Childhood Asthma:

Development of the Body Perception Scale

By

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ABSTRACT

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Asthma is the most common chronic respiratory illness in children with both psychosocial and physiological implications. The purpose of this project was to develop and pretest an instrument to measure body image and body esteem in school-aged children with asthma. A convenience sample of nine healthy school-aged children and four asthmatic school-aged children completed the instrument. Results of chi-square analysis indicated there were no differences in body image and body esteem between the healthy children and the children with asthma. A severity of illness index will need to include results of pulmonary function tests and functional status. The scale will need to be administered to children who are severely ill with asthma. Reliability of the instrument will need to be established by the coefficient alpha. This information will aide in the understanding of the asthmatic child's body image and body esteem.

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CHAPTER I

The Problem

Introduction

Chronic illness in children is a major health problem. Approximately ten to 15% of children are affected by chronic illness or handicapping condition (Gortmacher & Sapenfield, 1984). Chronic illness impacts the child's social, emotional and intellectual development (Lau, Williams, Williams, Ware & Brook, 1982). Underachievement and dependency behavior occur more frequently in adolescents with chronic illnesses (Orr, 1984). Increased absence from school and poor psychological adjustment is also associated with chronically ill children (Stein & Jessop, 1984).

Chronic illness in children affects family functioning. The chronically ill child may not be able to engage in normal activities and may feel different from other children. These feelings may produce withdrawal or aggressive behavior depending on the child's personality. The parents' reactions to the child directly affects the child's activities and the stigma he feels from being chronically ill (Pless & Pinkerton, 1975).

At an early age children become aware of their physical characteristics. Parents, siblings and peers provide the child with opinions on his bodily appearance and abilities. These opinions coupled with his own body awareness, produce a sense of identity and body image. The body image is unique to the child and is a result of self-appraisal and interactions with others. Because body image is associated with

others' reactions to appearance, body image is fundamental to the development of self-concept (van der Velde, 1985).

A child's self-concept may be challenged when he has a chronic illness. When control of a body part is compromised the child's self-concept may be altered. Therefore, it is important to understand how chronic illness impacts body image. The purpose of this project is to develop and pretest an instrument to measure body image in school-aged children with asthma.

Although having a childhood chronic illness does not necessarily mean that a child will be psychologically troubled, there are aspects of managing a chronic illness and participating in school and school-related activities that are threatening to the self-esteem of children with chronic illnesses. Taking medication, being unable to participate in sports and looking different can set a child apart from peers and lead to isolation. Teachers, too, may react uncomfortably to the chronically ill child and can influence the teacher's expectations of what that child can achieve (Hobbs, Perrin & Ireys, 1985). Consequently, the child's sense of achievement may be undermined (Walker & Jacobs, 1975).

Asthma is the most common chronic respiratory illness in children (DeAngelis, 1984). A reversible obstructive respiratory disease, asthma occurs in 38 to 1,000 children (Mott, Fazekas & James, 1985). Asthma accounts for about half of the hospitalizations for reactive airway diseases in children under 15 years of age and accounts for about 40% of all office visits in primary care (Cropp, 1985). These statistics indicate that asthma remains a major and costly health care problem in the pediatric age group.

Asthma has both psychosocial and physiological implications. Asthma is the most frequent cause of lost school days due to health (Parcel, 1979). Because asthma accounts for a large degree of illness related school absenteeism, affected children may fall behind. Therefore, asthma affects a child's school achievement, relationship with peers and ability to perform physical activities (Bender, Belleau, Fukuhara, Mrazek & Strunk, 1987; Voorhorst-Smeek, 1977). Indeed, the most challenging aspects of asthma is its unpredictability.

The therapeutic goal of asthma treatment is to maintain normal lung function, thereby optimizing childhood activities and decreasing recurrences and exacerbations of asthmatic attacks. Prevention of asthmatic attacks is the primary goal of therapy. Treatment of asthmatic attacks can be managed with knowledgeable and skillful health care.

Treatment of asthma includes bronchodilators, beta-agonists, cromelyn sodium and corticosteroids. Theophylline is a frequently prescribed bronchodilator used in the treatment of childhood asthma. However, children may start bedwetting when starting theophylline therapy (Cropp, 1985). Poor attention span, restlessness and poor writing skills are also noted by parents and teachers of children who are on theophylline (Cropp, 1985).

