic. Comparing their means to Kenyon's original norms, the women's means fell within Kenyon's norms in the social domain.

But the obese women had a much stronger feeling toward physical activity for the pursuit of vertigo and for catharsis. The obese women also had a slightly higher mean for the aesthetic category and for health and fitness. These obese subjects had a lower mean for the ascetic category than was the norm established by Kenyon.

TABLE XVII

SUBDOMAIN MEANS OF OBESE WOMEN COMPARED  
TO CONSTANT AND KENYON'S NORMS

Subdomains	Obese Women Means	Constant	Kenyon's Norms (10)
Social	33.46	32.	32.0-34.0
Health and Fitness	45.78	44.	44.3-45.4
Pursuit of Vertigo	75.50	36.	36.6-37.4
Aesthetic	38.26	36.	35.1-36.7
Catharsis	63.98	36.	35.1-36.7
Ascetic	28.09	32.	31.2-31.5

## Chapter V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### SUMMARY

##### Introduction

The purpose of this study was to investigate the relationship between the self-body cathexis of obese women and their attitudes toward physical activity. Two inventories were employed to determine the attitudes of 50 females, ages 18 to 45, toward physical activity and their self-body cathexis. The females were chosen on the basis of immediate weight being 20 percent or more higher than their desirable weight, according to the chart developed by the Build and Blood Pressure Study (48). The Jourard and Secord Self-Body Cathexis Inventory and the Kenyon Attitude Toward Physical Activity Inventory were used as the measuring devices.

These volunteer subjects were found through professional contacts throughout Oregon and Washington. The data from the inventories were statistically analyzed using primarily the Pearson product moment correlation. The .05 level of significance was selected for rejecting the null hypotheses.

## Results

The results of the statistical analysis of the inventory data required accepting hypothesis one which stated that there is no significant relationship between the self cathexis of obese women and their attitude toward physical activity.

Hypothesis two, which stated that there is no significant relationship between the body cathexis of obese women and their attitude toward physical activity, was also accepted.

Hypothesis three was rejected. Statistical analysis indicated that the positive relationship between self cathexis and the body cathexis of obese women was significant at the .001 level.

Hypothesis four, which stated that there is no significant relationship between age and the self cathexis of obese women, was accepted. Hypothesis five was also accepted, the hypothesis being that there is no significant relationship between age and the body cathexis of obese women. Hypothesis six was accepted, that there is no significant relationship between the age of obese women and their attitude toward physical activity.

Hypothesis seven, which stated that there is no significant relationship between weight and the self cathexis of obese women, was accepted. The statistical analysis did allow rejection of hypothesis eight, which stated there is no significant relationship between weight and the body cathexis of obese women. Those subjects in this study who had a positive body image weighed less. Hypothesis nine was also rejected, the hypothesis being that there is no significant relationship between the weight of obese women and

their attitude toward physical activity. Statistically, the less the subjects weighed the more positive their attitude toward physical activity.

Further analysis was done by dividing the data of the subjects' inventories into weight and age groups. Twenty seven of the 50 subjects scored negatively on the Attitude Toward Physical Activity Inventory and correlations were also done on this group. A significant correlation represents the .05 or higher level.

Weight groups. There was a significant positive correlation between self image and body image in weight groups A and C. Weight group C's body image correlated positively with their attitudes toward physical activity. The body image of weight group C correlated positively with the physical activity domains: health and fitness and catharsis. The body image of weight group D correlated positively with the physical activity domain vertigo but negatively with the social domain.

In weight groups A and B physical activity correlated positively with the social domain. In groups B and D physical activity correlated positively with the health and fitness physical activity domain. The physical activity domain of vertigo correlated positively with physical activity in weight groups A and C. The physical activity domain catharsis correlated positively with physical activity within weight groups B, C and D. In weight groups A, C and D physical activity correlated positively with the ascetic physical activity domain.

Age groups. The self image correlated positively with the subjects' body image in age groups B, D and E. There was

a significant negative correlation between the self image of age group C and the physical activity domains health and fitness and catharsis. For age group A the only significant body image correlation was with the physical activity domain aesthetic.

