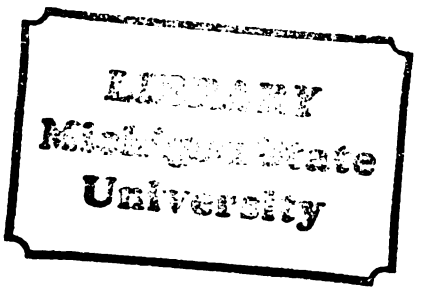

This is to certify that the

thesis entitled

PERCEPTION OF BODY IMAGE IN ADOLESCENTS
AGED 14 - 16 YEARS

presented by

Cheryl Anne Lauber

has been accepted towards fulfillment
of the requirements for

Master of Science degree in Nursing

Barbara Given

Major professor

Date 6/17/82

PERCEPTION OF BODY IMAGE IN ADOLESCENTS

AGED 14 - 16 YEARS

By

Cheryl Anne Lauber

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE IN NURSING

College of Nursing

1982

ABSTRACT

PERCEPTION OF BODY IMAGE IN ADOLESCENTS
AGED 14 - 16 YEARS

By

Cheryl Lauber

Adolescents face the problem of changing physical features which produce concerns about body image. The focus of the current study was to identify the body satisfaction of normal adolescents and to determine the relationship of parents, peers, sociocultural group and stage of sexual maturation to body satisfaction.

A volunteer sample consisted of 30 males and 81 females, aged 14 to 16 years. Data was collected on satisfaction with body parts and functions, agreement with environmental factors, and self-rated Tanner stage by questionnaire. Males and females had similar, slightly positive mean scores for body satisfaction. A rank ordering of means on the body items identified what parts and functions were most and least satisfactory. Correlational statistics demonstrated that the more conflict with attitudes of parents, peers and sociocultural group, the lower the body satisfaction. There was no relationship between sexual maturation and body satisfaction in males or females.

ACKNOWLEDGMENTS

I am sincerely grateful for the kind words of encouragement, guidance and expertise given me by my committee members: Barbara Given, Ph.D., Chairperson, Patricia Peek, M.S., Bonnie Elmassian, M.S., and Nancy Kline, M.N. I am also grateful to Rob Hymes for his help in the statistical analysis.

Above all my deepest appreciation is extended to my family for their continuous love and understanding throughout my graduate education. I owe a great debt to my husband, Peter, who was my best friend and champion, and to my children, Debbie and Steven, who never stopped calling me "Mom."

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CHAPTER I

THE PROBLEM

Introduction

A common problem that faces the primary care practitioner is adolescent concern with body image (Kimball & Campbell, 1979; Latta & Lee, 1981). Body image is a frame of reference which influences the ways in which a person perceives himself and his ability to perform (Norris, 1970). The feelings that are internalized regarding the appearance and functioning of one's physical body are integrated with spiritual, social and psychological factors to produce a picture of the body.

The adolescent is concerned with physical changes. His identity is so closely tied to perceptions of how his body feels and looks that the changes cause conflicts. The course of adolescent development is therefore often characterized by emotional highs and lows. Successful advancement to adulthood depends on resolution of conflicts and acceptance of adolescent change in body image. Often it is the primary care practitioner who first encounters and must evaluate the attitudes the adolescent has about his body (Schonfeld, 1963).

Development necessitates adaptation to the changes produced within the human organism, and by his life situation. Frequently the assumption in studies with adolescents is that a changing body produces bodily dissatisfaction (Schonfeld, 1963; Brown, 1977). Conclusions are limited

regarding the amount of dissatisfaction that can be considered as a normal part of development.

Most recent studies of adolescents have been with small groups of ill clients who are experiencing body image changes as a major consequence of the illness. The need for data on body satisfaction in healthy adolescents has prompted the current study.

Norris (1970) recognized the lack of nursing literature on body image and began to fill the gap with a conceptual approach that described body image. She wrote of the necessity of recognizing and predicting body image problems in hospitalized clients as well as prescriptions for intervention. The concept remains to be tested by nursing research.

With the increasing emphasis in nursing on wellness, ie. health promotion and disease prevention, has come the need for standards of health for the various age groups. The nurse who screens the adolescent in an out patient office must have data appropriate to that client who has no recognized illness. It therefore becomes important for nursing to identify normal values of body image through nursing research.

The focus of the current survey is to obtain data on a sample of healthy adolescents. The adolescents rate their satisfaction with body parts and functions (Clifford, 1971), and describe their feelings about how significant others feel about their bodies, and rate their stage of sexual maturation.

The normative data gathered will help to describe standards of body image for the healthy adolescent.

Purpose of the Study

The purpose of the research is to provide descriptive data on perception of body image of adolescents. Although studies of body image were done with large numbers in the early 1960's and 70's, there is no current literature reflecting sociocultural changes of recent years. There is no nursing research that deals with body image in the adolescent without illness. The study surveys body satisfaction in adolescents (attitudes toward their body), perceptions of the influence of environmental factors on body image and stage of sexual maturity.

Statement of the Problem

The survey will answer the following research questions:

1. How satisfied is the adolescent male with his body?
2. How satisfied is the adolescent female with her body?
3. What body parts are the most satisfactory to adolescent males?
4. What body parts are the least satisfactory to adolescent males?
5. What body parts are the most satisfactory to adolescent females?
6. What body parts are the least satisfactory to adolescent females?
7. What relationship exists between the environmental factors and the body satisfaction of the adolescent male?
   a. Which environmental factor, parents, peers or sociocultural, has the greatest relationship to body satisfaction in the adolescent male?
8. What relationship exists between the environmental factors and the body satisfaction of the adolescent female?
   a. Which environmental factor, parents, peers or sociocultural, has the greatest relationship to body satisfaction in the

adolescent female?

9. What relationship exists between stage of sexual maturation (Tanner Stage) and body satisfaction in the adolescent male?
10. What relationship exists between stage of sexual maturation (Tanner Stage) and body satisfaction in the adolescent female?

Conceptual Definitions of Terms

Body Image

Body image is the "picture of our own body which we form in our mind, that is, the way in which the body appears to ourselves" (Schilder, 1950). It is an internal image of the body formed by a person through the integration of his bodily experiences with the influential variables in his environment throughout the life span.

For this study body image is defined as the composite of the following perceptions: (1) personal feelings about body parts and functions or body satisfaction, (2) perception of the attitudes of parents, peers and sociocultural group toward one's body or environmental factors, and (3) perception of stage of sexual maturity or Tanner Stage.

Body Satisfaction

The direction and degree of feelings one has toward his body has been operationalized by Clifford (1971) and Secord and Jourard (1953) to measure body image. The assumption in studies of adolescents has been that a changing body induces a change in body satisfaction. Clifford found however, that adolescents tended to have more positive than negative feelings toward their bodies.

Environmental Factors

An adolescent in the course of development is exposed to pressures from his environment and learns to adjust or adapt himself to them (Schonfeld, 1963). The attitudes of parents leave lasting impressions from the early developmental years. The adolescent also derives attitudes toward his own body through comparison and identification with the bodies of other persons (Schonfeld, 1963). Peers become an important source of comparison during the adolescent years. The fantasy of an ideal body that is stressed by the adolescent's sociocultural group also influences his self perception. The definition used in this study includes the environmental factors, parents, peers, and sociocultural group.

Adolescence

Adolescence is the stage of development which, in Western society, bridges the gap between childhood and adulthood. As is true of other stages, the adolescent copes with certain tasks that measure his success at development and predict his progress to a more mature level of relationship (Havighurst, 1951; Erikson, 1968). Physical growth during adolescence is heralded by puberty and the maturation of the sexual characteristics of the body. Changes in appearance are usually dramatic.

Tanner (1962) found that girls begin the growth spurt at approximately 10 years and boys at 12 years. The upper age limits of adolescence have been variously set by many authors and seem to be less related to physical growth than social recognition as an adult (Mitchell, 1979).

Tanner Stage

The variability in time of onset and progression of puberty warrants the use of stage of sexual maturation rather than chronological age in

assessing various psychological measures with adolescents. Tanner (1962) standardized a set of five stages of development of the secondary sex characteristics, which progress from Stage I, prepubescent to Stage V, adult level.

Limitations of the Study

The limitations of the study are as follows:

1. The sample is limited to public high school students in two small cities in Michigan and findings may not be generally applicable to the larger population.
2. Due to the convenience sample used in this study, the findings may not be generally applicable to a larger population but only to the group of adolescents under study.
3. Clients who agree to cooperate in the study may be different from those who do not.
4. The self rating scale used for this research presents the usual problems of a person's tendency to present a favorable image of self by checking all positive responses, and others who always respond at the extreme ends of the scale or in the middle without regard to true feelings.
5. The environmental impact section of the instrument was developed by the researcher and has the limitations of validity and reliability of an untested tool.
6. The setting of the two sites from which the sample is obtained is different in terms of physical environment and the length of the researcher interaction with students.

Assumptions of the Study

Assumptions of the study are as follows:

1. The population is representative of adolescents attending school in these communities.
2. Terminology of the instruments is understandable to the adolescent client.
3. Adolescents are capable of self rating of body satisfaction, environmental influence and sexual maturity.
4. The instruments are sensitive enough to demonstrate perception of body satisfaction and description of factors influencing body image.
5. The adolescent is capable of participating in the study and answering questions consistent with his perceptions.

Overview of the Thesis

This study is organized into six chapters. In Chapter I an introduction and background of the problem is provided as well as a problem statement summarizing the areas of concern, the purpose of the study, conceptual definitions of the terms, a statement of research questions and limitations and assumptions of the study.

In Chapter II a conceptual framework for this study utilizing body image theory and developmental theory is discussed.

A review of the literature pertinent to this study acquainting the reader with existing research relative to what has been done in this area previously is presented in Chapter III.

An overview of the methodology and procedure for data gathering, a discussion of the population and samples taken, an explanation of the

instruments used, data collection procedure and scoring is presented in Chapter IV.

In Chapter V an overview of the data collected and a detailed discussion of the findings is provided.

A summary of the findings, conclusions drawn from the study and recommendations for further research is presented in Chapter VI.

CHAPTER II

CONCEPTUAL FRAMEWORK

Introduction

The concepts presented in this chapter include the development of adolescent body image and the nursing response to adolescent concerns. Body image is defined and discussed from psychological and developmental perspectives and related to a nursing model of body image development by Brown (1977). Characteristics of normal adolescent body image are outlined with attention given to the relationship of body image to adolescent developmental tasks. A framework for dealing with the concerns of adolescents regarding body image is derived from Orem's nursing theory.

Body Image Theory

Body image is a construct which helps to explain the relationship between the body and the mind of the total person. Several disciplines use body image to describe phenomena observed in human behavior.

Neurologists are aware of certain neurological lesions located in very specific parts of the brain that cause a change in how a person perceives his body. They hypothesize that certain areas of the brain's sensory cortex are responsible for integrating a person's past and present sensory experience into a unified whole. This concept was originally termed 'postural schemata' or 'body schemata', because it described how a person systematically arranged information into a plan or sketch (scheme) of himself (Schilder, 1950).

Psychologists observe that body image is very flexible and tends to be altered in the psychological turmoil of development, with stress, and as a result of psychotherapy (Norris, 1970). Psychologists use the concept to refer to how an individual perceives and reacts to physiological aspects of his body, in other words, a phenomenon of the interaction of one's personality with his body.

Freud placed great emphasis on body image as a precursor of ego development. The ego, he felt, was first a body ego, derived from bodily sensations, especially those from the surface of the body. In this context, body image may be regarded as a mental projection of the surface of the body. Ego development then proceeds using the body as a frame of reference (Witkin, 1965).

One's body plays a special role in the awareness of reality. One's own body becomes something apart from the rest of the world and serves to separate the self and the non-self. "The sum of the mental representations of the body and its organs, the so-called body image, constitutes the idea of I and is of basic importance for the further formation of the ego" (Fisher & Cleveland, 1968, p. 42).

Body image is a fundamental part of the self concept. A person becomes aware of his body appearance through inner sensation, external contacts and interaction with others. The information is uniquely computed with ego characteristics of the personality to form a personal identity, which explains the perceptual nature of body image. Often one's body image may be different from what another sees. A person forms opinions about his body given the information described above and his own mind set about his identity. Schilder defines the concept as "the image of our body which we form in our mind--the way in which our body appears to

ourselves" (1950, p. 11).

Sociologists explain the phenomenon of body image in terms of the influence of those around us. Much of body awareness is a result of the reaction of others to us. One develops an ego-ideal, an abstract concept of one you strive to be, based on identifications with parental models or those of significant others. One also identifies himself in terms of roles and positions that he takes in society.

Schonfeld organizes the information about body image into four classifications of the structure of body image: (1) the actual subjective perceptions of the body, both as to appearance and ability to function, (2) the internalized psychological factors arising out of the individual's personal and emotional experiences, (3) the sociological factors which include how parents and society react to the individual and how these are interpreted, and (4) the ideal body image formulated by the person's attitudes toward his body derived from experience, perception, comparison and identification with the bodies of other individuals (1963, p. 846).

Schontz (1974, p. 465) has developed a similar organization of body image with an emphasis on a hierarchy of levels of function. The first experience of body image in infancy is an awareness of the body as an object in space, which forms a basic framework for understanding subsequent stimuli. Awareness progresses from early egocentric feelings, to the division between self and non-self. Early childhood evaluations of good and bad body experiences plays a role in the dreams and fantasized, illogical ideas that the school age child holds about his body and his self image. As names are assigned to body parts and functions through formal learning, a more adult body concept is developed.

The following definition incorporates elements of each of the

perspectives addressed above:

> Body image is the constantly changing total of conscious and unconscious information, feelings and perceptions about one's body in space as different and apart from all others. It is a social creation, developed through the reflected perceptions about the surface of one's body and responses to sensations originating from the inner regions of the body as the individual copes with a kaleidoscopic variety of living activities. The body image is basic to identity and has been referred to as the somatic ego.(Norris, 1970, p. 42)

> The individual's attitudes towards his body can be expressed in terms of the degree of feeling of satisfaction or dissatisfaction with the various parts or processes of the body. (Secord & Jourard, 1953, p. 343)

Body image appears to develop over the lifespan in ways similar to the psychosocial stages of Erikson (1968). Ego identity is the core of his theory as well as body image development. Successful achievement of each developmental level is supportive to body image, even necessary for healthy functioning. Failure to achieve a developmental task can damage or impede body image development. In the next section the process of body image development using Erikson's framework is discussed.

Body Image Development

Erikson's theory of personality recognizes successive steps of interaction with people and events in one's life. Individuals confront psychosocial tasks at predictable points in their chronological age, which relate to the identity issues of that age. With successful mastery of the tasks comes optimal capacity for dealing with the identity issues of the future. However failure to complete a task implies a deficit in psychosocial ability which may affect future development of personal identity in a negative manner (1968).

Development of body image is guided by learning methods such as experience and trial and error. Thus as one grows older fewer and fewer

body image changes occur because life situations tend to reinforce previous impressions. While the young child has a very fluid body image, the adolescent is still dynamic, but the older adult will be less likely to alter his perception of his body when disruptions occur (Schilder, 1950).

Brown (1977) developed a nursing model of body image by including all the relevant factors which are most useful to nurses. In Figure 1 a model of body image is presented that includes three levels of bodily experience and six interactions of these bodily experiences with influential environmental factors. This interaction takes place over a time span shown by the headings at the left of the model, indicating that these interactions and their results differ according to the stage in the life span during which they occur.

Brown did not explain the significance of concentric circles to diagram the levels of body experience. Perhaps the circles correspond to her belief in man as a whole being, the sum of many parts. The concentric aspect may relate to the level of conscious awareness of the body experience.

The model consists of the following parts:

Innermost Somatic Experiences. Changes in metabolism are considered here. Endocrine sensations, such as those experienced from adrenalin release when under stress are experienced at this level. The hormonal sensations associated with the menstrual cycle are other examples.

Behavioral Bodily Experiences. The experience of motor ability, perception, cognition, and personality play an important role in establishing body image. Movement allows one's body to experience itself in different positions and environments. Perception of one's body is modified by the

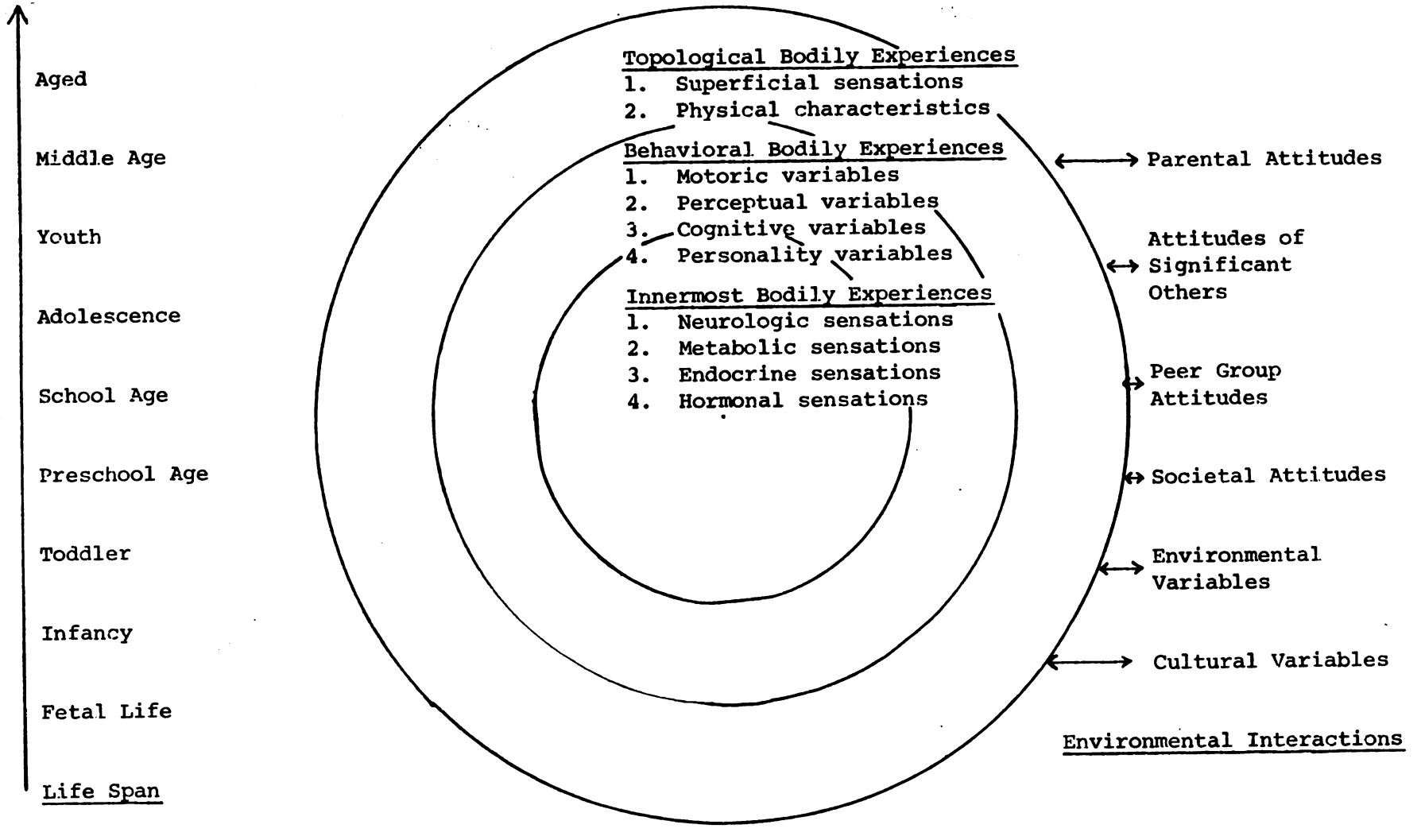


Figure 1. A Nursing Model of Body Image (From Normal development of body image, by M.S. Brown, New York: Wiley & Sons, 1977, p. 76)

accuracy of the sensory organs and the ability to interpret the sensations. As a child grows older he is able to evaluate sensations based on a personal value system and in harmony with his unique personality. The quality of abstract cognition is necessary to interrelate all the experiences into a mental image.

Topological Bodily Experiences. This category of bodily experiences refers to those experiences emanating from the surface characteristics of the body. Some of these are direct experiences and are similar in all people. The capacity for pain, pressure sensation, hearing, vision, and tast, for instance, are present in all normal persons, although the acuity of these senses may vary from person to person. Other characteristics are experienced in the context of their interactions (e.g., whether the culture values black skin, or the parents value a particular sex) rather than being experienced directly as are surface sensations.

Environmental Factors. Each of the sex variables, culture, parents, significant others, peers, society, and environment has a relevant influence on the development of body image. The arrows going in both directions, toward and away from the person indicate that the relationship is an interaction. This relationship has already been mentioned in relation to Erikson's concept of social relationships over the life span.

The Life Span. Finally, an arrow indicates the change expected in body image over time. The interactions and body experiences differ according to the stage in the life span during which they occur.

In summary, body image develops from the earliest perception of the infant (in Erikson's framework) as a separate 'object' from mother, to increasing control over his body in the toddler, to the intrusive, active exploration of others in the preschooler, to industrious self-interest

in the school aged, to extreme concern for body changes in adolescence. With advancing age the changes in the body relate to loss of one's former self with subsequent attempts to hold onto the past.

Adolescence is the particular stage of development characterized by the task of establishing a special, separate identity. The adolescent seems to replay all the identity issues of the past in an attempt to integrate his values and the realities of life (Erikson, 1968). The special issues of body image in adolescence will be expanded in the coming section on adolescent body image.

Adolescent Body Image

Adolescence is the developmental period marked by transition from childhood to adulthood. There is general agreement that adolescence begins with puberty and ends when the individual is recognized as an adult (Blos, 1962; Mitchell, 1979; Schonfeld, 1963). Psychological maturity is as important to this period as physical maturity. Blos describes adolescence as the "sum of all psychological processes of adaptation to the condition of pubescence" (1962, p. 2).

Some authors believe that adolescence covers too many years to properly be understood as one developmental period (McKinney, Fitzgerald & Strommen, 1977; Mitchell, 1979). The differences between the early and late years of adolescence are profound and should be treated as distinct periods. For instance an early adolescent period or 'child-adolescence' describes the 12, 13, or 14 year old boy and the 11, 12, or 13 year old girl (Mitchell, 1979). The middle or 'true-adolescent' describes the 14, 15, or 16 year old boy and the 13, 14, or 15 year old girl. The late or 'adult-adolescent' includes ages 16, 17, 18, and 19. Often, Mitchell

suggests, social circumstances or personal choice postpone the assumption of adult social roles so that the upper age limit may go as high as 20 or 21 years.

In Erikson's framework, the transition from childhood to adulthood involves successful achievement of tasks regarding ego identity. Havighurst (1951) formulated a set of developmental tasks based on societal demands. Adolescent tasks are expanded by Havighurst to include:

1. acceptance of one's physique
2. acceptance of one's masculine or feminine role
3. development of relationships with peers of both sexes
4. emotional and economic independence from parents
5. occupational preparation
6. achievement of intellectual skills
7. preparation for marriage and family
8. development of personal values and ethics
9. development of socially responsible behavior

Only the first task listed is considered relevant to the study of body image. However, aspects of other tasks may interface with the broad scope of body image development as described in Brown's model (see Figure 1).

Adolescence is characterized by rapid physical growth which changes the physical appearance and sensations of the body surface. Sexual function matures in response to hormonal stimulation with accompanying sex drives and disturbing inner somatic experiences (refer to Figure 1). Adolescence is also marked by ambivalence of emotions and behavior and by increased cognitive ability. Adolescents are more intensely aware of their bodies due to the increased emphasis on physical traits by peers

and increased identification with cultural standards. Body image undergoes restructuring in adolescence to accomodate the increases in size, in shape, in sexuality and the reactions to each (Schonfeld, 1963).

Tanner (1962) found that boys experience an acceleration of growth on the average from age 12½ to 15 and usually gain about 20 cm in height and 20 kg in weight. Girls begin growing about two years earlier, lasting from 10½ to 13 with a maximum gain of 8 cm per year. Every muscular and skeletal dimension of the body takes part. Head diameters change; cartilage in the wrist grows and ossifies; heart growth speeds up; abdominal fiscera size increase; reproductive organs enlarge; muscle strength improves and the face changes shape. Interestingly bone growth virtually ends with the fusion of the long bone epiphyses at approximately 17 3/4 years in boys and 16 1/4 years in girls, with standard deviations of about 10 months and 13 months respectively (Tanner, 1962, p. 27).