Teachers and parents who do not understand the side effects of theophylline may misinterpret the child's behavior as laziness or resistance (Hobbs et al., 1985). Parents' and teachers' approach to the child may suggest disapproval with him and potentiate already present feelings of the child of being out of control. The child, too, may perceive himself as different and inferior to other children. The onset

of bedwetting may further exasperate the child and contribute to feeling out of control of his body.

In summary, asthma affects a child's emotional, social and intellectual functioning. Early research on childhood asthma indicated that children with asthma had a decline in self-worth, a feeling of inferiority, and frustration (Voorhorst-Smeek, 1977). A more recent study found that mothers of asthmatic children indicated that asthmatic children were preoccupied with their bodies (Creer, Marion & Creer, 1983). Because of the medical regimen and the unpredictability of the asthmatic attack, it is important to determine if school-aged children with asthma and health school-aged children differ in their body image and body esteem.

Purpose

The purpose of this research study is to design and pretest an instrument to measure body image and body esteem in school-aged children with asthma, seven to ten years of age. Controlled comparisons of chronically ill children and health children have provided inconsistent results (Norrish, Tooley & Godfrey, 1977; Voorhorst-Smeek, 1977). There is scant documentation regarding body image in school-aged children. Therefore, this study is designed to develop an instrument that will explore whether there is a difference in body image in chronically ill children with asthma and health school-aged children.

In order to provide quality care to chronically ill children, the clinical nurse specialist needs to assess psychosocial functioning of children with asthma. Body image is an area of psychosocial functioning that needs to be assessed. Furthermore, nurses are concerned with the

child's response to his illness. A response to a chronic illness may be an altered body image. Knowledge of how the chronically ill child differs in his body image will facilitate the nurse in the assessment of body image and in planning the child's care.

Development of Body Image

There is general agreement by researchers regarding certain concepts which affect the development of body image. Experience impacts body image development and is one of the reasons why each individual's mental picture of himself and his feelings, attitudes and evaluation of his or her body is different. Schidler (1951) suggests that the development of body image arises from a combination of inner psychic forces and experiential factors. Blaesing and Brockhaus (1972) maintain that the mental picture of the body is unique because it is derived from individual sensorimotor and affective experiences. Each of these concepts impact the developing child to varying degrees.

The Infant

Infancy is the earliest stage of psychosocial development and extends through the first year of life (Erikson, 1963). At birth the child's body image is limited to his sensorimotor experiences. He has the same attitude toward parts of his body as he has toward strange objects in the environment (Blaesing & Brockhaus, 1972). During infancy, bodily contact with the mother and other significant persons begins the process of incorporation of social factors into body image. Schidler (1951) and Blaesing and Brockhaus (1972) both refer to the oral zone in infants as the "nucleus of the body image," the central model through which the infant discovers his or her body.

Around the age of four months, the infant begins to grasp and explore his or her own body with the same attitude as exploring a strange object. By grasping at his toes and his hands, he enlarges his sense of self and image of his body. As the child becomes increasingly mobile, he experiences new tactile sensations and develops an awareness of relationships of various object parts. The infant comes to know his body through tactile and kinesthetic sensations, visual perceptions and self-generated actions (Riddle, 1972).

As the infant approaches his first birthday he becomes aware of the separateness of his body from his mothers' body and others. The infant's developing sense of self takes place in the context of his dependence on the mother and the self that merges bears the "imprint" of her caregiving (Mahler & McDevitt, 1982). In their studies of infant's developing sense of self, Mahler and McDevitt (1982) found that at three months the infant recognized the human face. At four to five months the infant demonstrated recognition memory of the mother along with an increased interest in his own body parts. From five to six months the infant paid attention to the movement of his fingers, hands, and arms reflected in a mirror.

During the period from ten to 15 months, the infant explores the animate and inanimate world using all of his senses and thus learns more about himself. Encounters with the inanimate objects in the environment help the child to develop body-self boundaries.