In age groups D and E physical activity correlated positively with the physical activity social domain. The health and fitness domain correlated positively with physical activity in age groups A, B and C but negatively in age group E. In age groups D and E physical activity had a positive correlation with the vertigo physical activity domain. Age group E was the only group to have a significant correlation between physical activity and the aesthetic domain. In groups A, B, C and D physical activity correlated positively with the catharsis domain and in groups B, C and D correlated positively with the ascetic domain.

Negative attitude toward physical activity group. The subjects' self image of this group correlated positively with their body image. Their body image correlated with the social domain of physical activity. The physical activity scores were correlated positively in the social, vertigo and catharsis domains.

## CONCLUSIONS

The following conclusions have been formulated from the data presented by this study:

1. The obese women in this study had a highly significant positive relationship between their body image and their self image.

2. These obese women's feelings toward their body related significantly to their weight. The women in this study who weighed less had a more positive body image.
3. These obese women's feelings toward physical activity related significantly to their weight. The less the obese women weighed, the more positive their attitude toward physical activity.
4. In general, these obese women believed that the positive aspects of physical activity included catharsis, a social experience, an ascetic experience and improvement of one's health and fitness. All of the above domains were significant at the .001 level. At the .01 level of significance these obese women believed that physical activity involved the pursuit of vertigo.
5. These obese women did not believe that physical activity was an aesthetic experience.
6. These obese women who indicated that physical activity was a social experience also felt that it was for the purpose of catharsis.
7. The obese women who believed that physical activity was to improve one's health and fitness also believed that it was for the purpose of catharsis. These same women felt that physical activity was not an aesthetic experience.

8. The obese women studied have average feelings of satisfaction concerning their self image.
9. The obese women surveyed had average feelings of satisfaction concerning their body image.

#### RECOMMENDATIONS

1. Further research should be conducted with a larger number of obese female subjects to measure their attitudes toward physical activity.
2. Further research should be conducted with appropriate weight males and females to measure their attitudes toward their self-body cathexis and their attitudes toward physical activity.
3. Further research should be conducted with obese individuals who are within weight control programs to measure any change in their attitude toward physical activity throughout and following the program.
4. Further research should be conducted with super-obese individuals to determine their attitudes toward their self-body cathexis and physical activity.
5. Further research should be conducted with obese and normal weight females in more defined age groups to determine their change in attitudes toward physical activity resulting from the aging process.

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APPENDIX A

WEIGHT CHART FOR WOMEN

Height In Inches	Desirable Weight, Age 20-24	Desirable Weight + 20%	Desirable Weight, Age 25-29	Desirable Weight + 20%	Desirable Weight, Age 30-39	Desirable Weight + 20%	Desirable Weight, Age 40-49	Desirable Weight + 20%	Desirable Weight, Age 50-59	Desirable Weight + 20%
58	102	122.5	107	128.4	115	138.0	122	146.4	125	150.0
59	105	126	110	132.0	117	140.4	124	148.8	127	152.4
60	108	129.6	113	135.6	120	144.0	127	152.4	130	156.0
61	112	134.4	116	139.2	123	147.6	130	156.0	133	159.6
62	115	138.0	119	142.8	126	151.2	133	159.6	136	163.2
63	118	141.6	122	146.4	129	154.8	136	163.2	140	168.0
64	121	145.2	125	150.0	132	158.4	140	168.0	144	172.8
65	125	150.0	129	154.8	135	162.0	143	171.6	148	177.6
66	129	154.8	133	159.6	139	166.8	147	176.4	152	182.4
67	132	158.4	136	163.2	142	170.4	151	181.2	156	187.2
68	136	163.2	140	168.0	146	175.2	155	186	160	192.0
69	140	168.0	144	172.8	150	180	159	190.8	164	196.8
70	144	172.8	148	177.6	154	184.8	164	196.8	169	202.8
71	149	178.8	153	183.6	159	190.8	169	202.8	174	208.8
72	154	184.8	158	189.6	164	196.8	174	208.8	180	216.0

Table from Build and Blood Pressure Study of 1959 (48).