Reproductive organ growth affects the adolescent body image most significantly. The acceleration of penis growth begins usually at age 13 with completion about age 15. The first sign of puberty in boys however is usually growth in the testes and scrotum and increase in the amount and darkening of the pigment of the pubic hair. The first ejaculation of semen usually happens a year after the beginning of penis growth. About two years after pubic hair begins boys also experience the growth of axillary hair, facial hair and hair over the rest of the body. The larynx also enlarges and the male voice gradually deepens. Sweat glands enlarge and become active. The male breast also changes. The areola enlarges and darkens and in some there is also temporary enlargement of the breast tissue.

Breast development in girls usually begins by age 11 and reaches

maturity by about 14 years. Pubic hair proliferation and coloration corresponds to breast development. Development of the uterus and vagina begins about the same time as the breast. Estrogen activity increases the thickness of the vaginal epithelium and the uterine endometrium. Menarch almost always occurs after the high point of the growth spurt, usually around age 13 (Tanner, 1962, p. 28-39). Girls also experience the growth of axillary hair and the activation of sweat glands.

Differences in body size, shape and tissue structure between the sexes occurs because of differing growth rates during adolescence and the action of hormones. Males tend to achieve greater stature, have wider shoulders, and longer forearms and legs than females. Females develop wider hips and have somewhat greater subcutaneous fat especially in the calves and thighs. Boys have a large spurt of both muscle and bone size but tend to lose fat.

The body changes associated with sexual development and functioning as well as those changes related to physical size and strength demand modification of the adolescent's body image. To a large extent one's feelings of adequacy or inadequacy about oneself occur as a result of the real or imagined assessments of others. Therefore a boy or girl at puberty judges his or her adequacy as a male or as a female against a cultural standard or an idealized image (Hauck, 1970, p. 27).

Psychological adjustment is related to an individual's perception of how closely he achieves the social expectations for his own sex. Blos (1962) describes a body image principle of comparison of obvious physical changes with peers. Since acceptance of one's own physique and functioning is basic to personal identity (Erikson, 1968) each sex must deal with and integrate the changes of puberty. Being intimately bound to the

appropriate maturation of the external genitalia, the male identity suffers especially when development is late or less than optimal. Early maturers tend to be spared that concern. Early development in girls tends to have less impact than once thought. She may feel out of step with other girls her own age, but maturity is usually valued in our society (Blos, 1962). Her parents may be concerned about the dangers of her new sexuality. The late maturer is concerned with lack of usual female traits (Blos, 1962).

Growth patterns are not uniform, even within the individual (Blos, 1962; Tanner, 1962). Growth is dependent on the release of specific hormones from the anterior pituitary. The growth spurt is preceeded by an increase in growth hormone. Follicle stimulating hormone and luteinizing hormone control the secretion of the sex hormones, estrogen, progesterone and testosterone. Testosterone also appears to be responsible for the thick secretions of the skin oil glands which predispose to acne (Vander, Sherman & Luciano, 1975).

Acceptable body image and identity may be impaired by normal, unavoidable variations from the cultural stereotype of masculinity and feminity. Unusual muscular development and a flat chest may trouble the girl, while pudginess or a high voice may trouble the boy. Body image may also fail to evolve appropriately because of childhood unconscious fantasies and conflicts about one's sexual anatomy and functioning which are still unresolved (Group for the Advancement of Psychiatry, 1968).

Adolescent girls may also have trouble accepting menstruation as a change in body function. Whisnant and Zegans (1975) found that girls frequently stop talking about their body to peers near menarche. Many experience menarche as disturbing and frightening and are ashamed of it.

Some girls even avoid their fathers at the time of menarche. Some associate menstruation with defecation or soiling themselves, or at least with uncleanliness.

Deviations of physical maturation suggestive of inappropriate sexual development are particularly upsetting to adolescents (Schonfeld, 1963). Adolescents are characteristically concerned with normality (Blos, 1962). The distribution of body fat may make the overweight girl believe she is either infantile or sexually precocious. Boys may feel a babyish quality in the extra body fat or a girlish look to the excessive fat around the hips or breasts (Group for the Advancement of Psychiatry, 1968).

Secord and Jourard (1953) hypothesized that body image can be measured in terms of satisfaction or dissatisfaction. In a study of 340 adolescents between 11 and 19 years of age, Clifford (1971) found that overall adolescents show concern for the body but not as much dissatisfaction as thought. He supported similar findings by Schwab and Harmeling (1968) and White and Wash (1965) that girls have significantly more dissatisfaction than boys. The body dimensions most negatively perceived by both boys and girls are height, weight, chest, waist and hips. Clifford found no correlation between age of the adolescents and satisfaction with body parts and functions.

Schonfeld (1963) found that in a group of normal adolescents, 67% were dissatisfied with their bodies. Of the boys, 7.5% believed they were too short, while 22% of the girls believed they were too tall. Of the boys 22% showed dissatisfaction with breast size, size of genitals, amount of pubic hair, hip size and facial blemishes.

Often the feelings about one's body reflect the values of significant others. Having led a normal childhood, psychological problems may begin

with puberty as the child becomes aware (through increased cognitive development and/or peer influence) of the inferiority he was brought up to believe. The pre-adolescent who manifests a poor self concept due to disturbed parent/child relations, prolonged illness or other adjustment problems before pubescence may fail to adapt to the normal adolescent body changes (Schonfeld, 1963). Some adolescents with a variety of personality disorders may manifest their psychopathology through distortions of body image. For instance, a feeling of inferiority was shown in concern over the size of one's penis.

Behavioral experiences are influenced by the increase in cognitive ability during adolescence. Piaget refers to this as the stage of formal operational logic (1967). The adolescent adds to the ability to see from another's point of view, learned earlier, the ability to reason about the form as well as the content of a topic. He is able to consider what will not work as well as what will work. Possibilities are endless and help to explain the adolescent concern that he is being watched by others. Egocentrism is characteristic of this period, as evidenced in the notion that one's own feelings are unique. No one else can understand what he is experiencing (McKinney et al, 1977). However the capacity for abstract thinking, though immature and variable from one adolescent to another, is a tool for problem solving about the problems of being a teenager.

Adolescence is an interruption of the peaceful growth of childhood. Psychoanalytic theory suggests a psychic battle between the id and ego results in defensive behavior that is inconsistent and unpredictable (Freud, 1953). The adolescent's ego is immature and weak, intolerant of frustration and hampered by lesser ability to verbalize in favor of action. Actually an adolescent who is not bothered by this internal conflict

is considered abnormal, since it indicates a delay in development of a personal ego identity (Freud, 1953).

The only reference Freud makes to body image is a frequent ego defense mechanism that may lead on to more neurotic illness. The adolescent turns psychic energy inward which gives rise to overconcern for his body in the form of hypochondriacal feelings (Freud, 1953, p. 272).

Blos has a somewhat different perspective. Coping with the changes of puberty is the main task of adolescence according to Blos (1962). The physiologic changes of puberty give rise to impulsive behavior. Increased energy sometimes overrides thought and control mechanisms. Strong erotic and aggressive drives are characteristic of adolescence. As sexual organs mature eroticism and aggression may result in increased masturbation. Coping may be manifested by excitation, tension, self consciousness, opposition or rebellion, testing, and feelings of isolation, loneliness and confusion.

The adolescent is keenly aware of parental judgments and example. He continually compares himself with others. Peer groups provide a sense of belonging and a feeling of strength and power which serve as a kind of 'halfway house' for developing independence from parents. Often youngsters tend to conform in such things as dress, hairstyle, language and behavior to gain and maintain acceptance in the group (Mitchell, 1979).

In summary, the discussion of adolescent body image has been accomplished through developmental and psychological theory.

Integration with Nursing Theory

Orem's nursing theory describes the practice of nursing as "the ability to prescribe, design, manage and maintain systems of therapeutic self-care for individuals, in a balanced relationship with the individual ability to do so" (Orem, 1980, p. 18-19). Self-care is "the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health, and well-being" (p. 35). Self-care is therapeutic if it contributes to the achievement of normal functioning, normal growth and maturation, prevention of, control, or cure of disease, injury and disability (p. 40). Self-care is a practical response to an experienced demand to attend to oneself.

There are three kinds of self-care demands according to Orem's theory: (1) universal human needs, (2) developmental needs, and (3) health deviation (illness) needs. The focus of this study has been the developmental needs of normal adolescents. Since adolescence involves progress toward higher levels of organization of human structures and toward maturation, self-care demands may occur during adolescence (p. 41).

A major component of the developmental process is identifying and maintaining a realistic self-concept. A person must know and accept the reality of his structure and functioning. A person must take action to foster successful achievement of the psychosocial tasks of development. Developmental needs also require taking action to maintain health as one's body changes in the process of aging. Self-care during adolescent development therefore should be based on knowledge of what is natural and normal for individuals of that age, and ability to use resources for prevention of health problems.

Orem defines nursing activity in terms of three systems, each of

which requires a different role for the nurse and the patient in the performance of self-care. The patient's need and/or ability determines the system selected for intervention. The three systems are:

1. Wholly Compensatory System: The patient is unable to engage in self-care and the nurse compensates for the lack.
2. Partly-Compensatory System: Both patient and nurse act to overcome limitations to self-care involving ability to ambulate and perform basic human functions.
3. Supportive-Educative System: Patient is able to perform or can learn to perform self-care but cannot do so without assistance.

"Adolescents can learn and want to be responsible for their personal health-related care. They will also want and need guidance and supervision from a responsible adult, though at times they will resist these efforts" (p. 156). Adolescents need help to develop beneficial self-care practices. When other adult family members have incorporated practices harmful to health or adolescents have imitated harmful practices from peers or from other youth, nurses should give guidance to prevent health problems.

The normal adolescent does not need compensatory assistance because he/she is able to perform basic human functions without help, however he/she may need guidance to attain optimum health. It is the researcher's opinion that 'compensating for' an adolescent would not be in the best interests of the client, since the successful completion of the adolescent stage of development involves achieving independence from other adults. The most appropriate system of nursing intervention with normal adolescents is the supportive-educative system. Orem further explains the supportive-educative system as a supportive-developmental system, in

which a patient's requirements for assistance relate to decision making, behavior control, and acquiring knowledge and skills.

The adolescent experiences changes in physical appearance resulting from physical growth and maturation of secondary sexual characteristics. The mental perceptions of those physical changes, the increased energy levels and the increased ability of abstract thought influence changes in body image. Body image and developmental theory help to explain the phenomenon of identity crisis that often characterizes adolescence. Nursing theory interacts with body image theory in dealing with adolescent responses to development.

After assessment of the adolescent's stage of development, his behavior, his relationship, and the conflicts of internal imbalances, the nurse determines the limitations to self-care, and a decision to take nursing action can be made. The nurse chooses a nursing system to guide her actions, and implements the system by choosing activities based on Orem's methods of assistance: "acting for/teaching, guiding, supporting, and providing a developmental environment" (1980, p. 95).

Nursing assistance in the supportive-educative nursing system for the adolescent experiencing changes in body image focuses on promoting body satisfaction (see Figure 2). Education about the normal progress of growth and development is helpful. Counseling in the form of support and therapeutic listening may be needed to deal with the process of change. The nurse may also be involved in intervening with the significant others in an adolescent's life. Parents and other family members need to understand the concerns of the adolescent. They can learn strategies for dealing with adolescent behavior. Adolescent peer groups may effectively explore developmental issues. Self-care is completed

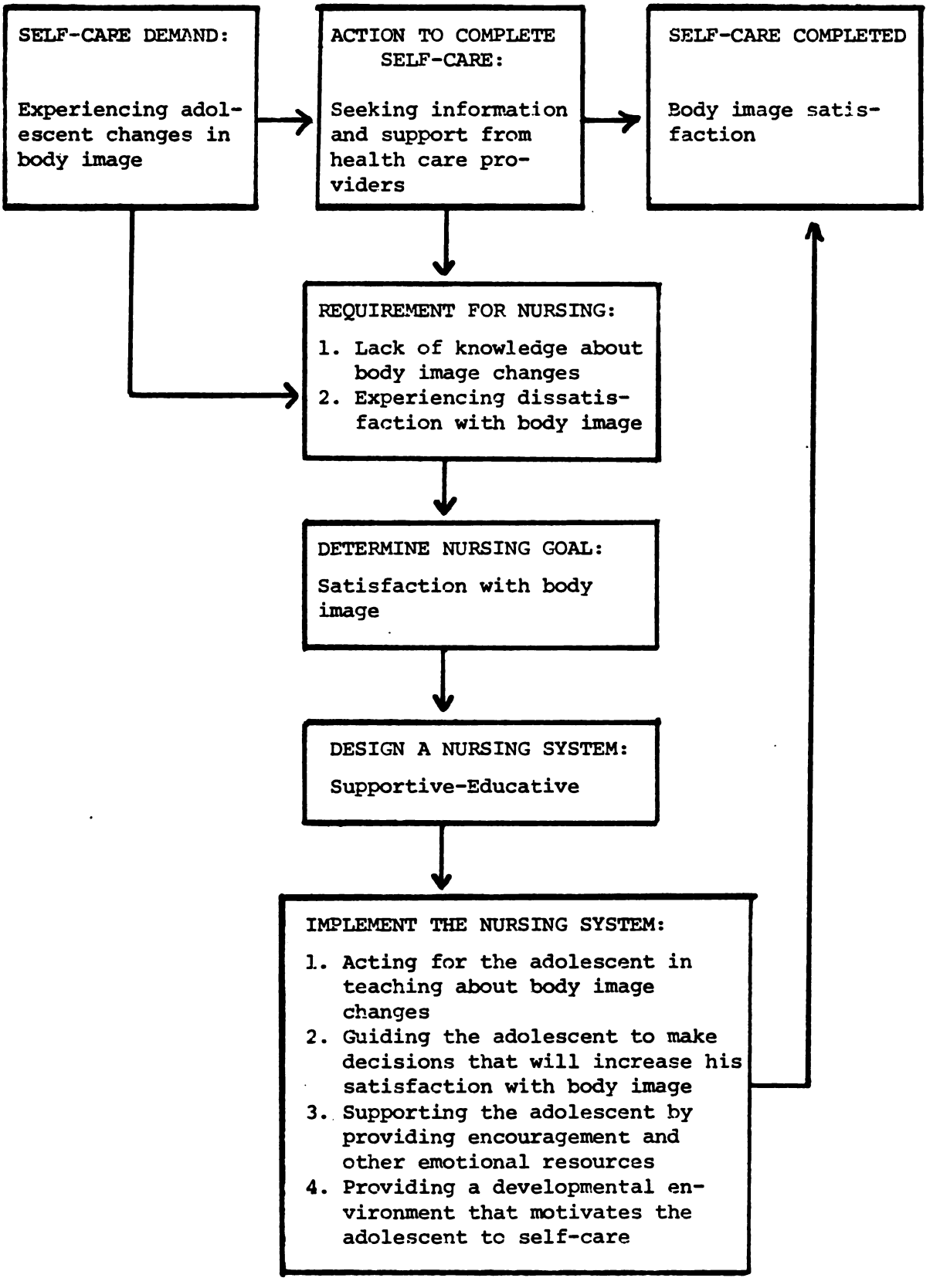


Figure 2. Operational Model of Orem's Self-Care Theory Applied to Adolescent Body Image.

when the adolescent experiences the goal of the nursing intervention (see Figure 2).

In summary, a discussion of body image theory and development, issues concerning adolescent body image, and a model for integrating body image theory with nursing theory has been presented in the preceeding chapter. In Chapter III the review of literature is presented including issues of body image and adolescent development.

CHAPTER III

LITERATURE REVIEW

Introduction

The review of the literature includes issues concerning normal body image and adolescent growth and development. The discussion of body image will be organized around the framework presented by Brown (1977, see Figure 1) which includes levels of bodily experience integrated with self evaluation or attitudes toward the body gained by interaction with others over time. Adolescent growth and development will include a discussion of physiological development and body image changes. The purpose of the literature review is to describe the phenomena of body image as it pertains to the particular adolescent stage of development.

Normal Body Image

Body image is defined as: "the constantly changing total of conscious and unconscious information, feelings and perceptions about one's body in space as different from all others. It is a social creation, developed through the reflected perceptions about the surface of one's body and responses to sensations...as the individual copes with...living activities," (Norris, 1970, p. 42).

There is considerable agreement that body image functions as a frame of reference which influences the ways in which a person perceives himself and his ability to perform (Brown, 1977; Fisher & Cleveland, 1968;

Norris, 1970; Schilder, 1950). We live as human beings with bodies. Body image, however, is an abstract and is, at best, described by its characteristics. Body image develops dynamically through experience with personal perceptions of one's own body over time and is integrated with perceptions of how others feel about one's body.

Brown (1977) used a scheme of levels of bodily experience to picture the characteristics of body image. The nursing model of body image (Figure 1) consists of three levels of bodily experience, innermost, behavioral and topological or surface, and the interactions of these experiences with influential environmental factors which take place over the life span from infancy to the elderly years. In other words the inner sensory impressions, psychological experiences, and physical appearance interact concurrently with external environmental introjected attitudes within the child's unfolding interpretation of these events, and are modified as a function of maturation, individuation and emotional growth (Becker, 1981). The components of Brown's model of body image development are defined and relevant information from the literature is reviewed in the following section.

Innermost Bodily Experiences. Innermost experiences are those events or sensations that originate from metabolic changes, from neurologic sensory sources, from endocrine release and from hormonal stimulation (see Figure 1). Innermost experiences help to make the individual aware of certain body parts and functions, thus affecting the image one has of his body.

Little has been concluded from the research about the influence of inner sensations and drives on the total body image. Basic metabolism consists of the release of and the synthesis of chemical compounds that

may directly or indirectly result in conscious sensations. An example of a sensation that originates as the result of metabolic activity is thirst. Thirst as a body experience becomes part of the body image as the event is given meaning by the mind.

An important neurologic sensation that originates from within is pain. Schilder (1950) believed that when pain was felt, it tended to change one's body image to emphasize that part, ie. to feel larger than usual.

Some innermost experiences come from neurological sensations such as proprioception. The activation of neural receptors in the joints make us consciously aware of the position of our bodies without help from the other senses (Vander et al, 1975). Shontz (1969) noted that internal cues from the body help to determine the limits of the body. Body image, Shontz concluded, is the product of the peripheral active and passive sensation and the integration and control from the central nervous system. Thus interruption of the innermost neurological sensory pathways due to trauma or illness led to problems in determining the boundary of the body. One's image of his body became confused because of a change in innermost sensory experience.

Endocrine and hormone secretion act as important regulators of body functions such as the hormonal response to stress which increases heart rate and respiration and causes skeletal muscular tension. One's awareness of the body parts and functions are improved through the experience of changes in rhythms and contraction, etc. caused by the innermost endocrine and hormonal stimuli. Schilder (1950) speculated that an aspect of body image was the control over involuntary body processes one gains from conscious awareness of internal changes.

In summary, innermost bodily experiences make the individual aware

of internal body parts and functions. The innermost sensations also help to distinguish the boundaries of one's body. As the individual synthesizes this information with the other bodily experiences and values of others about him an image of one's body is formed.

Behavioral Bodily Experiences. The behavioral experiences are those events that originate from motor activity, perception, cognition and personality variables (see Figure 1). The behavioral level of body image was explored by Schilder (1950) when he observed that individuals alter their picture of themselves with each new posture and shift in stance. He believed that one perceived his body differently as patterns of muscle tone vary. Schilder's theory of body image was derived from observation and hypothesis of the cause of problems in body perception that he had seen in his practice. He concluded that the maturation of the nervous system and motor activity improve the number and quality of stimuli about the body that the infant experiences as he grows. In turn he hypothesized that losses of sensation and motor ability, such as in traumatic paralysis, or in the normal elderly, would change the information and thus the perception of one's body.

Another aspect of the interpretation of body image at the behavioral level may be found in the variable perceptual and cognitive abilities of people. The perception of events can be altered by drugs, hypnosis, the loss of sensory organs, and by orientation to events in space (Fisher & Cleveland, 1968; Wapner & Werner, 1965). Perceptual and cognitive abilities mature as one ages.

Anthony (1967) reported that children most often perceive their bodies as a 'house.' The house illustration is represented by one six year old who commented, "The body is a house. It's got an outside and

an inside. It's got windows up here (pointing to his eyes) and a door (pointing to his mouth). It's also got a garbage disposer which we haven't even got at home," (p. 1103).

Anthony believes that children intuitively grasp some body image issues. The same boy remarked that he thought Dr. Anthony would like "to change houses," a statement that Anthony attributed to the boy's sensitivity to Anthony's dissatisfaction with his own body.

Anthony's article is not a research study. He does quote from other theorist's work, but there are no references. It is simply a paper that illustrates from personal counseling experiences the theory of body image development.

Piaget elaborated on the change in cognitive and perceptual capacity that initiates a more abstract approach to perceptions of the body experience as one matures (1967). In his theory of cognitive development, the period of formal operations begins about age 12. The average early adolescent becomes capable of considering situations that do not exist in his actual world. He is capable of evaluating many factors to solve a problem. Abstract thought fosters an interest in the ideal, making the adolescent capable of appraising the many outside standards of appearance and behavior.

Piaget presented the only well elaborated and integrated theory of cognitive development. He has been criticized for his limitations (i.e. no explanation of individual differences) and lack of objectivity of methodology (his most important subjects were his own children). But his theory has stimulated much thought for other researchers and is well respected.

The behavioral bodily experience of perception of one's body may

also be defined by sex. Erikson (1968) reported on an observation study of early adolescent boys and girls, aged 10, 11, and 12, in California in the early 1950's. Over a span of two years he saw 150 boys and 150 girls on three occasions and presented them with the task of constructing a scene with toys on a table. Though Erikson's purpose was to compare the play structures with biographic data of each child, he found a comparison of the structures between the sexes a more interesting observation. He concluded generally that boys and girls use space differently. Girls tended to build scenes that represented interiors of buildings with only a low wall, if any, enclosure. The people or animals in the scene were usually not moving or doing sedentary activities. Boys usually built scenes of high towers or elaborate exterior structures. Objects were moving and often dangerous activities were portrayed.

Erikson made the following interpretations of the structured play: (1) a difference exists between the sexes in the experience of the human body; (2) those differences correspond to the male and female construction of the body; (3) the natural perceptive differences that this activity indicates, has implications for understanding male and female identity in terms of basic anatomical differences.

These interpretations must be considered in light of the pervasive Freudian psychological perspective at the time and the sociocultural acceptance of fairly rigid masculine and feminine roles. It seems naieve to conclude that there is such a thing as a "natural" perceptive difference in sexes that is unaffected by the environmental influences such as social and cultural values. Other methodological problems suggest some question about the conclusions, i.e. the sample was not random and no mention is made of attempts to control for extraneous variables. The

purpose of the observation was admittedly different so that unforeseen variables may have been operating to bias the results.

Personality variables associated with body image, which Brown (1977) included at the behavioral level in her model are less well documented in the literature. Brown suggests that the tendency toward aggression or passivity may be characterized in the body image. This needs further study to warrant inclusion in the theory.

Freud (1953) believed the body was an initial contributor to understanding of the ego. But he stated that "the ego is derived from bodily sensations, chiefly from those springing from the surface of the body. It may thus be regarded as a mental projection of the surface of the body," (p. 31). Freud placed considerable importance on the anatomical differences between the sexes. He concluded that the actual physical differences in the form and appearance of the male and female bodies may be the source of the differences in body attitudes.

In summary, the behavioral bodily experiences make the individual aware of his body through sensation of changes in position, and through the perception of one's body in relation to age, cognitive ability and sex. An image of one's body develops as behavioral experiences are integrated with innermost bodily experiences, topological bodily experiences and the values of others about him.

Topological Bodily Experiences. Topological experiences are those events that originate from sensations on the skin surface and the physical characteristics of the body surface (see Figure 1). Anatomical differences are related to the topological level of bodily experience. In addition to shape and contour, pain, pressure, and other sensory experiences are considered part of this level of sensation (Brown, 1977).

Awareness of the surface body experiences involves evaluation of personal appearance against culturally and socially defined standards. Therefore a major consideration of body image research has been measurement of attitudes toward the body.

Secord and Jourard (1953) performed a series of studies to determine how people differ in the degree of satisfaction (cathexis) expressed for various body parts. In one study with 70 college males and 56 females, 46 body parts and functions were rated for satisfaction and a mean score calculated. Males had a mean score on a scale of 1 to 5 of 3.43 and females of 3.46. The split-half reliabilities reported were .78 for males and .83 for females. The conclusions were discussed in terms of the negative nature of the attitudes, which was interesting since the direction of the responses was above the mid point of the scale, suggesting a positive direction. Also the sample was not described at all, making generalizability questionable.