The Toddler

The toddler stage ranges from one to three. As the child expands his environment his body image is modified. Parental figures assume

importance to the child during this period. The attitudes of the parent make an impression on the child's concept of himself. The child's feelings toward his own body reflect the values ascribed by his parents. Children who feel accepted by their parents have more positive feelings about themselves and their bodies. However, when the child feels that his body does not measure up to the expectations of significant others, the toddler can experience shame (Erikson, 1963).

The toddler struggles for a sense of autonomy. Some of the major tasks of this stage include development of motor skills, language skills, and toilet training. During this stage in which mastery of the environment and mastery of body are the central tasks the child learns how to manipulate the environment and how to control his body. If mastery of self and environment is not attained, the child experiences helplessness, shame and doubt.

The Preschooler

The preschool stage of development is from three to six years of age (Erikson, 1963). It is during this period that the child develops either a sense of initiative or guilt. During the preschool years, the child's psychomotor skills are more adept and he has a better sense of balance. The child becomes interested in his body surfaces, especially the genital area (Blaesing & Brockhaus, 1972). His body image is clearer to him and is more at a conscious level. Sex typing and sex role identification is the major task of this stage (Blaesing & Brockhaus, 1972).

The School-Aged Years

During the school-aged years, seven to 11, the child's development is a complex process. According to Erikson (1963), at this stage of

development, a child develops either a sense of industry or a sense of inferiority. Children have tremendous energy to prove their competencies to themselves and to the peer group.

During the years between seven and 11, the child's world is characterized by interaction with peer groups. The peer group promotes conformity to group activities. Involvement in sports, dance, and scouts promotes involvement with the peer group. Children seek opportunities to demonstrate their newly developed skills hoping to win peer approval. The social processes of imitation and identification influence the development of body image. Schidler (1951) suggests that physical and emotional characteristics are incorporated into one's body image through imitating and identifying with others.

Mastery of both gross motor skills and academic skills are important aspects of growth and development during the years of seven to ten. These years are a time of learning and gaining a sense of confidence and competence in athletic and scholastic activities. Competition among children is keen as each child attempts to excel in strength, speed and endurance. Any condition that interferes with the child's desire to gain mastery over himself threatens the psychologic well-being of the child. The competency literature indicates that children who perceive themselves as physically competent have more self-esteem than children who do not perceive themselves as physically competent (Feltz & Brown, 1984).

Although each child develops physiologically at his own pace, generally children begin to assume adult proportions during the school-aged years. Girls begin their growth spurt during this period; boys

start their spurt at around 13 to 14 years of age. With the maturation of the central nervous system, the child demonstrates refined gross and fine motor skills. Female sexual development begins between ten and 12 years of age.

In summary, the school-aged years are characterized with many developmental milestones. During these years children confront challenges, learn new skills and adapt to new environments. Bodily features such as size, weight, strength and coordination are either assets or liabilities in social and athletic activities. The child learns that his physical appearance and characteristics provide him with a sense of identity. The child who has an actual or imagined physical limitation can potentially develop a poor body image.

Adolescence

During adolescence, children experience two major changes that affect self-image; puberty and cognitive development. During puberty the child's body is transformed into that of an adult in terms of size, secondary sex characteristics and reproductive capacity. Any of these changes is likely to affect the adolescent's self-image, his body image and the way in which others view him or her. Early maturing girls have poorer body images than girls on time and late maturing girls (Petersen & Crockett, 1985; Zakin, Blyth & Simmons, 1984). The opposite is true for boys. Early maturing boys have a more positive body image than late maturing boys (Duke, Carlsmith, Jennings, Martin, Dornsbusch, Gross & Siegel-Gorelick, 1982). Adolescents are concerned about their body parts and maturing characteristics resulting in self-consciousness, psychologically and physically (van der Velde, 1985). The adolescent is

concerned about how others perceive him and his body. The literature on physical attractiveness suggests that the reason that early maturing girls have poorer body images is the adolescent girl's desire to be thin and conform to society's ideal of being thin. The media image of being thin favors the late maturing girl who has not yet experienced increased body fat that occurs during puberty.