## APPENDIX B

## SAMPLE RELEASE FORM

Research Done for Partial Completion of a  
Master's Degree  
by  
Julia Reynolds

Current Weight \_\_\_\_\_ lbs

Height in Inches \_\_\_\_\_

Age \_\_\_\_\_

I understand that if I choose to participate in this research I will be asked to complete two (2) inventories concerning my opinions. I understand that by participating in this study there are no risks or benefits to me. I am free to withdraw from the study at any time. I have heard the verbal explanation of the procedure and understand the directions.

\_\_\_\_\_  
Signature

At no time will your name be used within the written study. The statistics on your inventories will be referred to by a form letter.

## APPENDIX C

KENYON'S INVENTORY FOR DETERMINING ATTITUDE TOWARD  
PHYSICAL ACTIVITYInstructions

1. Express your agreement or disagreement by circling the appropriate symbol on the answer sheet that corresponds with the attitude item, according to the following:

VSA: very strongly agree  
 SA: strongly agree  
 A: agree  
 U: undecided  
 D: disagree  
 SD: strongly disagree  
 VSD: very strongly disagree

For example, if you strongly disagree with a statement you circle the symbol SD as follows:

VSA SA A U D SD VSD 1. The United Nations  
should be abolished.

2. You should rarely need to use U (undecided).
3. Work independently of others.
4. Do not spend too much time on any one statement; try to respond then go on to the next item.
5. Respond to ALL statements on the answer sheets.

IMPORTANT

1. Respond to the statements in the order given. (Do not go on to page 2 until you have finished page 1, etc.)
2. The significance of this research depends upon the degree in which you express your own opinion.

## APPENDIX C (Continued)

1. I would prefer quiet activities like swimming or golf, rather than such activities as water skiing or sail boat racing.
2. I would gladly put up with the necessary hard training for the chance to try out for the U.S. Women's Olympic Team.
3. The most important value of physical activity is the beauty found in skilled movement.
4. Physical education programs should stress vigorous exercise since it contributes most to physical fitness.
5. The years of strenuous daily training necessary to prepare for today's international competition is asking a lot of today's young women.
6. The need for much higher levels of physical fitness has been established beyond all doubt.
7. Among the best physical activities are those which represent a personal challenge, such as skiing, mountain climbing or heavy weather sailing.
8. Among the most desirable forms of physical activity are those which present the beauty of human movement such as modern dance and water ballet.
9. I would get by far the most satisfaction from games requiring long and careful preparation and involving stiff competition against a strong opposition.
10. Of all physical activities, those whose purpose is primarily to develop physical fitness would be my first choice.
11. The best way to become more socially desirable is to participate in group physical activities.
12. Almost the only satisfactory way to relieve severe emotional strain is through some form of physical activity.
13. Frequent participation in dangerous sports and physical activities are alright for other people but ordinarily they are not for me.
14. Physical education programs should place much more emphasis upon the beauty found in human motion.
15. If given a choice, I sometimes would choose strenuous rather than light physical activity.

## APPENDIX C (Continued)

16. There are better ways of relieving the pressure of today's living than having to engage in or watch physical activity.
17. I like to engage in socially oriented physical activities.
18. A part of our daily lives must be committed to vigorous exercise.
19. I am not particularly interested in those physical activities whose sole purpose is to depict human motion as something beautiful.
20. Colleges should sponsor many more physical activities of a social nature.
21. For a healthy mind in a healthy body the only place to begin is through participation in sports and physical activities every day.
22. The least desirable physical activities are those providing a sense of danger and risk of injury such as skiing on steep slopes, mountain climbing, or parachute jumping.
23. Being physically fit is not the most important goal in my life.
24. A sport is sometimes spoiled if allowed to become too highly organized and keenly competitive.
25. I enjoy sports mostly because they give me a chance to meet new people.
26. Practically the only way to relieve frustrations and pent-up emotions is through some form of physical activity.
27. The time spent doing daily calisthenics could probably be used more profitably in other ways.
28. Given a choice, I would prefer motor boat racing or running rapids in a canoe rather than one of the quieter forms of boating.
29. Of all the kinds of physical activities, I don't particularly care for those requiring a lot of socializing.
30. One of the things I like most in sports is the great variety of ways human movement can be shown to be beautiful.
31. Most intellectual activities are often just as refreshing as physical activities.