Although body satisfaction is not specific to topological bodily experience, most of the body parts were those that are valued depending on one's perception of the body surface characteristics. Therefore it was determined that one's satisfaction with the body surface size and shape was indicative of one's body image.

Interest in the topological bodily experiences prompted Fawcett and Frue to study body perception and attitude in order to understand the dimensions of body image. They defined the dimensions as body space (the mental experience of physical appearance), body attitude (the overall emotional reaction to outward appearance) and body cathexis (the degree of satisfaction with components of the body). With 62 volunteers who were free of physical illness or deformity, aged 18 - 40 years, they

found low Pearson Product-moment coefficients between body space, body attitude and cathexis, and no differences between sexes. Fawcett and Frye came to the conclusion that the variables may be independent, thus representing separate dimensions of body image.

The conclusion that the variables may be independent contrasts with the philosophy of the interrelated nature of body image presented in this study. One explanation may be in the inefficiency of their instruments to measure the concepts. For instance, the body perception variable was measured by means of a topographic device in which individuals pick a circle that most closely represents the space their body would occupy if it was encased in a cylinder. Though the test-retest reliability coefficient was .74 for a one week period, it is possible that this is an isolated perceptual ability, not representative of the total body perception variable.

The study may have been strengthened by the addition of a second instrument to measure body perception. They would have been able to discriminate the most sensitive instrument and the relationship between measures of perception.

Kurtz (1969) used the same body attitude scale as Fawcett and Frye with the specific purpose of noting differences between the sexes. His study found that females have a greater awareness of their bodies and like them better than males. Males, he found, feel they are stronger than females. His study was done on 89 males and 80 females, aged 18 to 23, using a 30 item questionnaire of body attitudes on a seven point semantic differential type scale. The different conclusions from the Fawcett and Frye study are unexplained, especially since their samples were quite similar. It may be concluded that sex differences in body

image are a major variable to be studied.

In summary, the topological bodily experiences increase the awareness of the surface characteristics of the body. Awareness of the body surface leads to attitudes of satisfaction or dissatisfaction which influence one's image of the whole body.

Environmental Factors. The environmental influences on body image as described by Brown (1977) are cultural, parental, significant others, peers, society, and other environmental variables. The formation of attitudes about the body happens through the interaction of important people with the person over time. These interactions are often influenced by social expectations. A child learns attitudes by observing other's reactions to his behavior. Physical appearance is the first point of contact between individuals, Shontz (1969) points out. Appearance identifies sex, race, age, attractiveness and social status. Stereotypes develop which influence the impressions one has about one's body image.

Jourard and Secord (1954) dealt with the issue of a stereotype of the ideal figure in a study with a group of 60 college females, 18-36 years. The subjects rated their satisfaction with 12 body parts thought to have the most stereotyped size values. They then estimated their height, weight, size of bust, waist and hips and the ideal size of each. Finally, actual measurements were taken of each of the factors.

The women in this study were unable to estimate their actual size on any item and they considered the ideal to be smaller as far as height, weight, waist and hips were concerned, than themselves. They believed the ideal bust size was larger than themselves. The cathexis was positive in regards to smaller size except for bust and negative in regards

to larger size except for the bust. The researchers determined the presence of an ideal figure by the smaller variability of estimates of ideal size compared with self-estimates. The study used a small, convenience sample and descriptive information on the sample was not available. No reliabilities were reported, so some question exists about the value of the research. The concept of a female stereotype however was an important one to consider as a part of environmental influences on body image.

In a similar study with 62 college males, Jourard and Secord (1954) proposed to find out whether actual measured size of body parts was correlated with body cathexis in the male. A body cathexis scale of 40 parts was administered and scored on a five point scale. Measurements of height, weight, shoulder width, chest and biceps circumference were made. The results showed that the larger the size, the stronger positive the feeling for that part. The smaller the size, the more negative the feeling. The only exception was weight.

This second study by the researchers on ideal size of body parts had similar methodology problems as the first. The researchers used a non-randomized sample and failed to report reliabilities. The results were interesting however, in that both sexes showed stereotyped attudes toward certain body parts.

There were no studies that differentiated between the environmental factors. There were no studies of the relative difference in importance between the environmental influences.

In summary, the environmental factors related to body image have been studied only in terms of social stereotypes of the size and shape of body parts. One's perceived conformity to the ideal figure affects

the image one has of his body.

The Life Span. A change is expected in body image over time. The issue of age differences in body image is conceptually based on the social and psychological tasks that are characteristic of each stage of life (Erikson, 1963; 1968). There seem to be no studies that have longitudinally studied life span differences in body image of the same individual.

Body image of children has been measured by means of drawing techniques or other general psychologic testing. Both techniques include information that is not specific to body image. Fisher and Cleveland (1968) reported that the value of drawings was questionable and seemed to show only that distinction of parts increased with age while attitudes were inconsistently evaluated. The data from adolescents will be included in the next section of the literature review.

In summary, body image varies as innermost bodily experiences, behavioral bodily experiences, and topological bodily experiences and environmental factors change over the life span. Documentation was limited regarding measurement of body image over time.

Body image has been described from Brown's model (Figure 1) in terms of its component parts. Information from innermost sensations was integrated with experiences of behavioral ability and topological body surface experiences. Evaluation of the meaning of experiences was gained by interaction with influential people in the environment and by how they were related to age in the life span.

Adolescent Growth and Development

Adolescence is generally accepted to be one of the eight stages in the development of man (Erikson, 1963; McKinney et al, 1977).

Chronologically, the adolescent stage takes place between the ages of 10 and 20. More accurately, however, a child begins adolescence when he or she begins sexual development (puberty) and advances to the next stage when sexual maturation is complete (Erikson, 1963; Mitchell, 1979). Blos (1962) noted that development in adolescence requires a process of psychological adaptation to the changes produced by puberty.

Puberty can be defined as a transition period that takes the individual from biologic immaturity to maturity. During this period of developmental transition, dramatic physical changes of many types occur, the most visible ones being the acceleration in skeletal growth and the development of secondary sex characteristics. There is great variability in the ages at which these processes begin and end (Blos, 1962; Group for the Advancement of Psychiatry, 1968; Tanner, 1962).

As a result of the interaction of hormonal stimulus and genetic and environmental factors, children experience a marked increase in the velocity of their skeletal growth during puberty. In girls, the maximum growth rate occurs at an average age of 12.14 +/- .88 years (mean +/- standard deviation), whereas in boys the major portion of the adolescent growth spurt does not occur until some two years later, 14.06 +/- .92 years (Marshall & Tanner, 1969; 1970). Because of this sex difference in the timing of the adolescent growth spurt, it is common for girls to be taller than boys of the same age from about age 11 to age 14. In mid-adolescence, however, onset of the male peak growth velocity coincides with the usual deceleration in further height changes in girls and results in boys attaining, on the average, a greater height (Marshall, 1975).

Marshall notes that the adolescent growth spurt does not start at the same time in all parts of the body. For example, growth of the

foot typically begins about four months earlier than growth in the lower leg, with the result that the feet may temporarily appear to be disproportionately large (1975). This differential growth rate may at times conflict in the body image for the adolescent who has no knowledge of the fact that things will soon return to more harmonious relative proportions.

The progress of events in sexual maturation has been described by Tanner (1962) as a series of stages of development. He found significant correlation between the presence of pubic hair and the size of gentalia for boys, and pubic hair alone for girls. He also showed consistency in breast development for girls.

In males, Stage 1 is pre-adolescent. The testes, scrotum and penis are about the same size and proportion as in early childhood. There is no pubic hiar. Stage 2 is marked by enlargement of the scrotum and testes. The skin of the scrotum reddens and changes to a rougher texture. There is little or no enlargement of the penis at this stage. The pubic hair is darker, coarser, slightly curled and at the base of the penis. In Stage 4, there is increased size of the penis with growth in breadth and development of glands. There is further enlargement of the testes and scrotum and increased darkening of the scrotal skin. The pubic hair resumbles adult type, but the area covered is considerably smaller than adult. In Stage 5, the genitalia is adult in size and shape. The pubic hair is also adult in type with distribution of the horizontal pattern and spread to the surface of the medial thigh.

Axillary hair usually first appears some two years after the beginning of pubic hair growth in both sexes. In boys facial hiar begins to grow at about the same time as axillary hair. Voice changes in males

reach their peak at about Stage 5. The first ejaculation of semen in boys occurs about a year after the beginning of accelerated penis growth. Menarche in girls occurs after the apex of the height spurt has passed, corresponding approximately to Stage 4 of breast development (Tanner, 1962).

Breast development in girls progresses from Stage 1, which is pre-adolescent with elevation of papilla only; to Stage 2, breast bud stage; to Stage 3, which shows further enlargement and elevation of breast and areola; to Stage 4, in which the areola and papilla are projected above the level of the breast; to Stage 5, which is the mature stage and in which the areola is recessed into the contour of the breast. Pubic hair development is the same for girls as boys, except that the adult distribution is more of an inverted triangle formation (Tanner, 1962).

There are large variations in the normal range of sexual development. Some may begin Stage 1 as early as 10.5 years while others not until 14.5 years. The range for completion of Stage 5 is from 12.5 to 16.5 years (Friedman & Goldberg, 1980; Tanner, 1973).

Harlan (1979) reported from the United States Health Examination Survey on over 7,000 males aged 12 to 17 years, tested between 1966 and 1970 (see Table 1).

Table 1. Percent of White Males per Tanner Stage (Harlan, 1979).

Age	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
12 (n = 540)	32	42	19	6	1
13 (n = 538)	12	31	25	25	7
14 (n = 525)	4	10	19	37	30
15 (n = 522)	1	3	7	37	52
16 (n = 495)	0	1	2	20	77
17 (n = 417)	0	0	0	9	91

Each age group experienced some who were in different stages for pubic hair than for genitalia, but the differences were not significant. The figures above make it possible to make generalizations such as, "it would be uncommon to find a boy of 15 with less than Stage 3 development," (Harlan, 1979, p. 295), or a 12 year old boy at Stage 5, etc. This was the first large scale sampling ever done with this data and it served to support the conclusions of Tanner about orderly progression of sexual development and the approximate chronological ages for each stage.

Tanner staging is now being used for self-assessment of sexual maturity in adolescents to give a biological context with which to integrate sociological, psychological and physiological factors (Duke et al, 1980; Morris & Udry, 1980). Since chronological age may be less of a factor in adjustment to puberty than sexual development, this information is of value to research.

Duke et al (1980) confirmed the ability of adolescents to accurately rate their stage of sexual development using pictures and descriptions developed by Tanner. They compared self-assessment with physician assessment in groups of 66 males and females, aged 9 to 18. The researchers reduced the female rankings to one stage because they believed stages of breast and pubic hair development in girls was very closely related. In their sample 11% were in Stage 1, 29% in Stage 2, 22% in Stage 3, 17% in Stage 4, and 21% in Stage 5.

The small size of the sample limited the generalizability, though the research design seemed free of bias and posed important considerations for use of this technique in research where physical exam is not feasible.

Morris and Udry (1980) also studied the ability of adolescents to

rate their stage of sexual development. A group of 47 females and 48 males, aged 12 to 16 were conveniently chosen from the researchers' medical practice to rate their stage according to drawings of Tanner's stages. Subsequent physician ratings were correlated with the self-assessments and Pearson correlation coefficients of .60 for males and .63 for female breast development and .81 for pubic hair development were obtained. Generalizability was limited by the small sample size and convenient sample. The value of a means of self-assessment of Tanner stage and the fact that two groups of researchers simultaneously studied similar techniques adds credibility to the study.

Scanlon (1975) also using data from the U.S. Health Examination Survey of adolescents, reports the following findings about attitudes about physical appearance:

1. Weight
    a. About 66% of the total group perceived their weight to be about right. However 70% of the boys believed they were the right weight while 63% of the girls believed they were the right weight.
    b. Of the boys who thought they were not the right weight, 18% believed they were underweight and 12% believed they were overweight.
    c. Of the girls who thought they were not the right weight, 9% believed they were underweight and 28% believed they were overweight.
2. Height
    a. 58% of both sexes felt they were the right height, while 7% would like to be shorter and 35% would like to be taller.

b. Only 48% of the boys felt they were the right height; 2% of the boys would be shorter and 50% would prefer to be taller.

c. On the other hand 68% of the girls were satisfied with their height; 13% would be shorter and 20% would be taller.

The differences between boys and girls in the Scanlon study, in regard to self-perception of body weight were striking. Proportionately more boys than girls considered themselves about the right weight. Of those who did not, boys were twice as likely as girls to consider themselves underweight. Girls, on the other hand, were more than twice as likely as boys to consider themselves overweight. Almost half of all the girls would like to be thinner than they were.

Girls were more likely, according to Scanlon's study, than boys to express satisfaction with their present height. About half of all boys stated they would like to be taller than they were.

Adolescents who develop more slowly than their peers from the viewpoint of sexual and physical development may account for some of the dissatisfaction noted in perceptions of physical appearance. A delayed puberty diagnosis can be made if boys have no testicular growth by age 14 and who have not experienced a skeletal growth spurt by age 16. Girls who have not begun breast growth by age 14 or who have not experienced a skeletal growth spurt by age 15 may be considered delayed (Erickson & Friedman, 1978).

Delayed sexual maturation in girls has not been reported to cause serious psychosocial problems for the majority of affected individuals. Late-maturing girls are much more likely to be well accepted by their peers than are very early-maturing girls who may be perceived in a

threatening way by peers as well as by adults (Gross & Duke, 1980). In contrast, boys with delayed puberty are handicapped in a number of ways (Clausen, 1975). Their lack of muscle development and short stature creates a gap between their athletic prowess and that of others of the same age. Because they are usually shorter than girls in their class and also appear childlike, they are handicapped in heterosexual and heterosocial situations. Leadership roles during junior and senior high school years more typically go to early-maturing boys than to boys with delayed adolescence.

In a study of 90 normal students the early-maturing boys were perceived by adults as more poised, relaxed, good-natured, and unaffected than the lated maturers. Peer ratings described the early-maturers as more attractive and popular than the late maturers. The late-maturers were seen by their peers as less good looking, less grown up, more attention-seeking, bossy, restless, and talkative (Gross & Duke, 1980).

The early-maturing girls in the same study were taller and heavier during early adolescence, while the late-maturers were shorter until age 15 and slightly below the group mean for weight throughout adolescence. In contrast to the boys in the same study, the early-maturering girls were below average in prestige, popularity, sociability, leadership, cheerfulness, poise and expressiveness than the norm. Late-maturers excelled in these characteristics as well as in personal appearance and attractiveness (Gross & Duke, 1980).

Adolescents who appear to be physically different from their peers may have problems of body image, which affects their behavior. The feeling of being different seems to be a great concern to adolescents and may account for considerable anxiety or dissatisfaction when they

feel outside the group norm (Dempsey, 1972; Erickson & Friedman, 1978; Schonfeld, 1963).

The rapid physical changes occuring in adolescence force the adolescent to re-evaluate the body image which was developed as a child and to form a new body image appropriate to the maturing self (Schonfeld, 1963). Some studies suggest that adolescents wish to change their appearance, especially weight, among girls (Mitchell, 1979).

Female concern with weight was the topic of research done by Dwyer et al (1969). He found that adolescent girls and boys are concerned with weight. However when asked why they diet, girls stated they wanted to change specific parts of their bodies, while boys wanted to be more physically fit. He concluded that girls have a tendency to judge their bodies on a part by part basis and have a clearer view of what they like and dislike about their bodies than boys do. The parts most often in need of change, according to girls were bust, hips, waist, hips and abdomen.

The Committee on Adolescence (Group for the Advancement of Psychiatry, 1968), in a summary of the then current thinking about adolescent development, addressed the issue of male and female differences in attitudes toward the body parts. They stated that males are concerned about height, muscle size, shoulder width and hip size. Females however, are more concerned with being too tall, breast size, hip size and being overweight.

Hacklander (1968) also found that boys were concerned about height and rated it as dissatisfactory more often than any other body part. In contrast to the Committee on Adolescence, however, she found that boys rated muscle development and muscle coordination as satisfactory, indicating

there was relatively little negative concern for those body parts. Girls in Hacklander's study rated teeth and eyes as the most satisfactory items and weight and hips as the most dissatisfactory.

Hacklander's sample was 521 high school students, 13-19 years old, who volunteered to take the questionnaire. Her list of parts was limited to 23 since she eliminated functions which didn't relate to the other part of her study (clothing). This constriction makes her study less comparable to others on body parts.

A study by Clifford (1971) with 340 public school students aged 11 - 19 assumed that a changing body produces dissatisfaction which leads to anxiety and implications for behavior. His study replicated the body cathexis study of Secord and Jourard (1953) with the exception of a few items on the scale. He found the mean boy's score was 3.71 and the girls was 3.39 which was significant at the $p<.001$. The difference in means between the sexes was greater than Secord and Jourard found. Adolescent boys in Clifford's study showed more satisfaction with their bodies than older males in Secord and Jourard's study while adolescent girls showed more dissatisfaction with their bodies than older girls. Clifford did not find any relationship to age within his group however. Also in Clifford's study, in contrast to Hacklander (1968), Dwyer (1969), and Scanlon (1975), boys and girls showed equal concern for height, weight, bust, waist and hips. He emphasized, as Secord and Jourard (1953) did not, that adolescents have some concern and dissatisfaction for growing, changing bodies, but they have more satisfaction overall with their bodies.

A group of 326 male high school students took a large questionnaire on self image administered to study that concept in typical (normal)

teenagers by Offer (1969). One section of the questionnaire addressed body image concerns. To strengthen his idea that normal adolescents may have considerable concerns about the self and yet function without problems, Offer eliminated those students with history of mental disturbance, those whose parents identified emotional problems, and those whose scores fell outside one standard deviation from the mean in at least 9 of the 10 scales on the questionnaire. The results from the remaining 106 students showed that this group did rate themselves below the midpoint on every question concerning body image.

From a scale of 1 to 6, the students' mean scores ranged from 2.04 to 3.43 on statements such as: I am proud of my body, I feel strong and healthy, I am satisfied with changes in my body. These findings according to Offer, indicate considerable lack of adjustment to adolescence. He hypothesized that normally teens show conflicts about body image so an adolescent without conflicts would be considered abnormal.

Offer's sample was from a large urban middle class city. He did not report a reliability for the actual study but a .70 correlation on a pilot study was reported. A major consideration in accepting his findings as true of the general population of adolescent males was the nature of the statements. Several appear to be loaded with emotional content which may affect the answer given by an adolescent. For instance, if one agreed with the statement, "I am proud of my body", it might suggest that there is something extraordinary about my body, that makes it superior to others.

The evidence from the research is that the changing adolescent body is of concern to the normal adolescent and produces some dissatisfaction in appearance and functioning. The degree of dissatisfaction common to

adolescents is less clear. An area virtually untested is the relationship of important environmental influences such as peers, parents and sociocultural group to body image. Since self-assessment of sexual maturity is very new, it has not been used with studies of body image, but should offer an alternative to age for comparison of body image to stage of development.

Conclusions

In this chapter a review of the pertinent conceptual and experimental literature on normal body image and adolescent growth and development has been discussed. Adolescence is a stage of development which is critically important as far as body image development is concerned since the reference points, surface appearance, cognitive and emotional ability and internal sensations are drastically changing. Change in the foundations of one's reference to himself seems to produce conflicts in body image which produces dissatisfaction. This phenomenon may not be universally true of all normal adolescents, judging from the relatively positive direction of feelings toward the body in several studies. Perhaps there are other variables which haven't been studied. Perhaps adolescent values have changed since the studies of the early 1960's.

The current study focuses on a group of normal adolescents now in the 1980's using the body parts scale that Secord and Jourard (1963) and Clifford (1971) used but with the addition of a scale to measure environmental variables and self-rated Tanner stage to evaluate the relationship with body image. Included in the next chapter are the methodology and procedures employed in the study.

CHAPTER IV

METHODOLOGY

Overview

The descriptive study was designed to identify the perception of the body image variables of body satisfaction, environmental factors and stage of sexual development in a group of adolescents, representative of the mid-adolescent stage of development. The specific variables of the study were: (1) the direction and degree of satisfaction with body parts and functions, (2) the direction and degree of conflict with environmental influences on body image, (3) the stage of sexual development and (4) the interrelationship of body satisfaction, environmental influences and stage of sexual development. The adolescent sample was described socio-demographically in terms of age, grade in school, height, weight, race, and the presence of chronic illness, birth defects of disfiguring accidents or surgery.

A sample was chosen from adolescents aged 14 tc 16 years who were attending high school in two small cities. Mitchell (1979) refers to this age group as 'true adolescence', since a degree of maturity from the childlike qualities of early adolescence has taken place and most have not taken on the responsibilities of adulthood, sometimes found in the older adolescent.

The adolescents were questioned in classroom settings using a three part, paper and pencil instrument. The first part of the instrument was a modification of the Body Satisfaction Scale used by Clifford (1971).

The second part of the instrument was an original tool developed by the researcher to assess the degree of agreement with statements about the attitudes of significant people in the environment toward their bodies. The third part of the instrument was a self-rating of stage of sexual development based on pictures and descriptions of Tanner's five stages (1962). Results of the data were analyzed with descriptive techniques, ie. frequency distributions for each item and correlation to determine the relationship between body satisfaction, environmental influences, Tanner stage and socio-demographic variables.

A pilot study was conducted using five adolescents to test the procedure and refine the instrument. Revisions were made in the wording of some socio-demographic variables and environmental influence statements.

The purpose of this chapter is to present the methodology and procedures used for the study. Included are hypotheses, operational definitions of concepts, variables, sample, instrument, reliability, validity, scoring, pilot testing, data collection process, data analysis.

Hypotheses

The study involved answering the following research questions:

1. How satisfied is the adolescent male with his body?
2. How satisfied is the adolescent female with her body?
3. What body parts are the most satisfactory to adolescent males?
4. What body parts are the least satisfactory to adolescent males?
5. What body parts are the most satisfactory to adolescent females?
6. What body parts are the least satisfactory to adolescent females?
7. What relationship exists between the environmental factors and

body satisfaction of adolescent males?

a. Which environmental factor, parents, peers or sociocultural group has the greatest relationship to body satisfaction in adolescent males?

8. What relationship exists between the environmental factors and the body satisfaction of adolescent females?

a. Which environmental factor, parents, peers or sociocultural group has the greatest relationship to body satisfaction in adolescent females?

9. What relationship exists between stage of sexual maturation (Tanner stage) and body satisfaction in adolescent males?

10. What relationship exists between stage of sexual maturation (Tanner stage) and body satisfaction in adolescent females?

The following hypotheses were tested in the study:

I. There is no relationship between environmental factors and body satisfaction in adolescent males.

a. There is no relationship between parental attitudes and body satisfaction.

b. There is no relationship between peer attitudes and body satisfaction.

c. There is no relationship between sociocultural attitudes and body satisfaction.

II. There is no relationship between environmental factors and body satisfaction in adolescent females.

a. There is no relationship between parental attitudes and body satisfaction.

b. There is no relationship between peer attitudes and body

satisfaction.

c. There is no relationship between sociocultural attitudes and body satisfaction.

III. There is no relationship between Tanner stage and body satisfaction in adolescent males.

IV. There is no relationship between Tanner stage and body satisfaction in adolescent females.

Operational Definitions of Concepts

The following operational definitions were used in the study:

Adolescents are males and females, aged 14 to 16 years from two high school, A and B, who reported freedom from chronic illness.

Body Image was defined as the internal picture one has of his/her body (Schilder, 1950; Norris, 1970). Body image was operationalized for this study as the composite of the following perceptions: (1) personal feelings about body parts and functions or body satisfaction, (2) perception of the attitudes of parents, peers and sociocultural group toward one's body or environmental factors, and (3) perception of stage of sexual maturity or Tanner stage.

Body Satisfaction referred to the part of the total body image concerned with the degree of satisfaction or dissatisfaction with the various parts of the body as measured by the Body Satisfaction Scale (Clifford, 1971; Secord & Jourard, 1953). Three examples of body parts are: (1) distribution of hair over the body, (2) nose, and (3) skin texture (see Appendix A). The scale had a total of 50 items and scoring was by means of a five point Likert type scale, ranging from strong negative feelings to strong positive feelings.