Secondly, the adolescent experiences a change in cognitive capacity. during adolescence the child develops the capacity for abstract thinking. This enables the adolescent to think about himself and who he wants to become. Changes in cognitive functioning in adolescence may make adolescents more self-conscious (Simmons, Rosenberg & Rosenberg, 1973) as they think about themselves and others in new ways. In addition, the cognitive changes and physical changes are occurring at a time when adolescents are feeling the need to conform to their peers.

Chronic Illness in Children

Available research is inconclusive concerning incidence of impaired psychosocial functioning in children with chronic illnesses. Drotar (1981) found that the chronically ill child is at greater risk of psychological maladjustment than the healthy child. In an early study comparing asthmatic children, children with cardiac disorders and healthy children, Neuhaus (1958) discovered that asthmatic children were characterized as anxious, insecure and dependent. McNichol, Williams, Allan and McAndrew (1973) found that only the more severely asthmatic children differed in behavioral disturbances from healthy children. Ham, Easton, Himburg and Greenberg (1983) reported a high degree of dissatisfaction with body image in children with psychiatric

disturbances. Recently, Adams and Weaver (1986) reported that children with chronic disease scored higher on a self-concept scale than those without a chronic illness. These studies, however, have a variety of methodological problems such as small numbers, subjective clinical observations and psychological assessments of questionable reliability and validity.

The knowledge of body image is important to understanding the psychosocial impact of asthma. Asthma may affect the child's physical strength and asthmatic attacks may contribute to the child feeling out of control and different from other children. Therefore, additional research is needed to explore body image in asthmatic children. Because the school-aged years are characterized by a greater influence of the peer group and self-exploration, children seven to ten years will be studied.

According to Hobbs (1985), tertiary prevention is the avoidance of unnecessary consequences of the disease. Tertiary prevention includes measures that can be taken to prevent the illness from interfering with the physiological, educational or psychological functioning of the child. The goal of tertiary prevention, therefore, is to improve school participation and to maintain the psychological integrity of the child and the family. The role of the clinical nurse specialist is to assist the child to maintain his maximum level of functioning by educating, counseling, assessing and treating the child and the family.

Research Question

The research question to be investigated in the proposed study is:

> What is the relationship between body image and body esteem in school-aged children with asthma?

In a subsequent study, the following research question will be addressed:

> Is there a difference between body image and body esteem in school-aged children with asthma and health school-aged children?

Definition of Variables

Asthma

Although there is no universally accepted definition of asthma, most clinicians agreed that asthma is a chronic disease consisting of bronchial hyperactivity and episodic or variable air flow limitation. Asthma is characterized by symptoms of wheezing, cough, sputum production and shortness of breath. The American Thoracic Society (1962) supports this definition:

> Asthma is a disease characterized by increased responsiveness of the trachea and bronchi to various stimuli. Asthma is manifested by a wide spread narrowing of the airways that changes in severity either spontaneously or as a result of therapy.

The term "asthma" is not appropriate for bronchial narrowing which results solely from wide spread bronchial infection or from destructive disease of the lung.

Criteria for inclusion of asthmatic children will be the following: boys and girls will be at least seven but not yet 11 years of age; free of other physically handicapping conditions; free of chronic illness other than asthma; no history of psychiatric or psychological treatment.

Body Image

Body image is a personal and subjective concept that is acquired or learned during the process of an individual's growth and development (King, 1981). Body image is a dynamic concept that reflects an individual's changes regarding his experiences and perceptions of those experiences. Norris (1984) suggests that body image includes "kinaesthetic, proprioceptive, visceroceptive and tactile input" (p. 840). Body image is a part of each stage of growth and development and is subject to the impact of sociocultural factors which may influence how an individual perceives his body. As an individual passes from one age group to another, he reassesses his identity and his body image may change.

Schidler (1951) has defined body image as the picture an individual forms in his mind of his body. It is unique to the child and is a result of his sensorimotor and affective experiences (Blaesing & Brockhaus, 1972). Because the child is constantly learning and meeting new challenges the body image is fluid. King (1981) defines body image as a "person's perceptions of his own body, others' reactions to his appearance and is a result of others' reactions to self" (p. 33). For this project, body image is defined as an individual's picture of his own body.