## APPENDIX C (Continued)

32. Strength and physical stamina are the most important pre-requisites to a full life.
33. Physical activities that are purely for social purposes, like college dances, are sometimes a waste of time.
34. The self-denial and sacrifice needed for success in today's international competition may soon become too much to ask of a thirteen or fourteen year old girl.
35. I am given unlimited pleasure when I see the form and beauty of human motion.
36. I believe calisthenics are among the less desirable forms of physical activity.
37. Watching athletes becoming completely absorbed in their sport nearly always provides me with a welcome escape from the many demands of present day life.
38. If I had to choose between "still-water" canoeing and "rapids" canoeing, "still-water" canoeing would usually be my choice.
39. There are better ways of getting to know people than through games and sports.
40. People should spend twenty to thirty minutes a day doing vigorous calisthenics.
41. There is sometimes an over-emphasis upon those physical activities that attempt to portray human movement as an art form.
42. Physical activities having an element of daring or requiring one to take chances are desirable.
43. Since competition is a fundamental characteristic of American society, highly competitive athletics and games should be encouraged for all.
44. A happy life does not require regular participation in physical activity.
45. The best form of physical activity is when the body is used as an instrument of expression.
46. Sports are fun to watch and to engage in, only if they are not taken too seriously nor demand too much time and energy.

## APPENDIX C (Continued)

47. Calisthenics taken regularly are among the best forms of exercise.
48. I could spend many hours watching the graceful and well-coordinated movements of the figure skater or modern dancer.
49. The best thing about games and sports is that they give people more confidence in social situations.
50. Among the best forms of physical activity are those providing thrills, such as sailing in heavy weather or canoeing on river rapids.
51. Regular physical activity is the major pre-requisite to a satisfying life.
52. In this country there is sometimes too much emphasis on striving to be successful in sports.
53. I would enjoy engaging in those games and sports that require a defiance of danger.
54. Most people could live happy lives without depending upon frequent watching or participating in physical games and exercise.

## APPENDIX C (Continued)

## ANSWER SHEET

## Page 1

- |                        |                         |
|------------------------|-------------------------|
| 1. VSA SA A U D SD VSD | 24. VSA SA A U D SD VSD |
| 2. VSA SA A U D SD VSD | 25. VSA SA A U D SD VSD |
| 3. VSA SA A U D SD VSD | 26. VSA SA A U D SD VSD |
| 4. VSA SA A U D SD VSD | 27. VSA SA A U D SD VSD |
| 5. VSA SA A U D SD VSD | 28. VSA SA A U D SD VSD |
| 6. VSA SA A U D SD VSD | 29. VSA SA A U D SD VSD |
| 7. VSA SA A U D SD VSD | 30. VSA SA A U D SD VSD |
| 8. VSA SA A U D SD VSD | 31. VSA SA A U D SD VSD |

## Page 3

- |                         |                         |
|-------------------------|-------------------------|
| 10. VSA SA A U D SD VSD | 32. VSA SA A U D SD VSD |
| 11. VSA SA A U D SD VSD | 33. VSA SA A U D SD VSD |
| 12. VSA SA A U D SD VSD | 34. VSA SA A U D SD VSD |
| 13. VSA SA A U D SD VSD | 35. VSA SA A U D SD VSD |
| 14. VSA SA A U D SD VSD | 36. VSA SA A U D SD VSD |
| 15. VSA SA A U D SD VSD | 37. VSA SA A U D SD VSD |