Environmental Factors referred to the part of the total body image

concerned with the degree of agreement or disagreement with statements concerning the attitudes of parents, peers and sociocultural group toward the adolescent's body. Parents, peers and sociocultural group were selected from Brown's list of environmental influences on body image (1977, see Figure 1). An example of a parental attitude is: My parents are pleased with my appearance. An example of a peer attitude is: My friends believe I am about the right height. An example of a sociocultural group attitude is: Most teenagers weigh about the same as I do (see Appendix A). The scale had a total of 21 items and scoring was by means of a five point Likert scale ranging from strongly agree to strongly disagree.

Tanner Stage referred to the part of the total body image concerned with self-assessment of stage of development of certain secondary sex characteristics according to drawings and descriptions of the five stages described by Tanner (1962). An example of the description that accompanied Stage 1 for males is: Pre-adolescent. Testes, scrotum and penis are about the same size and proportion as in early childhood (see Appendix A). The parts of the drawings were labeled. Adolescent males chose one stage that looked most like themselves. Females chose one stage of breast development and one stage of pubic hair development that looked like themselves.

The Variables

Hypotheses were developed to test the relationships between the seven study variables: body satisfaction, total environmental factors, parental attitudes, peer attitudes, sociocultural attitudes, Tanner stage and sex.

In addition, descriptive data was obtained on all subjects to help

identify the demographic phenomena of the sample. Questions included were: (1) current height, (2) current weight, (3) grade in school, (4) race or ethnic group, (5) history of birth defects and (6) history of disfiguring accidents or surgery.

The Sample

The sample selected for the study consisted of 111 males and females between the ages of 14 and 16 from two area high schools. The age range of 14 to 16 (known as middle adolescence) was selected to delineate characteristics of a particular group of adolescents, and to eliminate the variations found at either extreme of the adolescent age span.

The sample was a convenience group derived from a specific class by the athletic director at High School A and by the principal at High School B. The sample from the two sites were analyzed together. The total sample was 111 with 81 being female and 30 male.

The participants also met the criteria of freedom from chronic illness by self report. Adolescents with chronic illness have been shown to have a disturbed or different body image than normal adolescents (Brown, 1977; Zeltzer, 1978).

The Instruments

The content for the Body Satisfaction Scale was derived from scales by Secord and Jourard (1953) and Clifford (1971). The scale consisted of 50 body parts and functions which the subject rated as to degree of satisfaction (see Appendix A). An instrument to measure the influence of other significant people on one's body image was not available. Since environmental influences on body image was described as an important

factor in development of body image (Brown, 1977; Schilder, 1950), the researcher designed an Environmental Factor Scale. With the advice of various experts on adolescent development, a scale consisting of 21 statements to evaluate the influence of parent, peer and sociocultural factors on perception of body image was developed. The final part of the instrument consisted of drawings and descriptions of the five stages of sexual development (Tanner, 1962, see Appendix A). The student was asked to check the stage that looked most like his/her own body. Duke et al (1980) and Morris and Udry (1980) successfully used self-rated Tanner stage as an indicator of adolescent development specifically for use in conjunction with other psychosocial measures such as assessment of perception of body image.

Scoring

In the first part of the questionnaire, the Body Satisfaction Scale (see Appendix A), a five point Likert scale for scoring of the 50 body parts and functions was used. A possibility of points ranging from 1 to 5 was assigned to the responses:

Strong Negative Feelings	Moderate Negative Feelings	No Particular Feelings	Moderate Positive Feelings	Strong Positive Feelings

The lower the number the more negative the feeling, and therefore the more dissatisfaction. The higher the number the more positive the feeling and therefore the more satisfaction. Scores for the 50 items were totaled and a mean score was derived for each individual.

The second section, the Environmental Factors Scale (see Appendix A), was also scored using a five point Likert scale with points ranging from 1 to 5 for each of the responses:

Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree

Five points were assigned for the greatest agreement with a positive item, and one point for the greatest disagreement with a positive item. Responses were reverse scored for negatively worded items. The greatest agreement with a negative item was given a 1, while the greatest disagreement with a negative item received a 5. For instance, if the participant strongly agreed with item 1: My parents are pleased with my appearance, he/she received 5 points because this answer showed the least conflict between himself and attitudes of the parents. If the participant strongly agreed with item 8: My friends believe I am too heavy, he/she received 1 point because this response showed the most conflict with attitudes of peer (see Appendix A).

A mean score was derived for the environmental scale in the same manner as the body satisfaction scale. In addition, means for statements pertaining to parents, peers and sociocultural groups were calculated separately.

For the final section of the instrument, males selected the drawing of pubic hair and genitalia which most closely represented their stage of development (see Appendix A). Females selected a drawing of breast development and one of pubic hair which most closely represented their own. Males and females chose between Stage 1 to 5 of the Tanner scale.

Pilot Testing

Revisions were made in the three instruments, Body Satisfaction Scale, Environmental Factors Scale, and Tanner stage, through consultation with selected experts. The refined instruments were then administered to five adolescents as a pilot test. The purpose of pilot testing

was to detect any unforeseen problems in the research methodology with a small scale trial. The group consisted of two males, aged 13 and 14, and three females, aged 14, 15, and 16, who were friends and relatives of the researcher.

The group of adolescents met together and were given a short definition of body image and the purpose of the study. The instrument was distributed and the subjects were given time to read written instructions on the questionnaire. Verbal directions were given and the group was given the opportunity to ask questions. All questionnaires were completed within 20 minutes and a time of discussion followed.

The data was summarized to look at the variation of scores. Several revisions were made to make the questionnaire more understandable. The open-ended questions about race and grade in school were not understood, so they were changed to give choices to check. A statement on the environmental scale proved to be ambiguous as written, so it was changed to correspond in wording to the other statements. The Tanner scale was changed from photographs to drawings to improve the quality of the reproduction. Morris and Udry (1980) found that adolescents rated their stage of development just as accurately with drawings as Tanner's photographs.

Reliability

Cronbach's coefficient alpha was used to estimate the reliability of the Body Satisfaction Scale and the Environmental Factors Scale. A scale which is constructed to measure individual attitudes toward a subject must contain items that are highly interrelated, or the adding together of responses means nothing.(Crano & Brewer, 1973). A scale which contains a high degree of interrelatedness among items is said to

be internally consistent. "Coefficient alpha, the average interitem correlation of all items constituting a scale, represents probably the best estimate of internal consistency" (Crano & Brewer, 1973, p. 230). A coefficient alpha of at least .80 was expected on each scale to satisfy the criterion for internal consistency, or reliability.

In order to determine the number of different dimensions of an attitude scale and to derive some information concerning the pattern of relationships among the items, a factor analysis was done on the Body Satisfaction Scale and the Environmental Factors Scale. In fact all 50 body parts and functions on the Body Satisfaction Scale were very highly correlated with each other, indicating that only one construct was being measured. The items on the Environmental Factors scale loaded significantly around the three factors, which were labeled, parental attitudes, peer attitudes, and sociocultural attitudes, except for three items which will be discussed in Chapter VI. The reliabilities for each of the scales were calculated and are presented in Chapter V.

In summary, the Cronbach's coefficient alpha was used to statistically estimate the internal consistency of the two scales, Body Satisfaction and Environmental Factors. Factor analysis was done to delineate the subparts of the constructs.

Validity

The degree to which an instrument actually measures the concept it claims to measure is called validity (Borg & Gall, 1979). An acceptable degree of content validity is not statistically measurable, so validity is based almost entirely upon the subjective judgments of the researcher (Crano & Brewer, 1973). With due concern for the validity of the content of the scale, revisions of the body parts and functions

on the Body Satisfaction Scale were done with review of applicable literature and consultation with experts in adolescent development. Since some differences were noted in the findings between body parts and functions (see Chapter V), a suggestion was made for future research to test the validity of separate scales or subparts of body satisfaction for parts and functions (see Chapter VI).

Items for the Environmental Factors Scale were developed by the researcher based on the framework of body image and adolescent development. For this initial scale construction it was decided to develop items based on the three most important environmental influences on body image as defined by the literature, parental attitudes, peer attitudes and attitudes of the larger sociocultural group. Revisions were made with help from experts in adolescent development.

The validity of the Tanner stage as a measure of sexual maturity has been demonstrated by the literature and by its clinical use. The slight change in wording of the descriptions of the stages and the use of drawings instead of photographs was done to make the scale more understandable to adolescents. These changes from Tanner's (1962) original instrument have been demonstrated in the literature (Morris & Udry, 1980) and were done with the advice of experts in adolescent development.

In summary, content validity for the three scales used in this study was estimated by the judgments of the researcher and faculty consultation based upon literature review. Validity was limited, however, since only content validity was assessed for this study.

Data Collection

In this section the settings in which the data was collected, the data collection procedure and the measures taken to insure human rights protection will be described.

Description of the Setting and Procedure for Data Collection

Two sites were selected for obtaining the adolescent sample. Each was a high school in a small rural city.

Site A. School A was located in a city of approximately 16,000 people. The community was characterized by occupations such as farming, small business, and a large group in the automobile industry. School A had approximately 1,600 students in grades 9 through 12.

The students were part of a required physical education class of approximately 105 students, predominantly 9th and 10th grade. A total of 55 students participated in the study. Responses from two students were eliminated because they were too old, and three students reported a chronic illness which eliminated them from the analysis, thus 50 students were included in the final data analysis. There were 12 males and 38 females.

The researcher contacted the principal at School A by telephone, indicaging the purpose of the research and the criteria for the client sample. An appointment was made with the principal for further discussion. He was given copies of the consent form and the questionnaire and indicated he would contact the researcher after checking school policy on research. Subsequently he gave the name of the athletic director to the researcher to set up a time to give the questionnaire to the physical education classes, since it would be possible to have students from the three ages, 14 through 16, in one class. The researcher

met with the athletic director and scheduled one day for the researcher to explain the study to students and give out consent forms and another day, one week later, for return of the forms and administration of the questionnaire.

On the first day of contact the researcher explained the purpose of the study, how it would be administered, and answered questions of the students. The cover letter and consent form was read by the researcher and distributed with instructions on how to return them. The cover letter and consent form may be found in Appendix B.

On the day of the test, consent forms were collected and participants were asked by the teacher to move to a separate part of the gym. Students who were not participating were given study time. Questionnaires were distributed by the teacher to the students who sat on the floor. The printed instructions were read by the researcher, opportunity to ask questions was available, and the students were encouraged to answer the questions as honestly as possible. The students had as much time to finish the test as needed. The questionnaires were turned in to the researcher and no one else saw any of the data. No opportunity was provided by the teacher for debriefing after the test. The researcher was invited to send test results to the athletic director.

Site B. School B was located in a city of approximately 14,000 people. This community was characterized by occupations such as the automobile industry, small business, farming and a variety of occupations available in a nearby city. The school had approximately 1,450 students in grades 9 through 12.

The students were part of a required health education course which had five sections. Each section had approximately 30 students,

predominately 9th and 10th grade. A total of 67 students were tested. Six students reported chronic illness and so were eliminated, leaving a total fo 61 in the final data analysis. There were 18 males and 43 females.

The researcher contacted the principal's office, which referred her to a guidance counselor for coordination of the project. The purpose of the research and the criteria for the client sample were discussed with the counselor and he identified the health education class as a population. An appointment was made with the teacher and copies of the consent form and questionnaire were kept by the teacher for discussion with and approval of the project by the principal. Subsequently a date was set for the initial contact with the students and another date, one week later, was determined for the test taking.

On the first day of contact the researcher explained the purpose of the study, how it would be administered, and answered questions of the students. The cover letter and consent form was read by the researcher and distributed with instructions on how to return them Without the researcher's prior knowledge, however, the teacher had allowed much more time for class discussion than at the previous site. Therefore it was possible that the students had more opportunity for building rapport with the researcher and understanding more about the subject of body image.

On the day of the test taking, consent forms were collected and those students participating were asked by the teacher to move to a separate part of the classroom. Students who were not participating were given study time. Questionnaires were distributed and printed instructions were read by the researcher. The students had opportunity

to ask questions, they were encouraged to answer as honestly as possible, and to take as much of the class hour as needed to complete the test. The questionnaires were turned in to the researcher and no one else saw any of the data. The researcher was asked to send the test findings to the teacher who would follow up the project with the class.

Human Rights Protection

To ensure protection of the rights of the individuals in the study a consent form was developed that explained the purposes of the research and required signature of the parent/guardian and student in order to participate. The students were assured of anonymity. Participation was voluntary and students were advised of their right to refuse to participate and the fact that no information or negative consequences would be passed on to school officials or teachers. For a sample of the consent form and cover letter see Appendix B. A copy of the approval notice from the Michigan State University Committee on Research Involving Human Subjects may be found in Appendix C.

Data Analysis

The first six research questions were answered using descriptive statistics. A mean score of body satisfaction was derived for each participant. Frequencies and percentages of scores were reported according to sex. A frequency distribution was done for means on each of the 50 body parts and functions on the Body Satisfaction Scale. All items with a mean of 3.70 or higher were considered to be the most satisfactory items, while all items with a mean of less than 3.00 were considered to be the least satisfactory items. These items were reported according to sex.

Questions 7, 8, 9, and 10 were answered using Pearson product-moment

correlation coefficients to indicate the direction and degree of relationship between the variables. Question 7a and 8a were answered by comparing the strength of the correlation coefficients between parental attitudes, peer attitudes, sociocultural attitudes and body satisfaction for males and females.

Hypothesis I was tested using a Pearson product-moment correlation since a linear relationship was expected between the two variables which had continuous scores, mean environmental factors and mean body satisfaction for males. Hypotheses Ia, b, and c were tested by Pearson correlation coefficient between mean scores of parental attitudes and body satisfaction, peer attudes and body satisfaction, and sociocultural attitudes and body satisfaction for males.

Hypothesis II was tested in the same manner for females. Hypotheses IIa, b, and c were tested in the same manner for females.

Hypothesis III was tested using a Pearson correlation coefficient between Tanner stage and mean body satisfaction. Hypothesis IV was tested in the same manner for females.

The following values for the Pearson r represent the degress of relationship used for this study: (1) slight or negligible if the $r \geq .15$ or $\leq .30$, (2) moderate if the $r \geq .30$ or $\leq .60$, (3) high or marked if the $r \geq .60$ or $\leq .75$, (4) very high if the $r \geq .75$ (Polit & Hungler, 1978). The findings of the data analysis are presented in Chapter V.

In order to describe the sample, frequencies of each of the socio-demographic questions were compiled. In addition the socio-demographic questions were compared with mean body satisfaction, mean scores of environmental factors and Tanner stage using Pearson correlation coefficients. This additional analysis was done to find out if any other variables that weren't considered in the research questions and hypotheses

might be influencing the perception of body image in adolescents.

Summary

An overview of the methodology and procedures involved in the study was provided in this chapter. Included was the hypotheses, the operational definitions of the concepts under investigation, a summary of the variables, a discussion of the sample, the instruments, scoring, pilot testing, reliability, validity, the data collection procedure, and the data analysis. A discussion of the findings of the data analysis will be included in Chapter V.

CHAPTER V

DATA PRESENTATION AND ANALYSIS

Overview

The data presented in this chapter describe the study population and demonstrate the relationship between perceptions of body image (operationalized as body satisfaction, the influence of environmental factors and Tanner stage) in adolescent males and females. The study population was a volunteer, convenient sample of 111 students, aged 14 to 16 years, who stated they had no chronic illness, attending high school in two rural Michigan communities.

In Chapter V data are presented and analyzed for the following research questions:

1. How satisfied is the adolescent male with his body?
2. How satisfied is the adolescent female with her body?
3. What body parts are the most satisfactory to adolescent males?
4. What body parts are the least satisfactory to adolescent males?
5. What body parts are the most satisfactory to adolescent females?
6. What body parts are the least satisfactory to adolescent females?
7. What relationship exists between the environmental factors and body satisfaction of adolescent males?
    a. Which environmental factor, parents, peers or sociocultural group has the greatest relationship to body satisfaction in adolescent males?
8. What relationship exists between the environmental factors and

the body satisfaction of adolescent females?

a. Which environmental factor, parents, peers or sociocultural group has the greatest relationship to body satisfaction in adolescent females?

9. What relationship exists between stage of sexual maturation (Tanner stage) and body satisfaction in adolescent males?

10. What relationship exists between stage of sexual maturation (Tanner stage) and body satisfaction in adolescent females?

The following hypotheses were developed for the research questions.

I. There is no relationship between environmental factors and body satisfaction in adolescent males.

a. There is no relationship between parental attitudes and body satisfaction.

b. There is no relationship between peer attitudes and body satisfaction.

c. There is no relationship between sociocultural attitudes and body satisfaction.

II. There is no relationship between environmental factors and body satisfaction in adolescent females.

a. There is no relationship between parental attitudes and body satisfaction.

b. There is no relationship between peer attitudes and body satisfaction.

c. There is no relationship between sociocultural attitudes and body satisfaction.

III. There is no relationship between Tanner stage and body satisfaction in adolescent males.

IV. There is no relationship between Tanner stage and body satisfaction in adolescent females.

Descriptive Findings of the Study Sample

The study sample consisted of 50 (45%) students from high school A and 61 (55%) students from high school B. The group from A were obtained from a physical education class while the group from B were obtained from five health education classes. There were 30 (27%) males and 81 (73%) females that participated. Those participants who reported having a chronic illness were excluded from the data analysis.

Age. The age of the study sample ranged from 14 to 16 years. The mean age overall was 14.6 years. The mean age for males was 14.9 years and the mean age for the females was 14.5 years. The age distribution of males and females are presented in Table 2.

Table 2. Age of Males and Females (n = 111).

Age	Males	Percent	Females	Percent	Total	Total Percent
14	9	(30)	44	(54)	53	(48)
15	14	(47)	30	(37)	44	(39)
16	7	(23)	7	(9)	14	(13)
Total	30	(100)	81	(100)	111	(100)

Race or Ethnic Background. Race or ethnic background was obtained for each participant in the study. Only two (1.8%) participants reported other than Caucasian (White) race. One of these participants checked Hispanic and the other participant failed to write in a response after checking the 'other' category. Both of these participants were 14 year old females from high school B.

Height. All participants were asked to state their height in feet and inches. The data was then forced into one of five categories based on tables of normal height (DHEW, 1975). The percentiles refer to the rank of height in a group of 100 children aged 2 to 18 years. For instance, when a height was recorded that fell on the 95th percentile line, it meant only 5 children among 100 of the same age were taller.

Categories 1 and 5 indicated particularly high or low height for age, or those heights that fell outside the 5th to 95th percentile. Category 1 (0 to 4th Percentile) indicated below average height. Category 2 (5th to 24th percentile) indicated low average height. Category 3 (25th to 74th percentile) indicated average height. Category 4 (75th to 94th percentile) indicated high average height. Category 5 (above the 95th percentile) indicated above average height.

None of the participants reported particularly low height. Four males (13%) reported particularly high values for height and eight females (10%) reported particularly high values. The distribution and percent of males and females for each height category are presented in Table 3. Males ranged in height from 5'0" to 6'3" with a mean height of 5'8". Females ranged in height from 4'10" to 6'5" with a mean height of 5'4".

Table 3. Height of Males and Females by Percentile (n = 111)

Category	Males	Percent	Females	Percent	Total	Total Percent
1 (0 - 4th)	0	(0)	0	(0)	0	(0)
2 (5 - 24th)	5	(17)	17	(21)	22	(20)
3 (25-74th)	12	(40)	40	(49)	52	(47)
4 (75-94th)	9	(30)	16	(20)	25	(22)
5 (95th +)	4	(13)	8	(10)	12	(11)
Total	30	(100)	81	(100)	111	(100)

Weight. All participants were asked to state their weight in pounds. This data was also forced into five categories based on tables of normal weight for age (DHEW, 1975). Categories 1 and 5 indicated particularly high or low weight for age, or those weights that fell outside the 5th to 95th percentile. Category 1 (0 to 4th percentile) indicated below average weight. Category 2 (5th to 24th percentile) indicated low average weight. Category 3 (25th to 74th percentile) indicated average weight. Category 4 (75th to 94th percentile) indicated high average weight. Category 5 (above the 95th percentile) indicated above average weight.

None of the participants reported particularly low weight. Three males (19%) reported particularly high values for weight and four females (5%) reported particularly high values. The distribution and percent of males and females for each weight category are presented in Table 4.

Males ranged in weight from 90 pounds to 225 pounds with a mean weight of 140.9 pounds. Females ranged in weight from 92 pounds to 204 pounds with a mean weight of 120.9 pounds. One female failed to report her weight.

Table 4. Weight of Males and Females by Percentile (n = 110)

Category	Males	Percent	Females	Percent	Total	Total Percent
1 (0-4th)	0	(0)	0	(0)	0	(0)
2 (5-24th)	4	(13)	12	(15)	16	(14)
3 (25-74th)	13	(43)	48	(60)	61	(56)
4 (75-94th)	10	(34)	16	(20)	26	(24)
5 (95th +)	3	(10)	4	(5)	7	(6)
Total	30	(100)	80	(100)	110	(100)

Grade in School. The participants were asked their grade in school. The high school included grades 9 through 12. Of the total 111 participants, 89 (80%) were in grade 9, 21 (19%) were in grade 10, and 1 (1%) was in grade 11. There were no participants in grade 12. The distribution and percent of participants are shown by sex and grade in Table 5.

Table 5. Grade in School for Males and Females (n = 111).

Grade	Males	Percent	Females	Percent	Total	Total Percent
9	23	(77)	66	(82)	89	(80)
10	6	(20)	15	(18)	21	(19)
11	1	(3)	0	(0)	1	(1)

History of Birth Defect. Each participant was asked to report the presence of any birth defects and to briefly describe that problem. Only 4 (4%) of the study sample stated they had birth defects. Three of this group were female and one was male. One female stated she was "born bowlegged", one had "a curved spine", and one "was cross-eyed". The male stated "he can't hear too well." The remainder of the study sample reported they did not have birth defects (n = 107, 96%).

This group had no significant difference in scores on the scales of perception of body image than the rest of the 'normal' sample (see Table 16). Therefore this group was treated as part of the total sample for data analysis.

History of a Deforming Accident or Surgery. Each participant was asked to report the history of an accident or surgery that left a noticeable deformity. Twelve (11%) of the study sample stated they had

noticeable deformities, of those, 11 were female and only one was male. The majority of responses were concerning scars from various trauma, ie. on the face, knees, legs, wrists, and arms. Two females had scars from surgery for removal of an appendix. One female had a "bone cyst on her ankle and a bone graft from the hip." One female had a "smashed finger which was smaller and fatter." One female "had her toenails removed." The remainder of the sample reported they had no noticeable deformities from accidents or surgery (n = 99, 89%).

This group had no significant difference in scores on the scales of perception of body image than the rest of the 'normal' sample (see Table 16). Therefore this group was also treated as part of the total sample for data analysis.

In summary, the study sample was described according to: age, sex, race or ethnic background, height, weight, grade, history of birth defect, and history of deformity from accident or surgery. Data to answer the research questions and the hypotheses for the study, as well as the reliabilities calculated for the instruments are presented in the following section of the chapter.

Reliability of the Scales

The reliability of the Body Satisfaction Scale and the Environmental Factors Scale were measured through the computation of coefficient alphas. In addition to the total environmental factors, the coefficient alpha was computed for the parental attitudes, peer attitudes and sociocultural attitudes sections of the scale. Items were deleted from the Environmental Factors Scale after factor analysis. Three items which had factor loadings below .25 were deleted (see Appendix D).

The reliability coefficient for body satisfaction was .92, which

represented a high internal consistency among the items of body parts and functions used for the scale. None of the items was deleted.

The Environmental Factors Scale as a whole had a reliability coefficient of .80, which represented a high internal consistency among all the items on the scale. There were three statements deleted after factor analysis (see Appendix D). A reliability coefficient for the subpart of the scale, parental attitudes, was .63. This represented a moderate internal consistency among the items. One statement was deleted from this subpart, leaving six statements about parental attitudes. The subpart, peer attitudes, obtained a coefficient of .57, which also represented a moderate internal consistency. There were seven statements regarding peer attitudes. The reliability coefficient obtained for the subpart, sociocultural attitudes, was .61. This represented a moderate internal consistency among the items. Two statements were deleted after factor analysis.

In summary, both of the major scales measured a high degree of interrelatedness among the items on the scales as a whole. The subparts of the Environmental Factors Scale measured a moderate degree of interrelatedness among items. Thus the Body Satisfaction Scale and the Environmental Factors Scale as a whole were considered to be reliable instruments, while the sub scales of environmental factors were not considered to be reliable enough to be used independently as measures of environmental factors.

Data Presentation for Research Questions and Hypotheses

Each research question will be presented in this section with its descriptive data as well as an explanation of the statistical technique

used for analysis.

Research Question 1

How satisfied is the adolescent male with his body?