Body Esteem

Body esteem is defined as an individual's feelings, attitudes and evaluations about the body (Mendelson & White, 1985). It is the physical counterpart to self-esteem. Whereas body image is the picture an individual has of his body, body esteem is the feelings or attitudes an individual has concerning the picture he has of his body. In a study of obese children, body esteem and self-esteem are correlated for children over a wide range of weight (Mendelson & White, 1982). For this project, body esteem is defined as an individual's feelings, attitudes and evaluations about his body.

Healthy

There is no universally agreed upon definition of health. King (1981) defines health as "dynamic life experiences...which implies continuous adjustment to stresses in the internal-external environment through the optimum use of resources to achieve maximum potential for daily living" (p. 5). The American Nurses' Association Policy Statement (1981) also defines health as a "dynamic" state in which the individual strives to attain this maximum potential. For this study, health is defined as a dynamic, fluid state in which the child's developmental potential is realized.

Criteria for inclusion of healthy children will be the following: children will be at least seven but not yet 11 years of age; free of physically handicapping or stated chronic illness; no history of psychiatric or psychological treatment.

Assumptions

The following assumptions are made in this project:

1. Asthma is a chronic illness requiring ongoing treatment.
2. The concept of body image as defined in this study is a real and measurable phenomenon.
3. The concept of body esteem as defined in this study is a real and measurable phenomenon.
4. That participants will answer questions related to body esteem honestly and that body esteem has meaning to the study participants.
5. That body image is an integrated component of self-esteem. Body image is a concept that can be measured.
6. That body esteem is an integrated component of self-esteem. Body esteem is a concept that can be measured.
7. Although data are collected at only one point in time, the perceptions studied are stable.

Limitations of the Study

The following limitations are acknowledged:

1. This study is limited to children who are seven to ten years old.
2. This study is limited to chronically ill children with asthma.
3. This study is limited to volunteer asthmatic children who may not represent all levels of severity in asthma. Therefore, the results of this study will be not be considered to be representative of all children with asthma.
4. This study is limited to body image and body esteem.
5. The need to express a socially desirable response may effect the responses of the participants.

6. Data from the pretest cannot be assumed to be normally distributed due to the small sample size.
7. Reliability and validity of the instrument has not been previously established; therefore, a larger sample size will be required to establish reliability and validity.
8. Although this study is limited to chronically ill children with asthma, differing levels of severity of illness may impact body image and body esteem differently. Children whose asthma is mild may not demonstrate a difference in body image and body esteem from health children.
9. A limitation of this study is that it measures body image and body esteem in school-aged children with asthma and there are no comparisons of body image and body esteem of these children before they developed asthma.

Overview

In the following chapter, Imogene King's nursing theory will provide the basis for the conceptual framework. The review of literature in Chapter III will cover past approaches to the study of psychosocial dimensions of childhood asthma and will include the concept of body image and body esteem. Instrumentation, research design and methodology will be described in Chapter IV. The results of the pretest will be discussed in Chapter V. Nursing implications of this project will be presented in Chapter VI.

CHAPTER II

Conceptual Framework

Overview

The purpose of this project is to design and pretest an instrument to explore the relationship between selected variables of body image and body esteem in school-aged children with asthma. In this chapter, Imogene King's theory of nursing will be discussed as the conceptual framework.

Overview of King's Theory

The conceptual framework for this study is based on King's theory of nursing. King's theory of nursing is especially useful for the study of children because King includes concepts of growth and development and body image in her theory. King's theory of goal attainment states that the nurse-client relationship results in achievement of mutually agreed upon goals. Nurses and clients share information, perceptions, knowledge past experiences and agree upon goals to achieve. This process is an active, dynamic growth producing process involving both the nurse and the client. She suggests that effectiveness of care can be evaluated by whether or not goals for health promotion, health maintenance or recovery from illness have been attained. King (1981) identifies three levels in her conceptual framework: personal systems (individuals); interpersonal systems (groups); and social systems (society). She proposes that an individual's health is influenced by interpersonal relationships.

Nursing, therefore, is "a process of human interactions between the

nurse and the client" (King, 1981, p. 44). Both the client and the nurse bring individual perceptions of the situation to the relationship. The nurse and client communicate their perceptions, set mutual goals and develop strategies to achieve those goals.