## Page 2

- |                         |                         |
|-------------------------|-------------------------|
| 16. VSA SA A U D SD VSD | 38. VSA SA A U D SD VSD |
| 17. VSA SA A U D SD VSD | 39. VSA SA A U D SD VSD |
| 18. VSA SA A U D SD VSD | 40. VSA SA A U D SD VSD |
| 19. VSA SA A U D SD VSD | 41. VSA SA A U D SD VSD |
| 20. VSA SA A U D SD VSD | 42. VSA SA A U D SD VSD |
| 21. VSA SA A U D SD VSD | 43. VSA SA A U D SD VSD |
| 22. VSA SA A U D SD VSD | 44. VSA SA A U D SD VSD |
| 23. VSA SA A U D SD VSD | 45. VSA SA A U D SD VSD |
|                         | 46. VSA SA A U D SD VSD |

## APPENDIX C (Continued)

Page 4

47. VSA SA A U D SD VSD  
48. VSA SA A U D SD VSD  
49. VSA SA A U D SD VSD  
50. VSA SA A U D SD VSD  
51. VSA SA A U D SD VSD  
52. VSA SA A U D SD VSD  
53. VSA SA A U D SD VSD  
54. VSA SA A U D SD VSD

## APPENDIX D

KENYON'S INVENTORY BROKEN INTO NEGATIVE AND POSITIVE  
STATEMENTS ACCORDING TO DOMAINSSocial Experience

- 11. + The best way to become more socially desirable is to participate in group physical activities.
- 17. + I like to engage in socially oriented physical activities.
- 20. + Colleges should sponsor many more physical activities of a social nature.
- 25. + I enjoy sports mostly because they give me a chance to meet new people.
- 29. - Of all the kinds of physical activities, I don't particularly care for those requiring a lot of socializing.
- 33. - Physical activities that are purely for social purposes, like college dances, are sometimes a waste of time.
- 39. - There are better ways of getting to know people than through games and sports.
- 49. + The best thing about games and sports is that they give people more confidence in social situations.

Health and Fitness

- 4. + Physical education programs should stress vigorous exercise since it contributes most to physical fitness.
- 6. + The need for much higher levels of physical fitness has been established beyond all doubt.
- 10. - Of all physical activities, those whose purpose is primarily to develop physical fitness would not be my first choice.
- 15. + If given a choice, I sometimes would choose strenuous rather than light physical activity.
- 18. + A part of our daily lives must be committed to vigorous exercise.
- 23. - Being physically fit is not the most important goal in my life.

## APPENDIX D (Continued)

Health and Fitness (Continued)

- 27. - The time spent doing daily calisthenics could probably be used more profitably in other ways.
- 32. + Strength and physical stamina are the most important pre-requisites to a full life.
- 36. - I believe calisthenics are among the less desirable forms of physical activity.
- 40. + People should spend twenty to thirty minutes a day doing vigorous calisthenics.
- 47. + Calisthenics taken regularly are among the best forms of exercise.

Pursuit of Vertigo

- 1. - I would prefer quiet activities like swimming or golf, rather than such activities as water skiing or sail boat racing.
- 7. + Among the best physical activities are those which represent a personal challenge, such as skiing, mountain climbing or heavy weather sailing.
- 13. - Frequent participation in dangerous sports and physical activities are alright for other people but ordinarily they are not for me.
- 22. - The least desirable physical activities are those providing a sense of danger and risk of injury such as skiing on steep slopes, mountain climbing, or parachute jumping.
- 28. + Given a choice, I would prefer motor boat racing or running rapids in a canoe rather than one of the quieter forms of boating.
- 38. - If I had to choose between "still-water" canoeing and "rapids" canoeing, "still-water" canoeing would usually be my choice.
- 42. + Physical activities having an element of daring or requiring one to take chances are desirable.
- 50. + Among the best forms of physical activity are those providing thrills, such as sailing in heavy weather or canoeing on river rapids.

## APPENDIX D (Continued)

Pursuit of Vertigo (Continued)

53. + I would enjoy engaging in those games and sports that require a defiance of danger.