The question was answered by computing mean scores on the 50 item Body Satisfaction scale using the values of 1 through 5 for the possible responses.

In Table 6, the mean body satisfaction scores for males are presented by category as indicated. The raw data on frequency distribution is presented in Appendix E. The mean of all the scores for males was 3.32 with a standard deviation of .45. Males tended to be mildly satisfied with their bodies.

Table 6. Mean Body Satisfaction Scores for Males (N=30).

Mean	Number of Participants	Percent
2.00 - 2.49	1	3
2.50 - 2.99	8	26
3.00 - 3.49	48	59
3.50 - 3.99	11	13
4.00 - 4.49	2	3
4.50 - 5.00	1	1
Total	30	100

Research Question 2

How satisfied is the adolescent female with her body?

This question was answered in the same manner as question 1. The data for females is presented in Table 7 (see Appendix E for raw frequency distributions). The mean body satisfaction for females was 3.21 with a standard deviation of .42. The females tended to have slightly less satisfaction with their bodies than the males in this study.

Table 7. Mean Body Satisfaction Scores for Females (N=81).

Mean	Number of Participants	Percent
2.00 - 2.49	4	5
2.50 - 2.99	15	19
3.00 - 3.49	48	59
3.50 - 3.99	11	13
4.00 - 4.49	2	3
4.50 - 5.00	1	1
Total	81	100

Research Question 3

What body parts are the most satisfactory to adolescent males?

In order to determine the feelings of males about individual body parts, means of the values assigned to each item were calculated from the Body Satisfaction scale. The items were then ranked in order of their means, ranging from the most positive responses to the most negative responses. The rank order for the 50 body items is listed in Table 8.

Any item with an overall mean score of greater than 3.50 was considered to be satisfactory. The most satisfactory parts for males were sex organs. Males also rated eyes, hair, legs, shoulders, and lips very highly.

Males also picked body functions as satisfactory items from the scale. Sex (being male) was the highest ranked item. Exercise, health, muscle tone, body build, and energy level were all rated very highly.

Males ranked 12 items above 3.50. Six of the items were parts and six of the items were body functions.

Research Question 4

What body parts are the least satisfactory to adolescent males?

Referring to the rank order of body items in Table 8, males were

Table 8. Rank Ordering of Body Parts and Functions according to the Mean Score for Males.

Item	Mean	Item	Mean
Sex (being male)	4.23	Neck	3.23
Exercise	4.13	Mouth	3.23
Health	3.90	Hips	3.20
Muscle Tone	3.77	Complexion	3.20
Sex Organs	3.70	Digestion	3.17
Body Build	3.70	Distribution/Hair	3.17
Energy Level	3.70	Back	3.17
Eyes	3.67	Ankles	3.17
Hair	3.67	Buttocks	3.17
Legs	3.63	Thighs	3.17
Shoulders	3.63	Weight	3.17
Lips	3.63	Posture	3.13
Appetite	3.47	Nose	3.10
Age	3.43	Fingers	3.07
Face	3.43	Voice	3.07
Teeth	3.40	Chin	3.07
Shape of Head	3.37	Back View/Head	3.03
Skin Texture	3.37	Wrists	3.03
Feet	3.33	Ears	3.00
Arms	3.30	Abdomen	3.00
Chest	3.30	Waist	2.97
Hands	3.27	Forehead	2.93
Breathing	3.27	Elimination	2.93
Profile	3.27	Knees	2.90
Sleep	3.27	Height	2.90

least satisfied with their height (a global part) and their knees. Males also rated their forehead and waist as low satisfaction (means below 3.00).

Males indicated that they were also dissatisfied with the body function of elimination. Males ranked five items below the mean of 3.00, four of the items were parts and one was a body function.

Research Question 5

What body parts are the most satisfactory to adolescent females?

Statistical analysis for research question 5 was accomplished in the same manner as for question 3. The rank order of mean values for

Table 9. Rank Ordering of Body Parts and Functions according to the Mean Score for Females.

Item	Mean	Item	Mean
Sex (being female)	4.17	Neck	3.24
Health	4.07	Chest	3.24
Eyes	3.94	Chin	3.21
Energy Level	3.77	Back View of Head	3.20
Exercise	3.77	Distribution/Hair	3.16
Hair	3.64	Forehead	3.12
Height	3.52	Digestion	3.12
Lips	3.46	Elimination	3.10
Sex Organs	3.43	Back	3.07
Breathing	3.41	Ankles	3.06
Posture	3.40	Complexion	3.05
Sleep	3.37	Profile	3.04
Wrists	3.32	Nose	3.00
Shape of Head	3.32	Fingers	3.00
Shoulders	3.30	Appetite	2.96
Teeth	3.30	Waist	2.96
Age	3.28	Hands	2.90
Ears	3.27	Legs	2.90
Skin Texture	3.27	Knees	2.89
Face	3.27	Feet	2.89
Body Build	3.26	Buttocks	2.85
Arms	3.25	Abdomen	2.65
Voice	3.25	Hips	2.65
Muscle Tone	3.24	Thighs	2.61
Mouth	3.24	Weight	2.58

body parts and functions is presented in Table 9. The most satisfactory parts for females were eyes and hair, and the global part, height.

Females also picked body functions as satisfactory items from the scale. Sex (being female) was the highest ranked item. Health, energy level, exercise were all ranked very highly (means greater than 3.50). Females rated seven items above 3.50. Three of the items were body parts and four of the items were body functions.

Research Question 6

What body parts are the least satisfactory to adolescent females?

Referring to the rank order of body items in Table 9, females were least satisfied with thighs, hips, abdomen, buttocks, feet knees, legs,

hands and waist. All of these body parts were rated with means below 3.00.

Females also rated two body functions very low. The least satisfactory item on the scale was weight. Females were also dissatisfied with appetite. Females rated eleven items below 3.00. Nine of the items were body parts and two of the items were body functions.

Research Question 7

What relationship exists between the environmental factors and the body satisfaction of adolescent males? Which environmental factor, parents, peers or sociocultural group has the greatest relationship to body satisfaction in adolescent males?

The degree of relationship between the variables was tested by Pearson product-moment correlation. The size of the correlation coefficient indicates the degree of relationship.

The Environmental Factors scale was scored using values of 1 through 5 which corresponded to attitudes of agreement or diagreement with the 21 statements. Values were assigned according to the amount of conflict expressed in the response (see Chapter 4). Mean scores for the total scale were calculated, as well as mean scores for each of the three sections (see Table 10).

Table 10. Mean Scores for the Environmental Factors Scale for Males (N=30).

Scale	Mean	Standard Deviation
Total environmental factors	3.42	.47
Parental attitudes	3.64	.70
Peer attitudes	3.41	.41
Sociocultural attitudes	3.32	.57

A correlation matrix is presented in Table 11 that presents the Pearson r for the five study variables in question. A relationship was defined as: (1) slight or negligible if the r >.15 or <.30, (2) moderate if the r >.30 or <.60, (3) high or marked if the r >.60 or <.75, (4) very high if the r >.75 (Polit & Hungler, 1978).

Table 11. Pearson Product-Moment Correlations between Environmental Factors and Body Satisfaction for Males (N=30).

	Total	Parent	Peer	Soc/Cult	Body Satis.
Total	1.00				
Parent	.89*	1.00			
Peer	.83*	.59*	1.00		
Soc/Cult	.83*	.60*	.59*	1.00	
Body Satis.	.46*	.27	.56*	.40**	1.00

* p .01.
** p .05.

There was a moderate relationship (r = .46, p<.01) between total environmental factors and body satisfaction. There was a slight relationship (r = .27, p = .07) between parental attitudes and body satisfaction which was not significant. There was a moderate relationship (r = .56, p<.01) between peer attitudes and body satisfaction. There was a slight to moderate relationship (r = .40, p<.01) between sociocultural attitudes and body satisfaction. The correlations indicated that the more satisfied a male was with his body, the more he felt influenced by environmental factors, especially peers.

The Pearson r correlation indicated that the body satisfaction of males was somewhat more influenced by peer attitudes than sociocultural attitudes. However both correlations were too similar to state

conclusively that one has a greater relationship than the other.

Research Question 8

What relationship exists between the environmental factors and body satisfaction of adolescent females? Which environmental factor, parents, peers or sociocultural group has the greatest relationship to body satisfaction in adolescent females?

Analysis for this question was done in the same manner as for question seven. The mean scores for females on the Environmental Factor scale are listed in Table 12, and the correlation matrix for determining the relationship is presented in Table 13.

Table 12. Mean Scores for the Environmental Factors Scale for Females, (N=81).

Scale	Mean	Standard Deviation
Total environmental factors	3.34	.45
Parental attitudes	3.38	.56
Peer attitudes	3.45	.48
Sociocultural attitudes	3.14	.65

Table 13. Pearson Product-Moment Correlation between Environmental Factors and Body Satisfaction for Females, (N=81).

	Total	Parent	Peer	Soc/Cult	Body Satis.
Total	1.00				
Parent	.85*	1.00			
Peer	.83*	.60*	1.00		
Soc/Cult	.78*	.48*	.45*	1.00	
Body Satis.	.62*	.44*	.62*	.47*	1.00

* p .01

There was a marked relationship (r = .62, $p < .01$) between total environmental factors and body satisfaction. There was a moderate relationship (r = .44, $p < .01$) between parental attitudes and body satisfaction. There was a marked relationship (r = .62, $p < .01$) between peer attitudes and body satisfaction. There was a moderate relationship (r = .47, $p < .01$) between sociocultural attitudes and body satisfaction. The correlation indicated that as females increase in satisfaction with their bodies, they tend to be significantly influenced by each of the environmental factors.

The Pearson r correlation indicated that the body satisfaction of females was somewhat more influenced by peer attitudes than sociocultural or parental attitudes. However all three correlations are too similar to determine that either one has a greater relationship with body satisfaction than the other.

Research Question 9

What relationship exists between stage of sexual maturation (Tanner stage) and body satisfaction in adolescent males?

Males were asked to identify their stage of sexual maturation from Stage 1, preadolescent, to Stage 5, adult. The following table indicates the frequency distribution for this sample. One male failed to check a category.

Table 14. Frequency Distribution of Tanner Stage for Males (n = 29).

Stage	Number of Participants	Percent
3	1	4
4	12	41
5	16	55
Total	29	100

Pearson product-moment correlation was used to analyze the relationship between Tanner stage and body satisfaction in males. Using the same representation for r as previously presented, there was a slight negative correlation between Tanner stage and body satisfaction ($r = -.30$, $p = .06$).

Research Question 10

What relationship exists between stage of sexual maturation (Tanner stage) and body satisfaction in adolescent females?

Females were asked to identify their stage of breast development and their stage of pubic hair development from Stage 1, preadolescent, to Stage 5, adult. The frequency distribution and percentage for each stage are presented in Table 15. There were no females who identified themselves as Stage 1.

Table 15. Frequency Distribution of Tanner Stage for Females (n = 81).

Stage	Tanner Breast	Percentage	Tanner Pubic Hair	Percentage
2	2	3	0	0
3	29	35	10	12
4	21	26	26	32
5	29	36	45	56
Total	81	100	81	100

Pearson product-moment correlation was used to analyze the relationship between Tanner stage and body satisfaction in females. The Pearson r indicated that there was a negligible, negative relationship between breast development and body satisfaction ($r = -.10$, $p = .20$). There was a negligible, positive relationship between pubic hair development and body satisfaction ($r = .07$, $p = .28$).

Hypothesis I

There is no relationship between environmental factors and body satisfaction in the adolescent male.

a. There is no relationship between parental attitudes and body satisfaction.

b. There is no relationship between peer attitudes and body satisfaction.

c. There is no relationship between sociocultural attitudes and body satisfaction.

Hypothesis I was tested by computing Pearson product-moment correlation between the variables. The size of the correlation coefficient indicated the degree of relationship. Correlation coefficients were also assigned statistical significance. For this study in order to reject the null hypothesis, the level of significance was set at .05.

The correlation matrix for the study variables, total environmental factors, parental attitudes, peer attitudes, sociocultural attitudes and body satisfaction for males is shown in Table 11. Hypothesis I, that there is no relationship between total environmental factors and body satisfaction in males was rejected ($r = .46$, $p < .01$). Hypothesis Ia, that there is no relationship between parental attitudes and body satisfaction in males was not rejected ($r = .27$, $p = .07$). Hypothesis Ib., that there is no relationship between peer attitudes and body satisfaction in males was rejected ($r = .56$, $p < .01$). Hypothesis Ic., that there is no relationship between sociocultural attitudes and body satisfaction in males was rejected ($r = .40$, $p < .05$). The computations indicated that there was a statistically significant relationship between total environmental factors, peer attitudes, sociocultural attitudes and body satisfaction

in this sample of males.

Hypothesis II

There is no relationship between environmental factors and body satisfaction in the adolescent female.

a. There is no relationship between parental attitudes and body satisfaction.

b. There is no relationship between peer attitudes and body satisfaction.

c. There is no relationship between sociocultural attitudes and body satisfaction.

Hypothesis II was also tested by computing Pearson product-moment correlations between the variables. The correlation matrix for the variables, total environmental factors, parental attitudes, peer attitudes, sociocultural attitudes and body satisfaction of females is shown in Table 13. Hypothesis II, that there is no relationship between total environmental factors and body satisfaction was rejected ($r = .62$, $p < .01$). Hypothesis IIa., that there is no relationship between parental attitudes and body satisfaction was also rejected ($r = .44$, $p < .01$). Hypothesis IIb., that there is no relationship between peer attitudes and body satisfaction was also rejected ($r = .62$, $p < .01$). Hypothesis IIc., that there is no relationship between sociocultural attitudes and body satisfaction was also rejected ($r = .47$, $p < .01$). Therefore it was concluded that there was a statistically significant relationship between environmental factors and body satisfaction in adolescent females.

Hypothesis III

There is no relationship between Tanner stage and body satisfaction in the adolescent male.

The Pearson product-moment correlation used to analyze the data pertaining to this hypothesis indicated that there was a negligible, negative correlation (r = -.30, p = .06) between the variables. The hypothesis was not rejected. There was no relationship between Tanner stage and body satisfaction in males, since the level of significance was set at .05. A further discussion will be presented in Chapter VI.

Hypothesis IV

There is no relationship between Tanner stage and body satisfaction in the adolescent female.

The Pearson product-moment correlation used to analyze the data pertaining to this hypothesis indicated that there was a negligible negative relationship between breast development and body satisfaction (r = -.10, p = .20), and a negligible positive relationship between pubic hair development and body satisfaction (r = .07, p = .28). The hypothesis was not rejected. There is no statistically significant relationship between Tanner stage and body satisfaction in females.

Extraneous Variables

In order to determine the influence of socio-demographic variables on the perception of body image in adolescents, an analysis was made of the relationship of each socio-demographic item with the study variables. Race was not tested since 98% of the sample were white. A correlation matrix of the socio-demographic variables and the study variables is presented in Table 16.

The point biserial correlation, which is a form of the Pearson product-moment correlation, was used to analyze the relationship between test site, sex, history of birth defect, history of deforming accident or surgery, and each of the study variables. Point biserial correlation

Table 16. Point Biserial Correlations between the Socio-demographic Variables and the Study Variables for both Males and Females.

	Body Satisfaction	Total Environmental Factors	Parental Attitudes	Peer Attitudes	Socio-Cultural Attitudes	Tanner Breast	Tanner Pubic Hair
Site	-.01	.01	-.03	.02	.04	-.05	-.03
Age	.06	.06	-.01	.11	.05	.17	.14
Sex	-.11	-.08	-.19**	.04	-.03	.92@	-.13
Height	.10	.09	.06	.19**	-.02	-.02	-.03
Weight	-.15	-.20**	-.11	-.15	-.25*	-.08	.03
Grade	-.09	.02	.04	.04	-.02	-.06	.04
Birth Defect	.07	.01	.06	.01	-.05	.04	.06
Accident/ Surgery	.08	.09	.04	.08	.12	-.19**	-.01

* p .01
** p .05

@ Tanner Stage for Breast computed only for females.

is used when one of the variables is a continuous score and the other is a true dichotomy (Borg & Gall, 1971). The variables, history of birth defect and deformity from accident or surgery were answered by yes or no, test site was either A or B, and sex was either male or female. Since the answer categories were arbitrarily assigned, a finding of a negative correlation coefficient related only to the value of the answer category. For instance, since males were given a value of 1 and females a value of 2, a negative correlation indicated that males tend to score higher on that variable than females.

The variable, test site, was of interest since the methodology was somewhat different at the two schools (see Chapter IV). However, the matrix indicated that there was no significant difference between the two sites in body satisfaction, environmental factors or Tanner stage.

There also was no significant difference between the age groups on overall scores for body satisfaction, environmental factors or Tanner stage.

There was no difference between males and females on overall body satisfaction and total environmental factors. Males, however, were significantly different from females on scores of parental attitudes (r = -.19, $p < .05$). The correlation between sex and Tanner breast development was not perfect because the 0 value for males was also entered in the computation.

Height was not significantly related to overall body satisfaction or total environmental factors. However, the correlation for height and peer attitudes (r = .19, $p < .05$), indicated that the taller individuals tended to be more influenced by attitudes of their peers.

Weight approached significance in a negative relationship with

body satisfaction (r = -.15, p = .06), indicating that heavier adolescents have lower body satisfaction. Weight was significantly related to total environmental factors (r = -.20, $p < .05$) also in a negative manner, indicating that heavier individuals have conflict with attitudes of people in their environment. Weight was also significantly related to sociocultural attitudes (r = -.25, $p < .01$) in a negative manner, which indicated that heavier individuals have conflict with the attitudes of the larger sociocultural group. The relationship of weight to peer attitudes also approached significance (r = -.15, p = .06), indicating that there was also conflict with one's peers when one is heavier. Weight was not, however, related to Tanner stage in this group of adolescents.

The grade level of these adolescents had no relationship to body satisfaction, environmental factors or Tanner stage. The correlation coefficients for grade with each of the study variables did not approach significance.

The history of birth defects also did not have any relationship to the study variables. There were only four participants who had birth defects so the likelihood of a relationship was small.

The history of deforming accident or surgery had no relationship to body satisfaction or environmental factors. An unexplained negative relationship was found between deformity and Tanner breast development (r = -.19, $p < .05$), indicating that those who reported the presence of some deformity tended to be at a more advanced stage of breast development.

To summarize, relationships were demonstrated between sex and parental attitudes, between height and peer attitudes, between weight and

total environmental factors, sociocultural attitudes and peer attitudes and body satisfaction, and between deformity and Tanner breast development. The socio-demographic variables, test site, age, grade in school, and history of birth defects have no significant relationship to body satisfaction, environmental factors or Tanner stage.

Additional Research Findings

Researchers have found significant differences between males and females on issues that relate to body image perception (see Chapter III). The following comparisons of findings of the current study according to sex, will demonstrate the idiosyncrasies of the sample of adolescents.

It was noted that more females participated than males (see Table 2). This was true despite the fact that the available population was much closer to 50% male and female at both sites.

The distribution of age between males and females was somewhat different (see Table 2). Thirty percent (n = 9) of the males were 14, while 54% (n = 44) of the females were 14. Forty seven percent (n = 14) of the males were 15, while 37% (n = 30) of the females were 15. Twenty three percent (n = 7) males were 16, while only 9% (n = 7) females were 16. It could be concluded that the female sample tended to be younger while the male sample was more evenly divided between the three age groups.

The only point of note in differences in height between males and females was that 13% (n = 4) of the males were above average height, while only 10% (n = 8) were above average height. It was more striking to note the similarities in height between the sexes; no males or females were particularly short for their age; several of both sexes were particularly tall; and the range of heights was within two inches of each

other on both ends of the span (5'0" to 6'3" for males and 4'10" to 6'5" for females). The frequency distribution of height is shown in Table 3.

The sexes varied more on weight than height. As shown in Table 4, females tended to be clustered more in category 3 (n = 49, 61%), the middle weight category, than males. Males were more evenly distributed from category 2 through 5 with 43% in category 3, and 43% in the higher weight categories 4 and 5. No one in the sample was below average weight.

Males and females from grades 9 to 11 participated almost equally. Table 5 showed that approximately 80% (n = 23 males, n = 66 females) of both males and females were in the 9th grade and approsimately 20% (n = 6 males, n = 15 females) of both sexes were in the 10th grade.

The sexes did differ on reporting the history of birth defects and accidents or surgery. Only one male reported a birth defect and only one male reported a deformity due to an accident.

The scores for body satisfaction were remarkably similar between the sexes. The mean for males was 3.32, for females 3.21. The correlation coefficient between body satisfaction and sex, shown in Table 11, was not significant. Even when the body parts and functions were considered individually, both sexes had similar preferences. Males as well as females were more satisfied with their sex, health and exercise ability than other parts and functions. Males as well as females also reported mutual dissatisfaction with waist and knees. The most significant differences between the male and female perception of body items was the fact that females reported lower satisfaction with twice as many items as males (see Tables 8 and 9).

A point biserial correlation was computed between sex and each of the 50 body parts and functions on the Body Satisfaction scale (see Appendix F). The following results were significant: males showed significantly greater satisfaction than females with appetitie, hands, body build, thighs, hips, weight, muscle tone, and legs. Females showed significantly greater satisfaction than males with elimination, wrists, ears, and height ($p < .05$).

The only significant difference between the sexes on the Environmental scale was the finding that males tended to be more influenced by parental attitudes than females (see Table 16).

There also were no significant differences between males and females in this sample in sexual maturation.

To summarize, differences between the sexes were significant regarding those who chose to participate, the age distribution, weight distribution, reporting of birth defects and deforming accident or surgery, the number and type of body parts and functions reported as dissatisfactory and the influence of parental attitudes.

Summary of the Chapter

In Chapter V the data and analysis have been presented for the research questions and hypotheses. An overview was presented that introduced the topics for discussion and described the focus of the chapter. The descriptive findings of the sample presented a discussion of the sociodemographic variables: age, race or ethnic background, height, weight, grade in school, history of birth defects, and history of deforming accident or surgery.

The Body Satisfaction scale and the Environmental Factors scale were found to be reliable using coefficient alpha.

Data was presented to answer each of the research questions. Males were mildly satisfied with their bodies. Females were slightly less satisfied with their bodies than males. Males were most satisfied with sex organs, and were least satisfied with height and knees. Females were most satisfied with eyes, hair and height, and were least satisfied with thighs, hips, abdomen, buttocks, feet, knees, legs, hands and waist. There was a moderate relationship between total environmental factor, peer attitudes, sociocultural attitudes and body satisfaction in males. It could not be determined which factor had the greatest relationship with body satisfaction. There was a moderate to marked relationship between each of the environmental factors and body satisfaction in females. It also could not be determined which factor had the greatest relationship with body satisfaction. There was a slight negative relationship between Tanner stage and body satisfaction in males. There was no significant relationship between Tanner stage and body satisfaction in females.

Hypothesis I: there is no relationship between environmental factors and body satisfaction in males was rejected, except for the parental attitudes section, which did show no relationship and was not rejected. Hypothesis II: there is no relationship between environmental factors and body satisfaction in females was totally rejected. Hypothesis III: there is no relationship between Tanner stage and body satisfaction in males was not rejected. Hypothesis IV: there is no relationship between Tanner stage and body satisfaction in females was not rejected.

Extraneous variables, the socio-demographic items, were also tested for a relationship with the study variables, and the differences

in findings for the sexes was summarized.

In Chapter VI the summary, conclusions and implications for future research will be presented. The implications for nursing practice will also be presented in Chapter VI.

CHAPTER VI

SUMMARY, INTERPRETATIONS, AND IMPLICATIONS OF FINDINGS

Overview

A summary and interpretation of the research findings is presented in Chapter VI. Conclusions and recommendations for future research, nursing practice and nursing education are also presented.

Summary and Interpretation of Findings

Descriptive Findings of the Study Sample

The study sample was limited to the middle adolescent age group in order to have a more homogeneous group. Since adolescence spans the ages from 10 to 20, many characteristics of childhood and adulthood are present in the lower and upper ages, respectively (Blos, 1962). Therefore the sample consisted of 111 students taken from a population of 14 to 16 year old high school students.

The sample was further limited by not including participants with a reported history of chronic illness. It is well documented that chronic illness places many demands on the young person in terms of body image changes (Brown, 1977; Zeltzer, 1977). It was decided to eliminate these variables from this study of normal adolescents. The factors that were used to describe this study sample were age, race, grade, height, weight, history of birth defects, history of accident or surgery and Tanner stage.