King (1981) defines healthy as "dynamic life experiences implying continuous adjustment to environmental stressors" (p. 5). Through the optimum use of his resources the individual can achieve his maximum potential for daily living. To contrast, illness is defined as a deviation from normal in physiological or psychological functioning.

In the process of interacting with the asthmatic child, the nurse and the client share information about the client's perception of himself, feelings and attitudes about his body, and fears associated with asthma. Together, they identify goals which assist the client to achieve his maximum potential.

Components of King's Theory

King views relationships of individuals as occurring on three levels, the personal system, the interpersonal system and the social system (Figure 1). All three levels will be examined with emphasis on how the levels relate to the child with asthma.

The Personal System

The personal system consists of the individual's unique perceptions of himself, body image, growth and development and time and space (King, 1981). An individual's perceptions of himself, his body image and time and space influence the way he responds to his environment. Because body image involves an individual's perceptions of his body and others' reactions to this appearance, body image is central to the personal

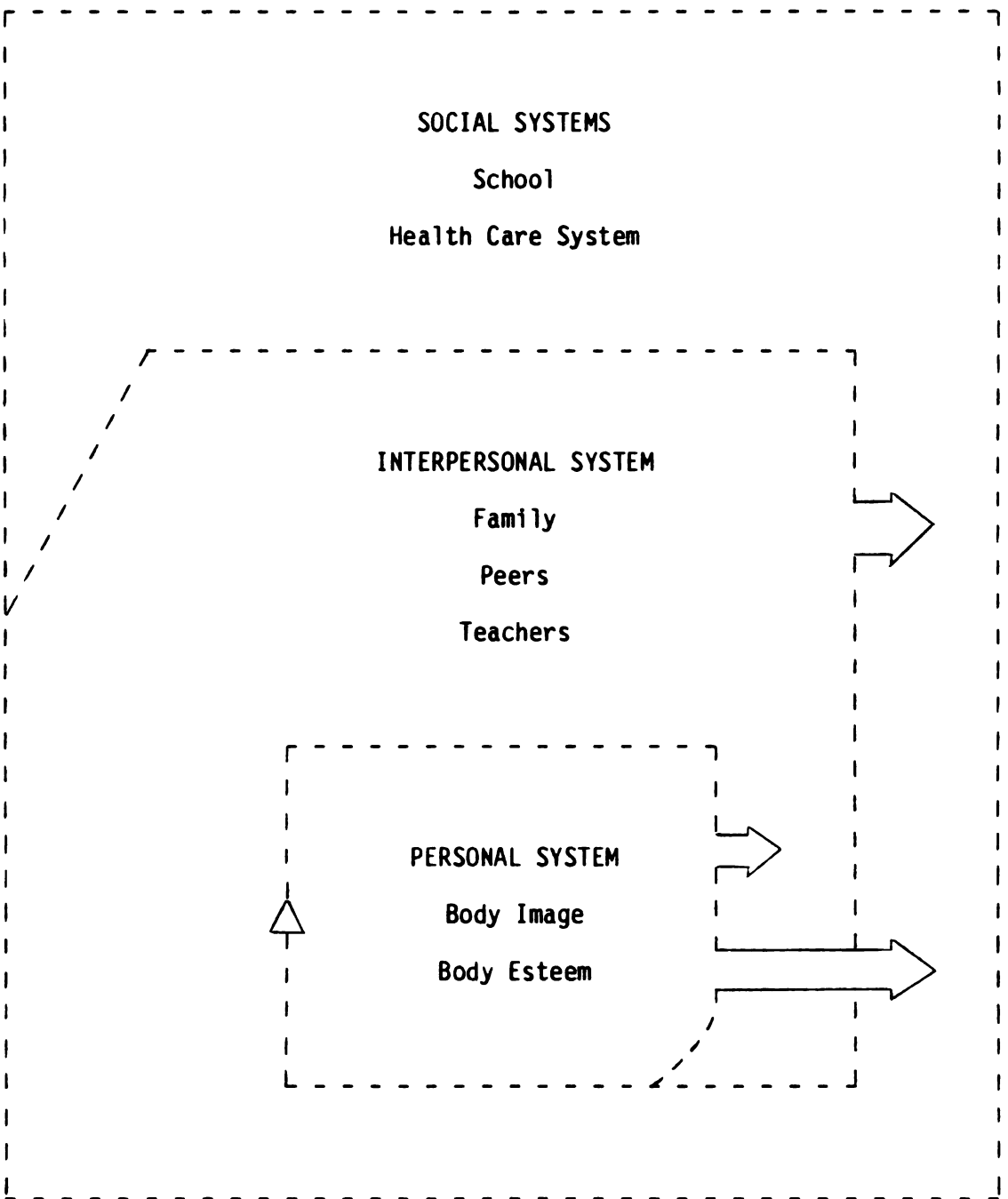

Figure 1. King's Theory Adapted to Body Image and Body Esteem in School-Aged Children with Asthma

system. Although King does not define body esteem in her theory, body esteem is related to the concept of body image and is part of the personal system. The asthmatic child develops a body image which influences his interactions with family, peers and teachers.

The Interpersonal System

The interpersonal system consists of interactions with others. Interactions occur between two or more persons and are a sequence of verbal and nonverbal behaviors which are goal directed (King, 1981). Each individual brings to the interaction knowledge, needs, goals, expectations, perceptions and past experience. Both individuals mutually identify goals and the means to achieve those goals. For the child with asthma, the interpersonal system consists of family, peer group and teachers.

Dependency in asthmatic children has been repeatedly reported (Khampilinit, 1983; Voorhorst-Smeek, 1977). Mothers of asthmatic children have been reported to be over-protective (Meijer, 1978; Voorhorst-Smeek, 1977). Consequently, the nurse needs to assess and evaluate communication between the mother and child. The nurse can help the mother verbalize her fears. The nurse can help the mother become skillful in assisting the child during an asthmatic attack. The nurse can facilitate, identify the reward independent behaviors in the child.