Aesthetic Experience

3. + The most important value of physical activity is the beauty found in skilled movement.
8. + Among the most desirable forms of physical activity are those which present the beauty of human movement such as modern dance and water ballet.
14. + Physical education programs should place much more emphasis upon the beauty found in human motion.
19. - I am not particularly interested in those physical activities whose sole purpose is to depict human motion as something beautiful.
30. + One of the things I like most in sports is the great variety of ways human movement can be shown to be beautiful.
35. + I am given unlimited pleasure when I see the form and beauty of human motion.
41. - There is sometimes an over-emphasis upon those physical activities that attempt to portray human movement as an art form.
45. + The best form of physical activity is when the body is used as an instrument of expression.
48. + I could spend many hours watching the graceful and well-coordinated movements of the figure skater or modern dancer.

Catharsis

12. + Almost the only satisfactory way to relieve severe emotional strain is through some form of physical activity.
16. - There are better ways of relieving the pressure of today's living than having to engage in or watch physical activity.

## APPENDIX D (Continued)

Catharsis (Continued)

- 21. + For a healthy mind in a healthy body the only place to begin is through participation in sports and physical activity every day.
- 26. + Practically the only way to relieve frustrations and pent-up emotions is through some form of physical activity.
- 31. - Most intellectual activities are often just as refreshing as physical activities.
- 37. + Watching athletes becoming completely absorbed in their sports nearly always provides me with a welcome escape from the many demands of present day life.
- 44. - A happy life does not require regular participation in physical activity.
- 51. + Regular physical activity is the major pre-requisite to a satisfying life.
- 54. - Most people could live happy lives without depending upon frequent watching or participating in physical games and exercise.

Ascetic Experience

- 2. + I would gladly put up with the necessary hard training for the chance to try out for the U.S. Women's Olympic Team.
- 5. - The years of strenuous daily training necessary to prepare for today's international competition is asking a lot of today's young women.
- 9. + I would get by far the most satisfaction from games requiring long and careful preparation and involving stiff competition against a strong opposition.
- 24. - A sport is sometimes spoiled if allowed to become too highly organized and keenly competitive.
- 34. - The self-denial and sacrifice needed for success in today's international competition may soon become too much to ask of a thirteen or fourteen year old girl.

## APPENDIX D (Continued)

Ascetic Experience (Continued)

- 43. + Since competition is a fundamental characteristic of American society, highly competitive athletics and games should be encouraged for all.
- 46. - Sports are fun to watch and to engage in, only if they are not taken too seriously nor demand too much time and energy.
- 52. - In this country there is sometimes too much emphasis on striving to be successful in sports.

## APPENDIX E

## JOURARD AND SECORDS' SELF-BODY CATHEXIS INVENTORY

## Self Inventory

Directions

This inventory consists of 80 items designed to sample your degree of satisfactions or feeling toward various characteristics of your self and body. There are no right or wrong answers. What is wanted is your own personal feeling about each given characteristic. Read each item and decide how you feel about it. Then circle your number answer in the space provided to the right of the word phrases. Be Sure To Respond To Every Item.

Mark:	①	2	3	4	5	if you have strong negative feelings.
	1	②	3	4	5	if you have moderately negative feelings.
	1	2	③	4	5	if you have no feelings one way or the other.
	1	2	3	④	5	if you have moderately positive feelings
	1	2	3	4	⑤	if you have strong positive feelings.

---

1.	sense of humor	1	2	3	4	5
2.	independence	1	2	3	4	5
3.	temper	1	2	3	4	5
4.	ability to express self	1	2	3	4	5
5.	self understanding	1	2	3	4	5
6.	artistic talents	1	2	3	4	5
7.	tolerance	1	2	3	4	5
8.	moods	1	2	3	4	5
9.	general knowledge	1	2	3	4	5

## APPENDIX E (Continued)

Mark:	①	2	3	4	5	if you have strong negative feelings.
	1	②	3	4	5	if you have moderately negative feelings.
	1	2	③	4	5	if you have no feelings one way or the other.
	1	2	3	④	5	if you have moderately positive feelings.
	1	2	3	4	⑤	if you have strong positive feelings.