Age. The mean age of males in this study was 14.9 years while that of females was 14.5 years. Of the 30 males who participated, 30% (9) were 14, 47% (14) were 15 and 23% (7) were 16 years. The distribution across the age categories for males was more even than the distribution of the females.

There were 81 female participants, 54% (44) of whom were 14, 37% (30) of whom were 15 and only 9% (7) of whom were 16. Though the mean age doesn't appear significantly different from the males, the majority of females were 14 and 15 years. Since normal adolescents begin their growth spurt by age 15 in males and age 14 in females (Marshall, 1975; Tanner, 1962), this sample was potentially more alike between the sexes as far as the characteristics of the potential onset of growth.

In the analysis of age with the study variables, body satisfaction, environmental factors and Tanner stage, no significant relationships were found. This might have been expected from the similarities in mean age.

An explanation for why more females than males participated was not apparent from the questionnaire. A possible reason might be that the females were more willing to participate since the researcher was also female. It is also possible that males of this age are more shy than females, especially about their bodies, and showed reluctance to disclose information about themselves.

Race. The distribution of the sample according to race was typical of the population in the rural communities from which the sample was derived. Of the sample, 98% were caucasian and approximately 2% were hispanic or other. This lack of a cross section racially limits the generalizability of the findings to other racial or ethnic groups.

Grade in School. The distribution of males and females by grade was also very similar. Of the students, 77% of the males were in grade 9 while 82% of the females were in grade 9. Only 20% of the males were in grade 10, while 19% of the females were in grade 10. Only 9% of the males were in grade 11 (one person) and no females were in grade 11.

The choice of classes for obtaining the sample more or less dictated the grade level of the students. In both schools the classes were predominantly ninth and tenth grade students. Therefore the sample was representative of the available population.

No significant relationships were found between grade in school and body satisfaction, environmental factors, or Tanner stage. This finding was expected from the similarity of grades.

Height. The distribution of heights for males in the sample, reported by percentile, appears to be a distribution which is slightly skewed to the taller end of the scale. Of the males, 17% were in the 5th to 25th percentile, 40% were in the 25th to 75th percentile, 30% were in the 75th to 95th percentile and 13% were taller than the 95th percentile. Since no males reported heights below the normal, none were considered to be late maturing (no evidence of growth by age 15). Clausen (1975) believed that late maturing males were handicapped socially and could be considered to have body image concerns. It cannot be determined from the data whether any of the males were early maturers, a phenomenon that Gross and Duke (1980) suggested gave a definite social advantage, presumably because taller males are more desirable.

Height was noted as an item of concern for adolescent males (Clifford, 1971; Group for the Advancement of Psychiatry, 1968; Hacklander,

1968). Apparently the concern is about being too short, since in Scanlon's sample (1975) only 48% of the males thought they were the right height. Of his sample 2% wanted to be shorter, while 50% desired to be taller. Statistically the sample for the current research was slightly taller than normal, which may have added to their body satisfaction.

The reported heights for females in the sample were normally distributed. Of the females, 21% were in the 5th to 25th percentile, 29% were in the 25th to 75th percentile, 20% were in the 75th to 95th percentile and only 10% were above the 95th percentile. One female reported a height of 6'5" which presumably was an error since the researcher did not observe any females of that height among the participants.

Clifford (1971) found that females were as concerned as males about height. However the study done by Scanlon (1975) found that 68% of the females were satisfied with their height. Of the females in Scanlon's study, 13% would prefer to be shorter and 20% would prefer to be taller. Since 90% of the current sample were within the normal range for height, the females might be expected to be satisfied with their height.

No significant correlation was found between height and body satisfaction, or between height and any of the environmental factors, or between height and Tanner stage (see Extraneous Variables, Chapter V). Apparently the social advantage of being taller was not important enough to affect rating of overall body image in this sample.

Weight. The reported weight for males was normally distributed with a slight tendency toward the higher end of the normal range. Of the males, 13% were in the 5th to 25th percentile, 43% were in the 25th to 75th percentile, 33% were in the 75th to 95th percentile and 10% were

above the 95th percentile. Of the males, 43% were of high average or above average weight.

Only Clifford (1971) found that males were concerned about being overweight. In Scanlon's study (1975) only 31% of the males believed they were not the right weight. Of the males in his study 18% would prefer to be heavier, and 13% would prefer to be lighter. Therefore it was difficult to predict how weight would affect body satisfaction, environmental factors, or Tanner stage in males.

The reported weight for the females in the current study was normally distributed; 15% were in the 5th to 25th percentile, 61% were in the 25th to 75th percentile, 20% were in the 75th to 95th percentile and only 5% were above the 95th percentile. Only 25% of the females were high average or above average weight.

Females tend to be much more concerned with weight than males according to Clifford (1971), Dwyer et al (1969), Group for the Advancement of Psychiatry (1968), and Hacklander (1968). Scanlon's study was less conclusive (1975). In Scanlon's study, 63% of the females were satisfied with their weight. However 28% believed they were overweight, and 9% believed they were underweight. One might conclude that females who perceived themselves as overweight might be dissatisfied with that aspect of their body image.

The correlation of weight for males and females with the study variables showed that there was a negative relationship with body satisfaction ($r=-.15$, $p=.055$). Since the margin for error is greater than used to test the hypotheses, some caution must be taken in the conclusions drawn from this correlation. It may be true that the larger size of body parts is dissatisfactory to most adolescents. Perhaps the relationship

would have been stronger if females had been analyzed alone since most authors suggest females are more disturbed by being overweight.

Weight was significantly negatively correlated with total environmental factors ($r=-.20$, $p<.05$). Apparently the heavier an adolescent is, the more he/she feels at odds with significant people in the environment. This can be expected since the figure idealized by the media and western culture is slim and trim.

The environmental factor with the most significant relationship to weight was that of sociocultural attitudes ($r=-.25$, $p<.01$). Those adolescents who weighed more tended to believe other teenagers weighed differently, were not as tall as themselves, have a more perfect figure, are healthier, are more pleased with their appearance, are not as grown up as themselves, and that they needed a change in appearance to look like others (see Appendix A). This feeling of being different from one's sociocultural group may be associated with difficulty in identity formation. Establishment of personal identity as conceptualized by Erikson (1968) involved the unification of beliefs about one's self as they relate to other people. The adolescent's personal identity becomes confused when he feels different from other teenagers. Schonfeld (1963) described the feeling of being different as the same as feeling inferior.

The relationship of weight in the current study with peer attitudes also approached significance ($r=-.15$, $p=.06$). Mitchell (1979) noted that peer groups provide a sense of belonging, a feeling of strength and power, which serve as a haven for the adolescent in his developing independence. Adolescents tend to strive for conformity in dress, appearance and behavior to other members of the peer group. The negative

relationship between weight and peer attitudes indicated that adolescents who are heavier feel at odds with their peers. This is a potentially distressful situation for overweight adolescents since they may feel cut off from the social support of their peers.

History of Birth Defect. Only 4% (N=4) of the sample reported the presence of birth defects. Because this number was so small there was no relationship between birth defects and any of the study variables.

History of Deforming Accident or Surgery. Only 11% (N=12) of the sample reported deformities. There was no significant relationship between this variable and the study variables, except Tanner breast development. One possible explanation for this relationship was that females may have responded positively to this question more than males because they tend to be more concerned with scars and imperfections than males. Adolescent females value a flawless skin surface (McKinney, 1977), so much so that even a small appendectomy scar may be considered a 'deformity'. Adolescent males, on the other hand, may be unconcerned about scars left from accidents or surgery because there is relatively less affect on their appearance.

Tanner Stage. The summary of the frequencies of Tanner stage for the sample is included under the descriptive findings. Of this small sample of high school males, none rated themselves in Tanner stage 1 or 2. This was somewhat different from Harlan's findings (1979) in similar age groups. He found that 3% of his sample of 1,542 males, aged 14 to 16, were in Stage 1 and 4% were in Stage 2. Apparently the current sample was sexually more mature than the larger United States sample with which Harlan worked. It is important to note that the current data was collected by self-report while Harlan used physician rating.

Only one male (3.4%) in the current sample rated himself in Stage 3.

In Harlan's sample 9% were rated by physician to be in Stage 3. Of the current sample 41% rated themselves in Stage 4, while 31% of Harlan's sample were rated in Stage 4. Of the current sample 55% rated themselves in Stage 5, while 53% of Harlan's sample were rated in Stage 5. The higher percentages of the current sample who rated themselves in the more adult stages may relate to the fact that a greater percentage of the current sample were 15 or 16 years old (70%).

No information has been reported on the percentage of the adolescent population at a particular age, that are in a particular stage of development. Therefore, the only conclusion that can be made is that none of the males or females in the present study were delayed in their pubertal changes, since all reported some development of secondary sex characteristics. A diagnosis of delayed puberty can be made if there is no testicular growth in males by age 14, or if females had not begun breast growth by age 14 (Erickson & Friedman, 1978).

In conclusion, none of the socio-demographic variables was significantly related to body satisfaction. Weight, however, was negatively related to environmental factors ($r=-.15$, $p<.06$). The heavier one was the more perceived conflict with the attitudes of parents, peers, and sociocultural group. So it appears that adolescents are particularly vulnerable subjects to our society's pressure to be thin. Young adolescents may have the added frustration of childhood fat that may eventually be redistributed to adultlike proportions, but may make them look very different from the ideal at the present.

Results of Body Image Perception Posed by Research Questions and Hypotheses

The three scales, Body Satisfaction, Environmental Factors, and Tanner Stage were used to describe body image perception of adolescents

aged 14 to 16 years. Reliability was measured in terms of internal consistency by means of the coefficient alpha. The Body Satisfaction Scale had a reliability coefficient of .92 and the Environmental Factors Scale had a coefficient of .80 overall, with .63 for parental attitudes, .57 for peer attitudes, and .62 for sociocultural attitudes.

Crano and Brewer (1973) suggest that a scale must produce an alpha coefficient of at least .80 to satisfy the criterion of internal consistency. Since the overall environmental scale satisfied the criterion it may be an instrument that will produce consistent results, since the interrelatedness of the items is so high. However, neither of the subparts of the scale can be considered to be reliable enough to use alone in their present form, since the coefficients were considerably lower than .80. A possible explanation for the unreliability is that the subparts did not contain enough items. In the future, items should be added to each of the subparts and the reliability tested again.

The environmental scale was also subjected to factor analysis to determine the number of dimensions and the pattern of relationship between the attitudes being tapped. All but three of the items showed similar factor loadings for the three factors, which constituted the subparts of the environmental scale, parental attitudes, peer attitudes, and sociocultural attitudes. Using a loading of .25 as the cut off point for deleting items, statement 6 and statement 10 were deleted from the scale (see Appendix D). Since both statements used the concept of height, it might be concluded that height has a different relationship to body image than the other items, such as looks, appearance, weight, health. Statement 21 (see Appendix D) was also deleted. Since two other statements related to the same concept of health were not deleted, it may be

assumed that something in the wording of the statement was confusing to the students.

Reliability of the Tanner staging was assumed from the demonstration of accuracy over the years in clinical practice. The reliability of self rating was assumed from the high inter-rater reliability shown by Duke (1980), .91, and Morris and Udry (1980), .88.

The research was limited by the consideration of only content validity in the construction of the environmental scale. Future use of the instrument would be improved by the use of statistical techniques to insure construct validity.

Having demonstrated the reliability of the instruments and judged the instruments to be validly measuring the content desired, the research questions were answered and the null hypotheses tested.

Research Question 1

How satisfied is the adolescent male with his body?

The mean body satisfaction score was calculated for each male. The mean of all the male scores was 3.32, slightly higher than the median, indicating that this sample was overall mildly satisfied with their bodies. The lowest male score was 2.42 and the highest was 4.40. When the frequencies were evaluated however, it was noted that 33% of the means fell below the median (negative feelings) while 67% fell above the median (positive feelings).

Males in Clifford's study (1971) were considerably more satisfied with their bodies on the average than the current study since the mean score in his study was 3.71. He concluded that males were not as critical of their bodies, especially part-by-part, as females seemed to be. However his conclusion that males were more satisfied with their bodies

was supported by the current study.

An adolescent who relates positively toward his body may be expected to be adapting to the changes that come with growth and development. Since satisfaction with his body is closely tied to personal identity (Dempsey, 1972; Erikson, 1968; Norris, 1970; Schonfeld, 1963), the more body satisfaction, the greater the likelihood of normal progress of identity formation.

Research Question 2

How satisfied is the adolescent female with her body?

The mean body satisfaction score was calculated for each female. The mean of all the female scores was 3.21, very close to the median, indicating females were mildly satisfied with their bodies. The lowest female score was 2.20 and the highest was 4.78. This showed a wider range of feelings than noted for males. Evaluation of the frequencies for the females revealed that 23% of the means fell below the median (negative feelings) while 77% fell above the median (positive feelings).

The females in Clifford's study (1971) showed similar satisfaction as the current study. The percent of positive feelings leads one to suspect that females have more positive feelings toward their bodies as a whole than is readily apparent by consideration of mean scores alone. The 77% of the mean scores that fell above the median might indicate that dissatisfaction for one's body in females may be attributed to significant negative feelings toward a small number of body parts. However the current study supported Clifford's findings that adolescent females are mildly satisfied with their bodies.

No range of normal mean scores of body satisfaction has been reported. Neither is there a suggestion about relative satisfaction of certain scores. Therefore the description of the mean scores

derived in the current study as 'mildly satisfied' was the researcher's subjective determination.

Research Question 3

What body parts are the most satisfactory to adolescent males?

The most satisfactory body parts for males (means above 3.70) were sex organs, eyes, hair, legs, shoulders, lips and body build. These findings contrasted with the Clifford study (1971) in which the most satisfactory body parts reported were tongue, hands, fingers and feet.

There was no research that dealt with feelings about sex organs in the literature. The satisfactory feelings about these parts may relate however to their reported satisfaction with being male and possibly to the more advanced Tanner stages reported by this group.

The satisfaction with eyes, hair and lips has never been reported before. This may indicate a trend in adolescent males today to be more aware of their facial characteristics. Satisfaction with shoulders, legs and body build was also a new finding. Males in previous studies have been negatively concerned about shoulder width and body build. The positive feelings about these parts may indicate that the sample was also relating these characteristics to the positive feeling of being male and the greater development of secondary sex characteristics in the more advanced Tanner stages, eg. shoulder width and muscle mass. The positive feelings may also reflect the current trend toward physical fitness.

Males in the current study also picked body functions as satisfactory. They were most satisfied with being male, and with their ability to exercise, their health, muscle tone and energy level. This finding supported Clifford's conclusions that males like being males. The health item was also rated high by the males in Clifford's study. Dwyer et al

(1969) found that the reason males stated for dieting was to improve their physical fitness. This prompted them to conclude that males tend to judge their bodies as a whole rather than on a part-by-part basis.

The current sample's satisfaction with body function above individual body parts was a surprise. Previous use of the Body Satisfaction scale had emphasized body parts and suggested the wording of the present research questions. Future research should focus on the differences that may be inherent between body parts and functions within the scale.

Research Question 4

What body parts are the least satisfactory to adolescent males?

Males were dissatisfied with their height (a global part), knees, forehead and waist. Dissatisfaction with height supported Hacklander's findings (1968) and concurred with the Group for the Advancement of Psychiatry (1968). However the more recent research had not found height to be of concern (Clifford, 1971; Dwyer et al, 1969; Scanlon, 1975). There was no evidence in the literature that males would have such a low opinion of their knees, or their forehead. The males in Clifford's study and Dwyer's study also rated waist very low.

Males may have negative reactions to their knees because of size and shape that is out of proportion to the rest of the legs. Tanner (1962) and Marshall (1975) noted that some body parts grow at different rates of speed than others making them disproportionately large for a time. Another possibility is that those studied had sports related experiences where knees were injured, or were a problem for some reason, such as football, track, tennis, etc.

The negative feelings about one's forehead may have related to the

presence of acne which commonly occurs there. Scanlon (1975) noted that many adolescents were concerned about acne. The adverse reaction to waist among the males was explained by Clifford (1971) to be related to a concern for weight in general and because of the relationship of waist size to masculinity. Normally males lose fat deposits during the growth spurt, while they increase in muscle mass.

The one body function rated very low was elimination. This was not reported by any of the previous authors. One possible explanation for the negative feelings about elimination was that the act of elimination was considered disgusting.

Research Question 5

What body parts are the most satisfactory to adolescent females?

Rank ordering was also done to analyze the opinions of the females toward their body parts. Females were most satisfied with their eyes, hair and height. The satisfaction with eyes and hair supported the findings of Clifford (1971) and Hacklander (1968). The observation that females spend a lot of time putting on eye makeup and fixing their hair may be related more to an attempt to highlight positive qualities than to counteract flaws. None of the previous studies found height to be rated so high.

Females rated the most satisfaction with the body functions of sex (being female), health, energy and exercise. There was no reference to positive feelings about being female in the literature. The improved status of women today may have influenced this expression of satisfaction. Females in Clifford's study also rated health very highly. Energy and the exercise of running were rated considerably lower in Clifford's study however. The satisfaction with health, exercise and energy level in the

current study may have some relation to their participation in the health education and physical education classes which normally emphasize these qualities. Also today, healthy, strong bodies are idealized by the media, so adolescents may be involved in jogging or aerobic exercise or the latest health fad, in order to be accepted as part of the group.

Research Question 6

What body parts are the least satisfactory to adolescent females?

The rank ordering of body parts by mean scores indicated that thighs, hips, abdomen, buttocks, feet, knees, legs, hands and waist were all rated below 3.00. Hips and abdomen were found by other researchers to be a common dissatisfaction in females (Clifford, 1971; Dwyer et al, 1969; Hacklander, 1968). The adolescent female may be particularly vulnerable to the cultural ideal of being thin. Females are also faced at adolescence with the reality of the normal addition of fat deposits, especially of the hips and buttocks, and the rounding of the hips in response to estrogen production, during normal sexual development. The female pelvis typically widens with sexual maturation and no longer resembles the straighter configuration of childhood.

Females showed an increased tendency to rate individual body parts in a more negative manner than males. They rated twice as many items with negative feelings as males. This finding supported Secord and Jourard's conclusion (1953) that females were more critical of their bodies than males. This places the adolescent female at risk as a group for body image disturbances.

The body functions with which females were most dissatisfied were weight and appetite. The combination of the emphasis on weight, appetite and size suggested that females may be at risk for eating disorders,

that is any abnormal regulation of food intake. In fact Dwyer suggested that many adolescent females in particular, thought they were fat even though they were of normal weight. Dwyer also believed that this was often the underlying perception for abnormal concern with being fat in anorectic adolescents. The obese person on the other hand felt themselves to be inferior in appearance, which resulted in negative attitudes toward losing weight, which might terminate in compulsive eating.

The adolescent female's dissatisfaction with parts of her body is aggravated by the negative attitude of most Western societies to even mild overweight, especially during adolescence and young adulthood (Becker, 1981; Dwyer et al, 1969). This is more true of white, middle class cultures than those of other races. Adolescents, who are very impressionable, may only see thin young people presented in the media. The message portrayed is that only females who have a thin figure with a small waist, hips, legs, etc. are perfect enough to be pictured for others to see. In addition, the media tends to link success and happiness with appearance. The adolescent may believe that a figure like those she sees on magazine covers, on television, at the theatre, and in other contemporary entertainment may be the only path to ultimate success and happiness.

Today's teenager also has seemingly limitless access to all types of media events so that the information portrayed there pervades her life. It is possible that in the eyes of an adolescent the values portrayed in the media are the norms of Western culture. This perception, however misguided, pressures females to attain these goals of appearance without regard for the normal variations in body structure, or the norms of other cultures.

Table 17. Satisfaction with Body Parts and Functions for Males and Females.

	Males		Females	
	Body Parts	Body Functions	Body Parts	Body Functions
Most Satisfactory	Sex Organs Eyes Hair Legs Shoulders Lips Body Build	Sex Exercise Health Muscle Tone	Eyes Hair Height	Sex Health Energy Exercise
Least Satisfactory	Height Knees Forehead Waist	Elimination	Thighs Hips Abdomen Buttocks Feet Knees Legs Hands Waist	Weight Appetite

Table 17 is presented to summarize the data on satisfaction with body parts and functions for males and females. There were similarities in items rated as satisfactory, suggesting the influence of the trend toward health in both sexes in our society. Males were satisfied with more body parts and more body functions than females, suggesting males are less critical than females in self perception of their body.

Females were dissatisfied with many body parts, many of which related to dissatisfaction with weight and appetite. This suggests that females are at risk for disorders associated with body image and weight control.

The differences between males and females in perception of body satisfaction was further demonstrated by point biserial correlation between sex and each body part and function on the Body Satisfaction Scale (see

Appendix F). The finding that males showed significantly more satisfaction ($p < .05$) with appetite, weight, body build, hips, thighs and legs than females, supported the finding that males are less affected by issues related to eating and weight control (Dwyer et al, 1969).

Research Question 7

What relationship exists between the environmental factors and body satisfaction of the adolescent male? Which environmental factor, parental attitudes, peer or sociocultural, has the greatest relationship to body satisfaction in the adolescent male?

Mean scores on the total Environmental Factors Scale were correlated with mean scores of body satisfaction for males. There was a moderate relationship as indicated by the Pearson r of .46 ($p < .01$). The relationship between variables has never been reported in the literature, however the concept of the influence of the opinions of others on the adolescent body image is well documented (McKinney et al, 1979; Mitchell, 1979; Schonfeld, 1963). Secord and Jourard (1954) showed the presence of a cultural ideal in college age males, but didn't attempt to identify what environmental factors were involved.

Mean scores were calculated for each of the three sections of the environmental scale and correlated by the Pearson product-moment correlation with body satisfaction. The relationship with the highest correlation was peer attitudes and body satisfaction ($r=.56$, $p < .01$). This supported the theorists who state that adolescents identify with peers characteristically in their developmental struggle to find an identity apart from parents (Erikson, 1968; Havighurst, 1951). The relationship between sociocultural factors and body satisfaction ($r=.40$, $p < .01$) was

smaller. This, however, indicated that males in this sample tended to judge their bodies in relation to an ideal.

No significant relationship was found between parental attitudes and body satisfaction in this sample. It might be concluded that the males in this group were progressing in the developmental task of becoming independent as evidenced by the independence of parental attitudes and body image. It may also be possible that males did not want to admit that they are influenced by their parents, since that would be compromising their image of masculinity.

The conclusions based on the correlations between the environmental subscales and other study variables are limited, however, by the fact that the subscales, by themselves, demonstrated only a moderate degree of reliability in their present form (see Appendix D). Crano and Brewer (1973) suggest that a much higher index of internal consistency is necessary in order to be assured that the findings are accurate. Therefore the implications of the differences between parental attitudes, peer attitudes and sociocultural attitudes on adolescent body image are tentative.

The hypotheses used to test the relationship between environmental factors and body satisfaction in males were as follows:

Hypothesis 1. There is no relationship between environmental factors and body satisfaction in the adolescent male. The null hypothesis was rejected.

Hypothesis 1a. There is no relationship between parental attitudes and body satisfaction. The null hypothesis was not rejected.

Hypothesis 1b. There is no relationship between peer attitudes

and body satisfaction. The null hypothesis was rejected.

Hypothesis 1c. There is no relationship between sociocultural attitudes and body satisfaction. The null hypothesis was rejected.

An important implication of the strength of the relationship between what others think is normal and one's personal value of his body, in the adolescent male, is the stress placed on the male to conform to peer and cultural norms. Stress often leads to frustration and repeated efforts to adapt to perceived inability to conform to the norms. It is at this point that adolescent behavior may become a problem for himself and others. Though mood swings, depression and some deviant adolescent behavior is considered 'normal' by many theorists (Erickson & Friedman, 1978; Offer, 1969), the nurse should recognize the possible link to body image disorder.

In summary, it was found that a moderate relationship exists between environmental factors and body satisfaction in adolescent males. The factor with the greatest relationship to body satisfaction was peer attitudes. All of the null hypotheses concerning the relationship between environmental factors and body satisfaction in males were rejected except the relationship between parental attitudes and body satisfaction.

Research Question 8

What relationship exists between the environmental factors and the body satisfaction of the adolescent female? Which environmental factor, parents, peers or sociocultural, has the greatest relationship to body satisfaction in the adolescent female?

Mean scores for total environmental factors were correlated with mean body satisfaction in the female group. There was a moderate relationship as shown by the Pearson r of .62 which was significant at the

$p < .01$ level. Females were also affected by attitudes of people in their environment in rating their body satisfaction.