Nursing is the process of interactions between the nurse and the client (King, 1981). In order to achieve goals which maximize the potential of the client, the nurse needs to understand the client's personal system. The child's perceptions of himself and his body will influence the goals the child and the nurse identify and the methods to

achieve those goals. The personal system then directly influences the interpersonal system.

Social Systems

King (1981) defines social system as an organized boundary system of social roles, behaviors and practices developed to maintain values and mechanisms to regulate practices and rules. Social systems provide a framework for social interaction, define social relationships and establish rules of behavior. Family systems, religious systems, work systems and educational systems are those social systems that the nurse usually encounters.

The individual's personal system influences his goals and the methods to achieve those goals. The interpersonal system is based on the interactions in which mutually defined goals and the methods to achieve goals are established. Interpersonal system form social systems. Mutually defined goals eventually establish a framework for interaction and establish rules of behavior. The social system then becomes an organized system of social roles, behaviors, and practices that regulate social organization.

For the asthmatic child the social system consists of the health care system and the academic system. The nurse is usually the child's first contact with the health care system assuring that comprehensive and coordinated care is provided. Within the health care system nurses share knowledge with the child and his family to promote health. The nurse teaches the client which symptoms need to be further evaluated by health care providers. Together, the nurse and the client define the social

relationship; however, usually the nurse assumes greater responsibility in assuring that the relationship is professional in nature.

The health care system, in turn, needs to be sensitive to the changing growth and development needs of the asthmatic child. Care needs to be individualized and tailored taking into account the child's developmental stage.

King's model delineates the interactions between the nurse and the client as consisting of perceptions, judgments, actions, interactions and transactions (Figure 2). This model describes the nature of the nurse-client relationship leading to achievement of goals. King (1981) suggests that nurses purposefully interact with clients to establish goals and to explore and agree on strategies to achieve those goals. Purposeful interaction implies that the nurse take the initiative in directing goals and that the nurse continuously explore new goals with the client.

Perception

Perception is a process of organizing, interpreting and transforming information (King, 1981). Perception is each person's representation of reality and, therefore, gives meaning to experience and influences behavior (King, 1981, p. 146).