---

10.	imagination	1	2	3	4	5
11.	popularity	1	2	3	4	5
12.	self-confidence	1	2	3	4	5
13.	ability to accept criticism	1	2	3	4	5
14.	memory	1	2	3	4	5
15.	thriftiness	1	2	3	4	5
16.	personality	1	2	3	4	5
17.	ability to concentrate	1	2	3	4	5
18.	procrastination	1	2	3	4	5
19.	self-assertiveness	1	2	3	4	5
20.	ability to express sympathy	1	2	3	4	5
21.	sensitivity	1	2	3	4	5
22.	ability to lead	1	2	3	4	5
23.	impulses	1	2	3	4	5
24.	intelligence level	1	2	3	4	5
25.	athletic skills	1	2	3	4	5
26.	happiness	1	2	3	4	5
27.	creativity	1	2	3	4	5
28.	love life	1	2	3	4	5

## APPENDIX E (Continued)

Mark:	①	2	3	4	5	if you have strong negative feelings.
	1	②	3	4	5	if you have moderately negative feelings.
	1	2	③	4	5	if you have no feelings one way or the other.
	1	2	3	④	5	if you have moderately positive feelings.
	1	2	3	4	⑤	if you have strong positive feelings.

-----

29.	sex appeal	1	2	3	4	5
30.	skill with hands	1	2	3	4	5
31.	gracefulness	1	2	3	4	5
32.	fears	1	2	3	4	5
33.	capacity for work	1	2	3	4	5
34.	ability to meet people	1	2	3	4	5
35.	vocabulary	1	2	3	4	5
36.	self discipline	1	2	3	4	5
37.	suggestibility	1	2	3	4	5
38.	will power	1	2	3	4	5
39.	ability to make decisions	1	2	3	4	5
40.	self consciousness	1	2	3	4	5

## Body Inventory

41.	hair	1	2	3	4	5
42.	facial complexion	1	2	3	4	5
43.	appetite	1	2	3	4	5
44.	hands	1	2	3	4	5
45.	distribution of hair (over body)	1	2	3	4	5

## APPENDIX E (Continued)

Mark:	①	2	3	4	5	if you have strong negative feelings.
	1	②	3	4	5	if you have moderately negative feelings.
	1	2	③	4	5	if you have no feelings one way or the other.
	1	2	3	④	5	if you have moderately positive feelings.
	1	2	3	4	⑤	if you have strong positive feelings.

---

46.	nose	1	2	3	4	5
47.	physical stamina	1	2	3	4	5
48.	elimination	1	2	3	4	5
49.	muscular strength	1	2	3	4	5
50.	waist	1	2	3	4	5
51.	energy level	1	2	3	4	5
52.	back	1	2	3	4	5
53.	ears	1	2	3	4	5
54.	age	1	2	3	4	5
55.	chin	1	2	3	4	5
56.	body build	1	2	3	4	5
57.	profile	1	2	3	4	5
58.	height	1	2	3	4	5
59.	keenness of senses	1	2	3	4	5
60.	tolerance of pain	1	2	3	4	5
61.	width of shoulders	1	2	3	4	5
62.	arms	1	2	3	4	5
63.	chest	1	2	3	4	5
64.	appearance of eyes	1	2	3	4	5

## APPENDIX E (Continued)

Mark:	①	2	3	4	5	if you have strong negative feelings.
	1	②	3	4	5	if you have moderately negative feelings.
	1	2	③	4	5	if you have no feelings one way or the other.
	1	2	3	④	5	if you have moderately positive feelings.
	1	2	3	4	⑤	if you have strong positive feelings.

---

65.	digestion	1	2	3	4	5
66.	hips	1	2	3	4	5
67.	resistance to illness	1	2	3	4	5
68.	legs	1	2	3	4	5
69.	appearance of teeth	1	2	3	4	5
70.	sex drive	1	2	3	4	5
71.	feet	1	2	3	4	5
72.	sleep	1	2	3	4	5
73.	voice	1	2	3	4	5
74.	health	1	2	3	4	5
75.	sex activities	1	2	3	4	5
76.	knees	1	2	3	4	5
77.	posture	1	2	3	4	5
78.	face	1	2	3	4	5
79.	weight	1	2	3	4	5
80.	sex organs	1	2	3	4	5