The mean scores for the three sections of the environmental scale were calculated and correlated by Pearson product-moment coefficient with body satisfaction for females. The relationship with the highest correlation was between peer attitudes and body satisfaction ($r=.62$, $p < .01$). Apparently females are similar to males in giving value to their bodies based on how they conform to peer group norms.

It was also found that sociocultural attitudes ($r=.47$, $p < .01$) and parental attitudes ($r=.44$, $p < .01$) were moderately related to body satisfaction in females. The body satisfaction of females was more related to parental attitudes than in males. This supported Schonfeld's observation (1963) that females are extraordinarily sensitive to what others think of them.

The hypotheses used to test the relationship between environmental factors and body satisfaction in females were as follows:

Hypothesis II. There is no relationship between environmental factors and body satisfaction in the adolescent female. The null hypothesis was rejected.

Hypothesis IIa. There is no relationship between peer attitudes and body satisfaction. The null hypothesis was rejected.

Hypothesis IIb. There is no relationship between peer attitudes and body satisfaction. The null hypothesis was rejected.

Hypothesis IIc. There is no relationship between sociocultural attitudes and body satisfaction. The null hypothesis was rejected.

The findings in the present study confirm the idea that females are especially vulnerable to other's values. The media plays an important role

in shaping female values about the body. In addition peer pressure is strong in relationship to the messages she receives about her body.

In summary, it was found that a moderate relationship existed between environmental factors and body satisfaction in adolescent females. The factor with the greatest relationship was peer attitudes. All of the null hypotheses concerning the relationship between environmental factors and body satisfaction in females were rejected.

Research Question 9

What relationship exists between Tanner stage and body satisfaction in the adolescent male?

A Pearson product-moment correlation coefficient was used to analyze the relationship between Tanner stage and body satisfaction. A slight negative correlation existed ($r=-.30$, $p=.055$). This finding indicated that the males at the higher stages of development had lower body satisfaction scores. However, caution must be exercised in drawing conclusions from statistics that show only slight correlations.

The hypothesis used to test the relationship between Tanner stage and body satisfaction in males was as follows:

Hypothesis III. There is no relationship between Tanner stage and body satisfaction in the adolescent male. The null hypothesis was not rejected.

The findings of this study did not support Jourard and Secord's findings (1954) that the larger, stronger male body parts were given considerably more positive feelings. However, Jourard's group did express negative feelings for weight. The possibility exists that those males who were in the more adult stages of development had more negative feelings about their bodies because of weight, and it was for

this reason that a correlation existed between Tanner stage and body satisfaction. It is also possible that college aged males (as in Jourard and Secord's study) felt differently about their bodies than high school aged males.

The findings were surprising, however, in light of the comments already made about the rating of satisfaction with sex organs and being male in this group. Perhaps repeated use of the instruments will uncover a more accurate means of analysis or variation of the instrument.

In summary, no relationship was found to exist between Tanner stage and body satisfaction in adolescent males. This hypothesis was not rejected.

Research Question 10

What relationship exists between Tanner stage and body satisfaction in the adolescent female?

The correlation coefficient for breast development with body satisfaction was -.10 ($p = .20$) and pubic hair development with body satisfaction was .07 ($p = .28$). Neither of these relationships was significant. This finding indicated that females' opinions about their overall bodies were independent of their stage of development.

The hypothesis used to test the relationship between Tanner stage and body satisfaction in females was as follows:

Hypothesis IV. There is no relationship between Tanner stage and body satisfaction in the adolescent female. The null hypothesis was not rejected.

No studies are presently available that correlated Tanner stage with attitudes about the body. The study done by Jourard and Secord (1954) of the ideal female figure found that women desired to have a

larger bust, and smaller waist, hips, height and weight. It might be conjectured that the more advanced the stage of development, the closer to this ideal. However, Jourard and Secord's sample was older and smaller than the current sample, and the 1980's ideal female figure may be significantly different than the one in the 1950's.

In summary, no relationship was found to exist between Tanner stage and body satisfaction in adolescent females. This hypothesis was not rejected.

In conclusion, the results of body image perception posed by the research questions and hypotheses were: Normal adolescent males and females were mildly satisfied with their bodies. Males were most satisfied with body parts: sex organs, eyes, hair, legs, shoulders, lips and body build; and body functions: sex, exercise, health, muscle tone and energy. Males were least satisfied with the body parts: height, knees, forehead and waist; and the body function: elimination.

Normal females were most satisfied with the body parts: eyes, hair and height; and the body functions: sex, health, energy, and exercise. Females were least satisfied with the body parts: thighs, hips, abdomen, buttocks, feet, knees, legs, hands and waist; and with the body functions: weight and appetite.

A moderate relationship existed between environmental factors and body satisfaction in both normal males and females. Males and females showed the greatest relationship between peer attitudes and body satisfaction. The major difference between males and females was that males showed no relationship between parental attitudes and body satisfaction while females showed a moderate relationship.

Normal males and females did not differ in the relationship between

Tanner stage and body satisfaction. There was no relationship in either males or females.

In the next section of this chapter, the limitations of the research study are reviewed and recommendations are made for future research.

Limitations of the Study

Some limitations of the study were identified in Chapter 1. Characteristics of the study sample, the questionnaire and the research methodology all had certain restrictions that limit the generalizability of the findings. A summary of these limitations will be presented in this section.

Sample

The following limitations were noted in the study regarding characteristics of the sample. The sample was a volunteer, convenience group from rural communities, predominantly caucasian. The participants were mostly female. A randomly selected sample, equally divided by sex, from a broader racial and socioeconomic and sociocultural background may have differed in their body image perceptions from the study sample.

The classes from which the students were chosen may have been different in some ways from other high school classes. In a replication of the study, it may be important to select representative samples from a variety of classes.

Since a large percentage of the population chose not to participate, the actual participants may have differed from the total population. It was not known whether parents or students themselves refused to participate. A consideration for future research may be to solicit feedback from nonparticipants in order to determine if the sample is truly representative of the population and to note any confounding variables.

Questionnaire

A possible limitation of the questionnaire was in the ability of participants to rate their perceptions of feelings about their bodies, and the influence of environmental factors, and to rate their stage of sexual maturity. The reliability and validity of the environmental scale had not been established prior to the research. Reliability may be improved on the subparts of the environmental scale by the addition of items for each part and the addition of other subparts. Future research should also consider a variety of measures to assure construct validity.

Methodology

Generalizability may be further limited by the inability to duplicate the manner in which the questionnaires were administered for the current study. The questionnaires were administered by the researcher in both sites, but one site received more time for questions and interaction concerning the subject than the other. Though no statistical difference in scores was found between the sites, there may have been differences that were not identified. Future research should establish more conformity for the procedure used in the presentation of questionnaires.

There was no time allowed for questions and debriefing after the test administration. In the future a time should be negotiated at each site for follow-up questions.

In summary, limitations of the study sample were discussed in terms of randomization, background of the participants, and information about nonparticipants. Limitations of the questionnaire were in terms of reliability and validity. The methodology would be improved by more conformity of procedure and a negotiated time of debriefment.

Modification of the Conceptual Model Based on Study Findings

The conceptual model of body image development originated by Brown (1977), as shown in Figure 1, has not been tested empirically. No other researchers have compiled the concepts involved in body image theory in such a comprehensive manner. However, there are some deficiencies in the diagrammatic representation of the model. Some modifications that may improve the picture of body image development and make it specific for the adolescent population are suggested in the following discussion.

In Brown's model the interaction of the concentric circles is not clear. Presumably all three levels of bodily experience are important sources of stimuli for development of perceptions about the body. The model might be improved by elaboration of the types of experiences or issues relative to each level that occur at different ages. For instance, in mid-adolescence, the body parts and functions of most concern to body image might be illustrated as shown in Figure 3. In the current study it was found that males and females had specific body parts and functions that were identified as satisfactory or dissatisfactory. The body parts are characteristics of the topological level and the issue is how socially acceptable the body parts are to the individual. The body functions may be included at the behavioral level if they are specifically related to motor ability, cognitive ability, personality variables, or innate perceptual ability. The body functions may also be included at the innermost level if they are more related to sensation, or metabolic activity.

The relative importance of the levels might be depicted by the size of the circle. For instance, in adolescence the influence of the

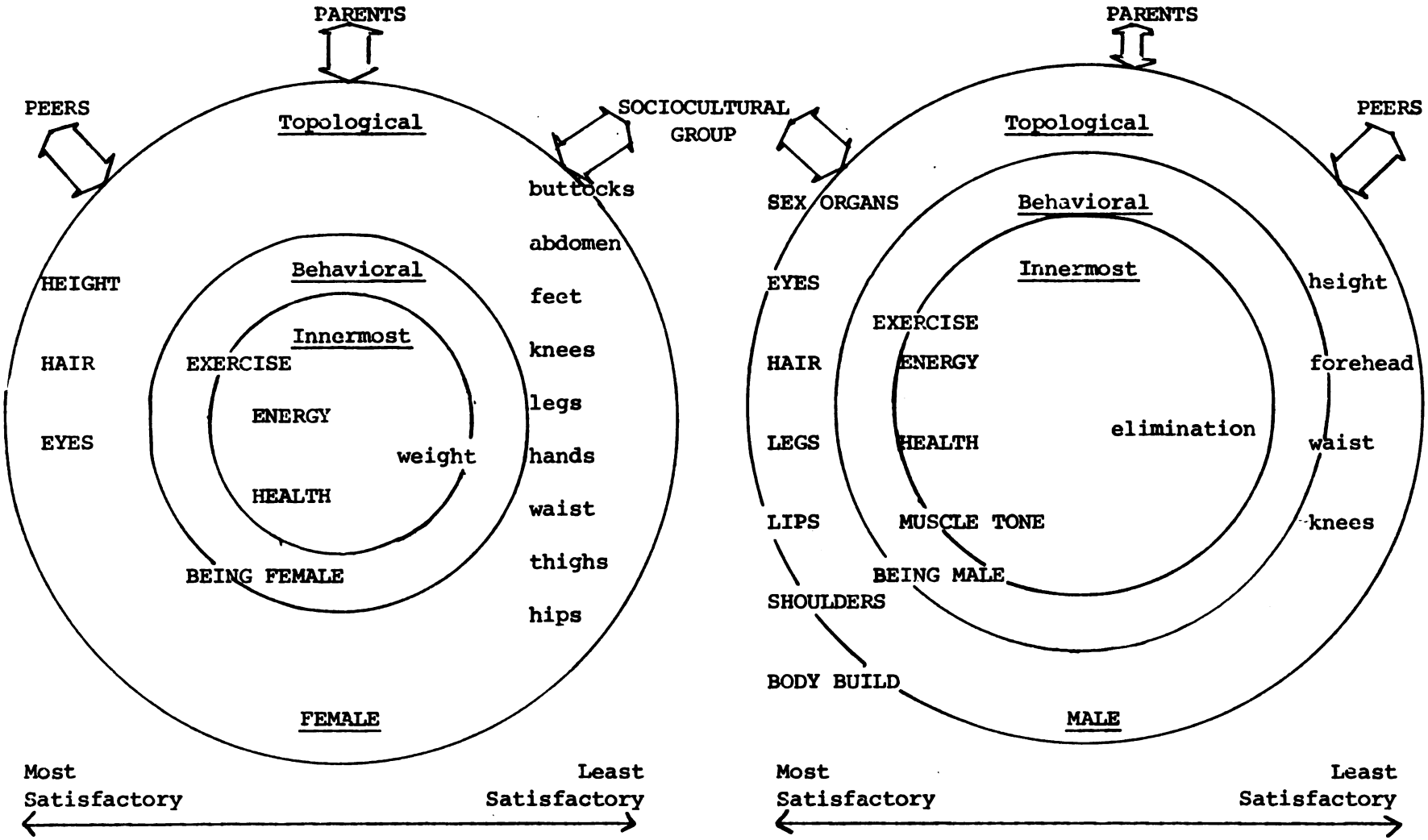


Figure 3. Modification of Brown's Model of Development of Body Image for Perception of Body Image in Adolescent Males and Females.

innermost experiences of growth and new functions, depicted by the larger circle (Figure 3) is greater than at other life stages. Behavioral experiences may be less of a factor in body image perception during adolescence, which could be shown by a smaller circle. The importance of a socially acceptable figure in adolescence has been demonstrated by the findings of the current research as well as earlier studies. The larger topological level might illustrate this conclusion.

The difference in size of the three circles also illustrated the fluid nature of body image perception during early development. Brown's original model seemed to illustrate the more static condition of the adult body image. Each level had relatively equal impact on overall perception without any one outstanding area. In the more dynamic developmental period of childhood there would be more emphasis on the behavioral level, since movement, activity and tactile experiences dominate the experiences of that age group.

The current research demonstrated the ability to study the correlation between one part of the diagrammatic framework, environmental factors, and overall body image (satisfaction). In a similar manner a scale might be developed to measure innermost experiences, or behavioral experiences or topological experiences and a correlation computed with body satisfaction. This would give empirical evidence to support the relationship between the parts of the model.

Brown's model also failed to include the differences that sex makes in body image perception. In the current research, females were more critical of individual body parts and more concerned about weight than males. Males were more negatively concerned about height. Males were also less affected by parental attitudes than females. A suggestion

for modification of the model would be to indicate the differences by two diagrams, in which the topological experiences for females is larger than for males and the issues are different for each (see Figure 3). The size of the arrows indicating the interaction of the environmental factors demonstrates the relative importance of each to the male or female.

Body image perception was measured in the current study in terms of assignment of a value (satisfaction) to various body parts and functions. Brown's model might be modified by attention to this detail through the use of a continuum of satisfaction from left to right of each circle. In Figure 3, a line has been drawn to show the direction of the continuum and the most satisfactory items are located on the left side of each circle in large case type. The least satisfactory items are located on the right side of each circle in small case type.

In summary, Brown's model has been modified to demonstrate the body image perceptions of adolescents. The fluid nature of body image perception was demonstrated by the size of the concentric circles. Sex differences in body image perception was demonstrated by two circles and the listing according to level of experience of specific body parts and functions according to the findings of the current study, and the size of the arrows from the environmental factors. And finally, perception in terms of satisfaction was illustrated by a continuum of satisfaction. Implications of the study findings for nursing practice will be presented in the next section of the chapter.

Implications for Nursing Practice

In Figure 2 (Chapter II) a diagrammatic representation of the nursing process according to Orem's self-care theory of nursing (1980) is presented.

There are three major steps in the nursing process suggested by the diagram: (1) determining why nursing care is needed, (2) designing a system of nursing and planning for the delivery of nursing care that will contribute to the client's achievement of health goals through self-care, and (3) initiating and controlling nursing activity to aid in the client's self-care ability. The implications of the current research findings for nursing practice will be discussed in relation to each of the three steps in the nursing process.

A need for nursing care is determined by assessment of the client's health status through objective and subjective information, and comparison with known standards of health. According to most adolescent theorists, all adolescents go through a stage of turmoil in which the changes in physical appearance and functions of the body caused by growth, create a disruption in previous ways of defining one's self. The process of sorting out and coping with the changes is known as identity formation and is considered to be the foremost developmental task of adolescence (Erikson, 1968). Therefore, Orem suggests that all adolescents have a potential need for nursing assistance to meet the disruptions in self-care ability caused by this developmental crisis. The task of identity formation has been further delineated to suggest that dissatisfaction with the changes in body image is a major component of the distress noted in adolescents.

The current research has shown the effectiveness of the research instruments to provide subjective information on perception of body image. The Body Satisfaction Scale provided client rating of feelings about their bodies. The Environmental Factors Scale provided client rating of perceptions about the influence of others on their own body image.

The self rating of Tanner stage provided information on sexual development. Since adolescents are typically reluctant to offer information about themselves verbally (Kimball & Campbell, 1979), some clinicians have found that adolescents are able to disclose more of themselves in writing or by questionnaire. The research instruments may be very valuable as a source of descriptive information for the establishment of a comprehensive data base on the adolescent client for the primary care practitioner. Since the whole questionnaire can be taken in 15 minutes, it could be part of the intake history for all adolescents who enter a health care (or primary care) facility.

The research scales also provided a potential source of objective data for evaluating body image. Mean scores for body satisfaction and environmental factors may be added to the developmental data base. Specific body parts and functions that are rated below the mean can be determined, suggesting possible points for further assessment. As more empirical data is collected it may be possible to identify a range of normal body satisfaction and environmental influences for the adolescent. This would aid in establishing a nursing diagnosis of normal body image development or disturbance in body image.

The nurse may consider the self rating of Tanner stage as a viable alternative to collect information on normal sexual development. When used in conjunction with physical exam, self rating may indicate discrepancies in self perception or serve to establish the accuracy of self perception. The nurse could use the data from this research to reassure the adolescent of normal sexual development, or to indicate potential areas for nursing intervention.

An interesting finding in the current study was the broad range of

feelings, especially in females, toward one's body. There were certainly many similarities in expression of satisfaction, as noted in Chapter V, but one should not overlook the individuality of the responses. Each adolescent should be considered for his or her own individual status in regard to body image changes when determining a nursing diagnosis. However, no range of normal body image is currently available, so the nurse is not able to label what is normal or abnormal at the present time.

Since dissatisfaction and conflict are considered to have negative connotations and indicate a limitation or deviation from optimum health, this terminology may be considered for use in describing the self-care limitation associated with body image changes, that is dissatisfaction with body parts and functions and conflict with significant others in the environment concerning one's personal appearance. The issue of environmental conflict should be included on the model of Orem's self-care theory of nursing (Figure 2) under 'Requirement for Nursing', as a nursing diagnosis implying need for nursing intervention.

A conclusion from the current findings was that females may be at risk for disorders of eating and weight control, related to their concern for weight, appetite, and the numerous body parts that are part of the socially accepted figure. The nurse may use this information in making judgments about individual perceptions of weight and dissatisfaction with the figure.

The research scales may also be used in a non-healthy population to identify body image issues. The same psychosocial issues of identity are of importance to this group. However the findings of this study may not be applicable to the non-healthy population.

The second step of the nursing process described by Orem (1980) consists of "determining the ways of assisting to be used by a nurse in relation to the specific self-care limitations of the client and distributing the tasks involved in meeting the self-care requirements to either the nurse or the patient or both jointly" (p. 45). The assistance needed is determined by the particular characteristics of the client, such as knowledge of the problem, attitudes of the client toward self-care, and ability and skill to perform the self-care tasks. The distribution of tasks depends on the roles for which provider and client mutually agree.

Adolescents are typically noncompliant, emotionally labile, and generally rebellious in their contacts with providers (Mitchell, 1979). Therefore determining a self-care demand and a nursing goal mutually with the adolescent may be frustrating. Establishing rapport with the adolescent must be the first action in the care plan of the nurse. The current research may provide a basis of establishing rapport through interpreting to the client the positive nature of body image perception as it is revealed by rating of their feelings. It may be pointed out, if it is true, that their scores are similar to others their own age. The findings of the current study that adolescents tended to have positive feelings about their sex, their health, exercise and energy are significant in that they may suggest another common point of rapport between nurse and adolescent.

The current study also documented that adolescent females are concerned about their weight and that it has a significant relationship to body satisfaction. Females were concerned about their waist, hips, thighs, abdomen, buttocks, and legs, which seem to relate to the problem

of being overweight because these body regions are the areas where fat is typically deposited under the influence of estrogen in a maturing female. Each visit for the adolescent female should include monitoring of weight, diet, verbalization of feelings, and guidance about the changes in shape due to growth and sexual maturity. Counseling or referral will be determined individually. The nurse may also suggest and facilitate measures to correct abnormal weight, improve muscle tone, and to prevent weight gain.

Since males in the current study showed concern for their height and knees, care plans for males should include monitoring of height with counsel on normal growth trends, such as the disproportion of parts at the early stages of growth. Males also rated low satisfaction with waist which indicated a need for guidance concerning loss of body fat that goes along with growth and sexual maturity. Males may also need education and suggestions to help manage problems with skin that affect their appearance, especially the face and forehead. Since males were also least satisfied with elimination they may benefit from education about normal body functions.

There is a tendency for adolescents to want to attain a socially acceptable appearance without regard for what is healthy or realistic. Many adolescents are misguided by information they receive from the media, from misinformed parents and ignorant peers. Therefore the adolescent is in need of education about the changes of puberty and the implication for body image, as well as the normal feelings of adolescents. The system described by Orem as 'supportive-educative' allows the nurse to provide encouragement for the adolescent who is stressed by the changes in body image or to provide resources for

specific intervention, as well as specific teaching about developmental changes.

The third step in Orem's nursing process involves the implementation of the nursing activity planned in Step 2, and the control of the process by evaluation of the effectiveness of the interventions in reaching the established goal. Assuming that body satisfaction is a realistic goal (see Figure 2), nurses may be aided by a specific tool such as the instruments used in this research for evaluating the progress toward the goal. Body satisfaction may be tested in the early assessment interaction with a client and again after specific intervention in order to determine a change.

The question of what satisfaction or dissatisfaction with body parts means to an adolescent in terms of overall feelings about the self and resulting behavior was not studied in this research. Because observation of adolescents has shown that they are easily frustrated by circumstances and negative messages, it may be assumed that the effect of knowledge of low body satisfaction scores may also be frustrating. Therefore it will be important to emphasize the positive scores that were found in the current study.

Latta and Lee (1981) suggest some strategies for improving intervention with adolescents. They stress the importance of assuring confidentiality and privacy for the adolescent. An adolescent must know that the nurse accepts him or her as a person, although some objectionable behavior may be discouraged. An adolescent's respect may be gained by listening attentively, without lecturing, and really trying to understand their feelings. Nurses who encourage responsible behavior and independence in the adolescent should maximize the effectiveness of

their activity.

Adolescents are usually seen in the primary care practitioner's office because of illness or because of an established behavioral problem. A consideration for nursing practice is how to provide health promotion and preventive services to the adolescent. The researcher used the school system to find a large sample of normal adolescents, suggesting in retrospect, that this may be the most likely point of initiating nursing activity with adolescents. Adolescent body image concerns should be a special area of expertise for the nurse who practices in secondary schools. She/he may offer information via classroom instruction, directly to students with follow up screening, consultation, and referral services. She/he may also provide teachers with inservice training in adolescent developmental needs and communication strategies such as already discussed, to build rapport.

Adolescents may differ in their desire to have parents involved in their care. Generally parents should be included in the education process. However adolescents may be inhibited by the presence of parents in verbalizing feelings. Adolescents should have the privilege of individual counseling, while joint sessions with parents may be desired to facilitate their participation in the process of normal developmental crisis counseling. Nurses may also share information body image perception in adolescence with community parents groups to promote healthy family interaction with adolescents.

In summary, the research findings were related to the steps in the nursing process as described by Orem and outlined by diagram in Figure 2. It was suggested that the Body Satisfaction Scale, the Environmental Scale, and the self rating of Tanner stage are sources of

subjective data, while their interpretation is a source of objective data once values are more standardized. The findings can also be used as a source of implications for planning nursing care. The instruments may be used as they are to evaluate the progress toward a nursing goal. Suggestions were made for improving access of adolescents to health care by use of the findings in the school curriculum and by school nurses. Finally, suggestions are made for including parents in the health care of adolescents.

In the next section of the chapter, implications for nursing education will be presented.

Implications for Nursing Education

The results of the current study can be interpreted to suggest several considerations for nurse educators. First it is apparent that a comprehensive theory of adolescent body image has not been tested adequately through nursing research. Brown's model (1977) may be used as a basic framework, and the modifications presented may be used to illustrate the needs of adolescents.

The negative aspects of the adolescent developmental period have been stressed in the literature and conflicts in body image have been expected as a part of normal adolescence. The findings that adolescents have relatively positive body satisfaction scores raises some questions about the former conclusions. Nurse educators are responsible to foster research and to apply current findings to curricula. The findings concerning the nature of female dissatisfaction would be especially important to include in course content for nurses.

The current research was designed to provide information that will improve patient care by nurses in the role of primary care practitioner.

Efforts to promote the role for nurses in primary care may come from nurse educators. There is a need for a nursing role in the outpatient care of normal adolescents, especially as school nurses, as health educators in the community, as diagnosticians, and as referral sources for counseling. The current research findings suggest that normal adolescents have concerns about body image. Since traditionally adolescents enter the health care system only after they become ill or have a behavior problem, nurses are needed to intervene with adolescents in innovative ways. Nurses who are preparing for practice in the community or in primary care need to be aware that body image is an important part of health maintenance.

The research findings also added to the normative data on adolescents, especially rural, caucasian high school students. This information could be disseminated to teachers in the public schools to aid in development of course content. For instance, the feedback from this research will be given to the health education teacher and the physical education director from the schools where the sample was obtained, with suggestions about what the findings mean. The findings might be used as a basis for presentation to interested staff.

In summary, implications for nursing education included: a need for continued testing of the Brown model of body image development, its inclusion in content of nursing courses on adolescence, and the development of roles for nurses in primary care. It was also suggested that body image changes should be part of the curriculum for high school teachers and others who work with adolescents.

In the next section of the chapter, implications for future research will be presented.

Implications for Future Research

There are several implications for future research that have been suggested by the study. The volunteer sample was composed of predominantly rural, caucasian students. This may have had an effect on the body perceptions described by the study. A study repeated in the same age group would be enhanced by a more broad-based racial, ethnic and socioeconomic background, from which a randomized sample was obtained.

The following suggestions are made for future research to study the body image perceptions of adolescents:

1. A replication of the study should be conducted with a sample from other adolescent age groups, ie. early adolescence, 11 to 13 years of age or late adolescence, 17 to 19 years of age. There is a continuing need for current descriptive data on the phases of adolescent body image development. A comparison could then be done between the age groups, to see how perceptions change over time.

2. A longitudinal study of body image beginning with pre-adolescent children, aged 9 or 10, sampled periodically throughout adolescence, to age 19 or 20 would also give data on the changes in perception over time.

3. An open ended interview with adolescents would produce information to add to the environmental scale. Other subparts of environmental influences may be suggested.

4. A mechanism for gathering data on the nonparticipating group should be devised, perhaps with questions on the consent form.

5. The Body Satisfaction Scale should be tested by separating the body parts and functions, to determine if one or the other is producing a greater impact on body image.

6. A statistical measure of construct validity should be employed

to improve the ability of the scales to measure body image, as a construct.

7. A revised research design might be used place sex as an independent variable in order to be more conclusive about the role of sex as a determinant of body image.

8. Experimental studies should be done to test the effectiveness of nursing intervention with adolescents who are experiencing body image changes. The use of the experimental design would allow testing of the most appropriate timing of the intervention as well.

9. The research instruments might also be used with a chronically ill population, in order to determine the changes that illness make on on body image of adolescents. Since the environmental instrument has never been used in this way, this would be a most valuable addition to the literature.

In summary, implications for further research included altering the methodology to include information about non-participants, a broader socioeconomic and racial background, different age groups, a longitudinal study, an interview approach, revision of the Body Satisfaction scale to separate parts and functions, revison of the Environmental Scale to include more items, testing sex as an independent variable, and the testing of the findings with experimental design and intervention studies, and with a chronically ill group.

Summary

A summary and interpretation of the research findings of the current study have been presented in Chapter VI. Recommendations for nursing practice and nursing education have been presented, as well as suggestions for further research in body image perception of adolescents.

APPENDICES

APPENDIX A

BODY IMAGE QUESTIONNAIRE

APPENDIX A

BODY IMAGE QUESTIONNAIRE

THE FOLLOWING QUESTIONS DESCRIBE GENERAL THINGS ABOUT YOU. PLEASE ANSWER ALL THE QUESTIONS TO THE BEST OF YOUR ABILITY.

1. Please write in today's date.

   _____
   Month Day Year

2. When were you born?

   _____
   Month Day Year

3. How old were you on your last birthday?

   _____

4. What is your sex? (CHECK ONE)

   Male _____

   Female _____

5. What is your racial or ethnic background? (CHECK ONE)

   White _____ Oriental _____

   Black _____ Other _____ (PLEASE WRITE IN)

   Spanish ____ _____

6. How tall are you?

   _____ _____
   Feet Inches

7. How much do you weigh?

   _____

8. What is your present grade in school? (CHECK ONE)

   9 _____ 11 _____

   10 _____ 12 _____

9. Were you born with a noticeable physical birth defect? (CHECK ONE)

Yes _____ No _____ (GO TO QUESTION 10)

↓

9a. Please describe the physical defect.

_____

10. Do you have a chronic illness (that is an illness or disorder that is not curable, or one that requires a long period of treatment, such as Diabetes, Heart Disease, Cystic Fibrosis, Epilepsy, etc.)? (CHECK ONE)

Yes _____ No _____ (GO TO QUESTION 11)

↓

10a. Please describe the illness.

_____

_____

11. Have you had an accident or surgery that left a noticeable deformity? (CHECK ONE)

Yes _____ No _____ (GO ON TO THE NEXT PAGE)

↓

11a. Please describe the deformity.

_____

_____

YOU HAVE COMPLETED THIS PART OF THE QUESTIONNAIRE. PLEASE BEGIN ANSWERING THE NEXT SECTION ON THE NEXT PAGE.

MOST TEENAGERS HAVE SOME FEELINGS ABOUT HOW THEY LOOK AND ABOUT HOW THEIR BODIES WORK. THE TOTAL OF ALL YOUR FEELINGS AND ATTITUDES ABOUT YOUR BODY IS CALLED BODY IMAGE. THE FOLLOWING IS A LIST OF 50 BODY PARTS AND FUNCTIONS. PLEASE CHECK THE FEELING THAT BEST DESCRIBES YOUR FEELINGS ABOUT THAT ITEM. IF YOU ARE UNSURE ABOUT THE BEST ANSWER FOR ANY QUESTION, ANSWER WITH YOUR BEST GUESS.

	Strong Negative Feelings	Moderate Negative Feelings	No Particular Feelings	Moderate Positive Feelings	Strong Positive Feelings
1. Hair	____	____	____	____	____
2. Facial Complexion	____	____	____	____	____
3. Appetite	____	____	____	____	____
4. Hands	____	____	____	____	____
5. Distribution ofHHair over your body.	____	____	____	____	____
6. Nose	____	____	____	____	____
7. Fingers	____	____	____	____	____
8. Elimination	____	____	____	____	____
9. Wrists	____	____	____	____	____
10. Breathing	____	____	____	____	____
11. Waist	____	____	____	____	____
12. Energy Level	____	____	____	____	____
13. Back	____	____	____	____	____
14. Ears	____	____	____	____	____
15. Chin	____	____	____	____	____
16. Exercise	____	____	____	____	____
17. Ankles	____	____	____	____	____
18. Neck	____	____	____	____	____
19. Shape of Head	____	____	____	____	____
20. Body Build	____	____	____	____	____

	Strong Negative Feelings	Moderate Negative Feelings	No Particular Feelings	Moderate Positive Feelings	Strong Positive Feelings
21. Profile	____	____	____	____	____
22. Height	____	____	____	____	____
23. Age	____	____	____	____	____
24. Buttocks	____	____	____	____	____
25. Thighs	____	____	____	____	____
26. Width of Shoulders	____	____	____	____	____
27. Arms	____	____	____	____	____
28. Chest	____	____	____	____	____
29. Eyes	____	____	____	____	____
30. Digestion	____	____	____	____	____
31. Hips	____	____	____	____	____
32. Skin Texture	____	____	____	____	____
33. Lips	____	____	____	____	____
34. Legs	____	____	____	____	____
35. Forehead	____	____	____	____	____
36. Teeth	____	____	____	____	____
37. Feet	____	____	____	____	____
38. Sleep	____	____	____	____	____
39. Voice	____	____	____	____	____
40. Health	____	____	____	____	____
41. Sex (Male or Female)	____	____	____	____	____
42. Knees	____	____	____	____	____
43. Posture	____	____	____	____	____
44. Face	____	____	____	____	____

	Strong Negative Feelings	Moderate Negative Feelings	No Particular Feelings	Moderate Positive Feelings	Strong Positive Feelings
45. Weight	_____	_____	_____	_____	_____
46. Back View of Head	_____	_____	_____	_____	_____
47. Mouth	_____	_____	_____	_____	_____
48. Abdomen (Stomach)	_____	_____	_____	_____	_____
49. Sex Organs	_____	_____	_____	_____	_____
50. Muscle Tone	_____	_____	_____	_____	_____

YOU HAVE COMPLETED THIS PART OF THE QUESTIONNAIRE. PLEASE BEGIN ANSWERING THE NEXT SECTION ON THE NEXT PAGE.

THE NEXT SET OF QUESTIONS DEALS WITH YOUR FEELINGS ABOUT THE WAY OTHER PEOPLE SEE YOU. YOUR OWN BODY IMAGE MAY BE INFLUENCED BY HOW YOU THINK OTHERS FEEL ABOUT YOU. PLEASE CHECK THE ANSWER AFTER EACH STATEMENT BELOW THAT BEST DESCRIBES YOUR FEELINGS. IF YOU ARE UNSURE ABOUT THE BEST ANSWER FOR ANY STATEMENT, ANSWER WITH YOUR BEST GUESS.

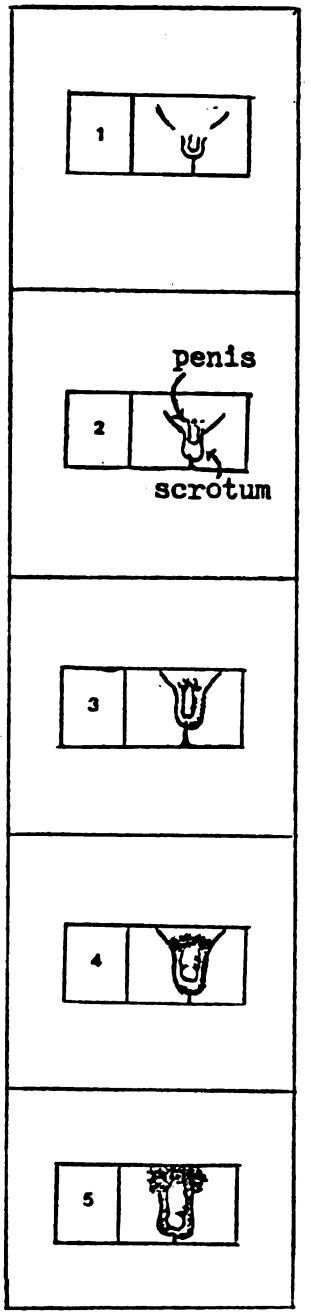
	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1. My parents are pleased with my appearance.	____	____	____	____	____
2. My friends believe I am about the right height.	____	____	____	____	____
3. Most teenagers weigh about the same as I do.	____	____	____	____	____
4. My parents don't understand my concern about how I look.	____	____	____	____	____
5. My friends are pleased with my appearance.	____	____	____	____	____
6. Most teenagers are taller than I am.	____	____	____	____	____
7. My parents would like to change something about my appearance.	____	____	____	____	____
8. My friends believe I am too heavy.	____	____	____	____	____
9. Most teenagers are more pleased with their appearance than I am.	____	____	____	____	____
10. My parents believe I am about the right height.	____	____	____	____	____
11. My friends would like me to change something about my appearance.	____	____	____	____	____
12. A change in my appearance would make me look more like other teenagers.	____	____	____	____	____

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
13. My parents believe I am too heavy.	_____	_____	_____	_____	_____
14. My friends are stronger than I am.	_____	_____	_____	_____	_____
15. Most teenagers my age are more grown up than I am.	_____	_____	_____	_____	_____
16. My parents would like me to be healthier.	_____	_____	_____	_____	_____
17. My friends are as concerned as I am about appearance.	_____	_____	_____	_____	_____
18. Most teenagers have a more perfect figure than I do.	_____	_____	_____	_____	_____
19. My parents believe I have a strong body.	_____	_____	_____	_____	_____
20. My friends would like me to be healthier.	_____	_____	_____	_____	_____
21. Most teenagers are as healthy as I am.	_____	_____	_____	_____	_____

YOU HAVE COMPLETED THIS PART OF THE QUESTIONNAIRE. PLEASE READ THE DIRECTIONS ON THE NEXT PAGE AND CONTINUE WITH THE NEXT SECTION.

BELOW ARE PICTURES OF THE FIVE STAGES OF DEVELOPMENT OF THE MALE GENITALS. SINCE ADOLESCENTS CHANGE IN APPEARANCE SO DRASTICALLY AS THEY MATURE, THE STAGE OF DEVELOPMENT MAY BE IMPORTANT AS A PART OF TOTAL BODY IMAGE.

PLEASE CHECK THE STAGE THAT MOST CLOSELY REPRESENTS YOUR OWN STAGE OF DEVELOPMENT RIGHT. IF YOU ARE UNSURE ABOUT THE BEST ANSWER, ANSWER WITH YOUR BEST GUESS. THERE SHOULD BE ONLY ONE ANSWER. THIS INFORMATION WILL NOT BE SHARED WITH ANYONE.



____ STAGE 1

The penis and scrotum are about the same size as in childhood. There is no pubic hair.

____ STAGE 2

The skin of the scrotum is darker than earlier. The scrotum is longer and the skin is rougher. There may be downy, light, straight hair.

____ STAGE 3

The penis and scrotum are larger. The hair is darker, curled, but only at the base of the penis.

____ STAGE 4

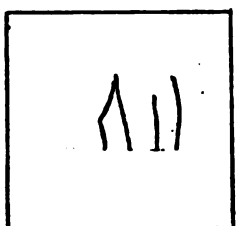
The penis and scrotum continue to grow in size. The skin of the scrotum is darker. The hair is dark, coarse, curly, but still around the base of the penis.

____ STAGE 5

The penis and scrotum are still larger. The hair extends farther up on the abdomen and onto the thighs.

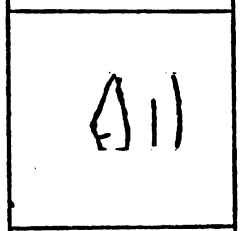
BELOW ARE PICTURES OF THE FIVE STAGES OF DEVELOPMENT OF THE FEMALE BREAST AND PUBIC HAIR. SINCE ADOLESCENTS CHANGE IN APPEARANCE SO DRASTICALLY AS THEY MATURE, THE STAGE OF DEVELOPMENT MAY BE IMPORTANT AS A PART OF TOTAL BODY IMAGE.

PLEASE CHECK THE STAGE OF BREAST DEVELOPMENT AND THE STAGE OF PUBIC HAIR DEVELOPMENT THAT MOST CLOSELY REPRESENTS YOUR OWN STAGE OF DEVELOPMENT RIGHT NOW. IF YOU ARE UNSURE ABOUT THE BEST ANSWER, ANSWER WITH YOUR BEST GUESS. THERE SHOULD BE ONLY ONE ANSWER FOR EACH SET OF PICTURES. THIS INFORMATION WILL NOT BE SHARED WITH ANYONE.



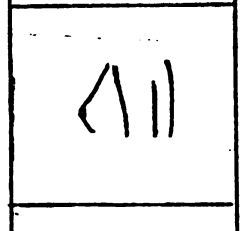
_____ STAGE 1

Pre-adolescent. About the same size as childhood.



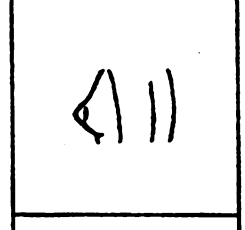
_____ STAGE 2

A small lump of breast tissue causes a visible elevation.



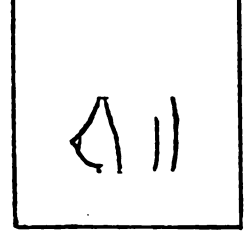
_____ STAGE 3

A more definite elevation. It is larger and breast has rounded shape.



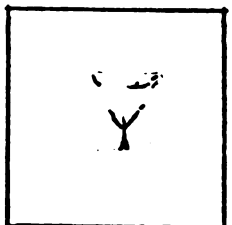
_____ STAGE 4

The brown colored area is larger and sticks out from the rest of the breast.



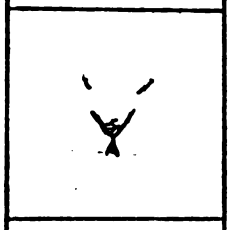
_____ STAGE 5

The brown colored area no longer sticks out but has become part of the contour of the rest of the breast.



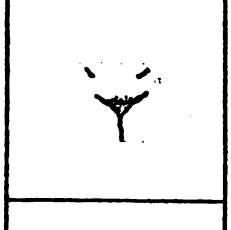
_____ STAGE 1

No pubic hair, but maybe fine downy hair.



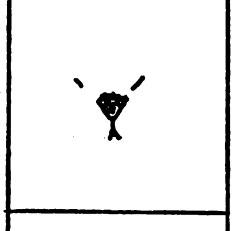
_____ STAGE 2

Few, lightly colored hairs, longer than in first stage.



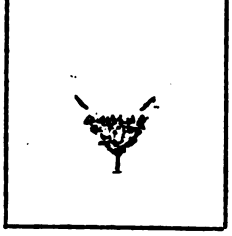
_____ STAGE 3

Pubic hair is darker, coarser, curlier. May be less well distributed than second.



_____ STAGE 4

Dark, coarse, curly hair, forms inverted triangle.



_____ STAGE 5

Dark, coarse, curly hair, more widespread, may even extend onto thighs.

THANK YOU, YOU HAVE COMPLETED THE ENTIRE QUESTIONNAIRE. PLEASE TURN IN TO THE RESEARCHER.

APPENDIX B

COVER LETTER AND CONSENT FORM

APPENDIX B

COVER LETTER AND CONSENT FORM

Dear Parent/Guardian:

The _____High School has graciously consented to allow me to conduct a study of body image of adolescent boys and girls on a group of students who are willing to participate. This study is being conducted by myself as part of the requirements for Master of Science in Nursing through Michigan State University.

I am a registered nurse and have worked with young people for several years, most recently in a physician's office in Owosso, MI. I am interested in finding out more about how adolescents feel about their bodies. I will be asking them to:

1. fill out a questionnaire that deals with their satisfac tion with 50 differenct body parts and functions.

2. check how they feel about the influence of people in their environment on their appearance.

3. decide on their stage of body development based on anatomical pictures and descriptions.

The questionnaires will be kept confidential and the student's anonymous. Participants will not be known to school officials nor will participation have any effect on school grades. Those who choose not to participate will not be penalized in any way.

It is very important to learn as much as we can about normal teenagers in order to better handle the common problems that occur in this group. Your teenager's input will help nurses and other health professionals deal with the special needs of adolescents.

If you are willing for your son or daughter to participate in this study will you please sign the attached consent form and send it back with them to school on the day of the survey. I would be more than happy to discuss any part of the research with you.

Sincerely,

Cheryl Lauber, R. N.
Graduate Student
Michigan State University
Family Clinical Nurse Specialist Program
Home Phone: (517) 723-1957

CONSENT FORM

PARENT/GUARDIAN:

I voluntarily consent to my son/daughter's participation in this research study of body image in adolescents conducted by Cheryl Lauber, R.N. as part of the requirements for the degree, Master of Science in Nursing, through Michigan State University. I understand the purpose and the format of the study. I understand that I or my son/daughter may decide not to participate at any time without any penalty. I also understand that all results of the survey will be kept strictly confidential and all participants will be anonymous. However the results will be made available to participants, within the confidential restriction, upon request.

Signature of Parent/Guardian Date

STUDENT:

I am willing to participate in this research study of body image in adolescents conducted by Cheryl Lauber, R.N. I understand that I may decide not to participate at any time without any penalty. I also understand that all results will be kept confidential and I will be anonymous. I may request the results, in the confidential format, after the research is completed.

Signature of Student Date

APPENDIX C

APPROVAL FROM THE UNIVERSITY COMMITTEE

ON RESEARCH INVOLVING HUMAN SUBJECTS

MICHIGAN STATE UNIVERSITY

UNIVERSITY COMMITTEE ON RESEARCH INVOLVING
HUMAN SUBJECTS (UCRIHS)
238 ADMINISTRATION BUILDING
(517) 355-2186

EAST LANSING • MICHIGAN • 48824

January 7, 1982

Ms. Cheryl Lauber
College of Nursing

Dear Ms. Lauber:

Subject: Proposal Entitled, "Perception of Body Image in Adolescents, Aged 14-16 Years"

The above referenced project was recently submitted for review to the UCRIHS.

We are pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and the Committee, therefore, approved this project at its meeting on January 4, 1982.

Projects involving the use of human subjects must be reviewed at least annually. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval prior to the anniversary date noted above.

Thank you for bringing this project to our attention. If we can be of any future help, please do not hesitate to let us know.

Sincerely,

Henry E. Bredeck
Chairman, UCRIHS

HEB/jms

cc: Dr. Given

APPENDIX D

SCALES AND RELIABILITIES FOR ENVIRONMENTAL FACTORS SCALE

APPENDIX D

SCALES AND RELIABILITIES FOR ENVIRONMENTAL FACTORS SCALE

Scales	Reliabilities
Parental Attitudes	.63
1. My parents are pleased with my appearance.	
4. My parents don't understand my concern about how I look.	
7. My parents would like to change something about my appearance.	
*10. My parents believe I am about the right height.	
13. My parents believe I am too heavy.	
16. My parents would like me to be healthier.	
19. My parents believe I have a strong body.	
Peer Attitudes	.57
2. My friends believe I am about the right height.	
5. My friends are pleased with my appearance.	
8. My friends believe I am too heavy.	
11. My friends would like me to change something about my appearance.	
14. My friends are stronger than I am.	
17. My friends are as concerned as I am about appearance.	
20. My friends would like me to be healthier.	
Sociocultural Attitudes	.61
3. Most teenagers weigh about the same as I do.	
* 6. Most teenagers are taller than I am.	
9. Most teenagers are more pleased with their appearance than I am.	
12. A change in my appearance would make me look more like other teenagers.	
15. Most teenagers my age are more grown up than I am.	
18. Most teenagers have a more perfect figure than I do.	
*21. Most teenagers are as healthy as I am.	

* Deleted items from reliability analysis.

APPENDIX E

FREQUENCY DISTRIBUTIONS AND PERCENTAGES OF MEAN BODY SATISFACTION SCORES FOR MALES AND FEMALES

Table E-1. Frequency Distributions and Percentages of Mean Body Satisfaction Scores for Males and Females (N=111).

Mean	Frequency	Percent	Mean	Frequency	Percent
2.20	1	.9	3.30	5	4.5
2.26	1	.9	3.32	1	.9
2.28	1	.9	3.34	2	1.8
2.42	2	1.8	3.36	2	1.8
2.54	2	1.8	3.38	2	1.8
2.64	1	.9	3.40	1	.9
2.72	2	1.8	3.42	1	.9
2.74	2	1.8	3.43	1	.9
2.76	1	.9	3.44	1	.9
2.84	1	.9	3.46	6	5.4
2.86	3	2.7	3.48	3	2.7
2.92	3	2.7	3.50	3	2.7
2.94	2	2.7	3.54	3	2.7
2.96	3	2.7	3.56	1	.9
2.98	3	2.7	3.58	2	1.8
3.00	2	1.8	3.60	2	1.8
3.02	1	.9	3.62	1	.9
3.04	1	.9	3.66	1	.9
3.05	1	.9	3.70	1	.9
3.06	4	3.6	3.72	1	.9
3.08	2	1.8	3.80	1	.9
3.10	1	.9	3.86	1	.9
3.12	1	.9	3.96	1	.9
3.14	2	1.8	4.14	1	.9
3.16	5	4.5	4.16	1	.9
3.18	5	4.5	4.18	1	.9
3.20	2	1.8	4.24	1	.9
3.22	2	1.8	4.40	1	.9
3.24	4	3.6	4.78	1	.9
3.28	1	.9			

APPENDIX F

POINT BISERIAL CORRELATIONS BETWEEN SEX AND EACH OF THE BODY PARTS AND FUNCTIONS ON THE BODY SATISFACTION SCALE

Table F-1. Point Biserial Correlations Between Sex and Each of the Body Parts and Functions on the Body Satisfaction Scale (N=111).

Items	Sex	Items	Sex
Hair	-.01	Shoulder Width	-.12
Complexion	-.06	Arms	-.03
Appetite	-.20*	Chest	-.03
Hands	-.17*	Eyes	.12
Body Hair	-.01	Digestion	-.03
Nose	-.04	Hips	-.25**
Fingers	-.03	Skin Texture	-.04
Elimination	.16*	Lips	-.01
Wrists	.19*	Legs	-.27**
Breathing	.08	Forehead	.13
Waist	-.01	Teeth	-.04
Energy	.03	Feet	-.22**
Back	-.05	Sleep	.05
Ears	.16*	Voice	.08
Chin	.09	Health	.07
Exercise	-.18*	Sex	-.03
Ankles	-.07	Knees	-.01
Neck	.01	Posture	.13
Shape of Head	-.03	Face	-.07
Body Build	-.17*	Weight	-.19*
Profile	-.11	Back of Head	.11
Height	.26**	Mouth	.01
Age	-.06	Abdomen	-.15
Buttocks	-.14	Sex Organs	-.15
Thighs	-.24**	Muscle Tone	-.22**

Note. Negative correlations indicate that males scored higher.
* p .05
** p .01

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