Each child with asthma perceives his illness differently (Voorhorst-Smeek, 1977). Some children deny their illness, other may overestimate the severity of their illness. Likewise, some children see their physical capabilities, such as strength, as being affected by asthma. The nurse who perceives a child's asthma as mild and not interfering

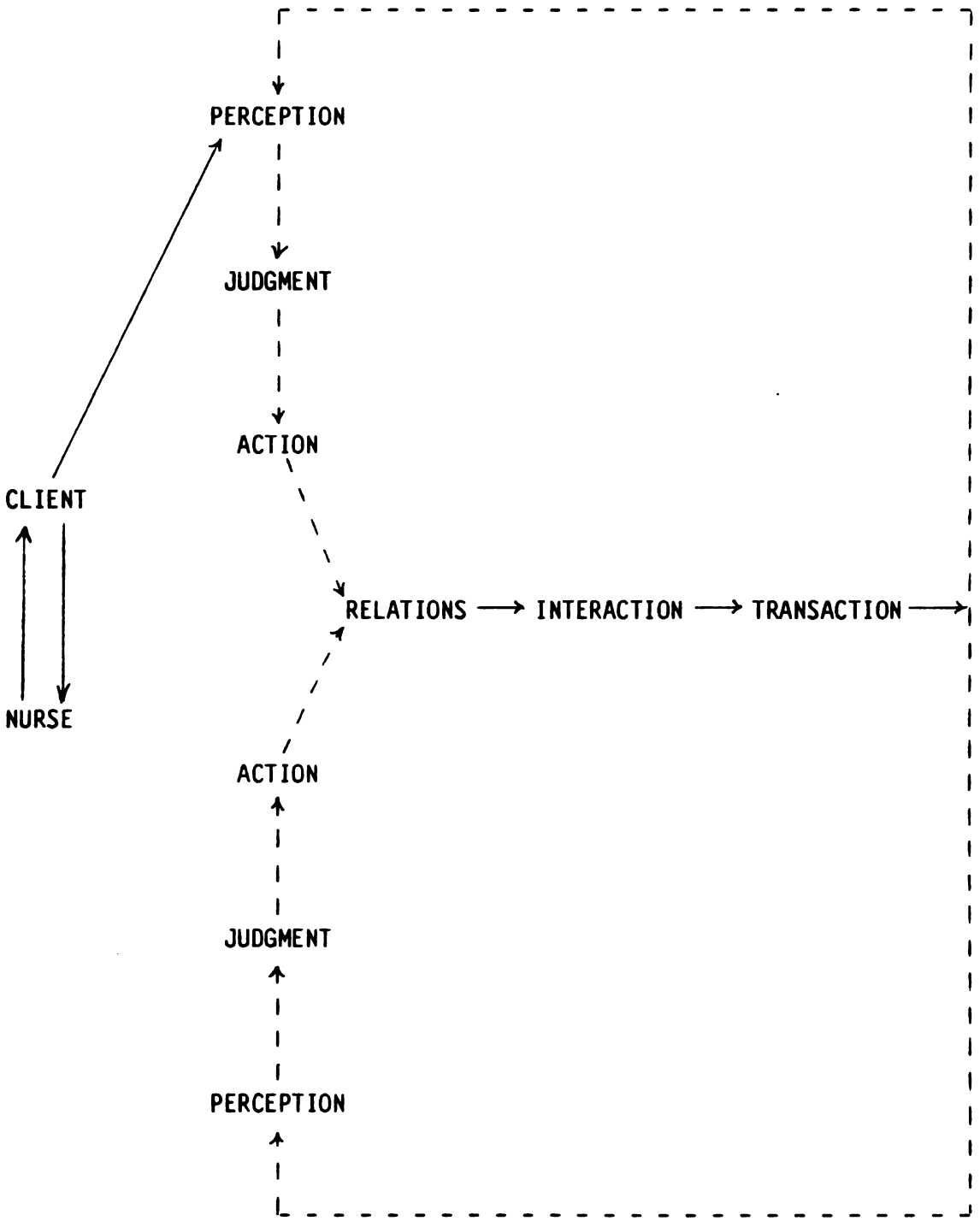

Figure 2. King's Model of Goal Attainment

with his life-style will have difficulty setting mutual goals with the child who views himself as being severely ill with asthma.

Judgment

According to King's model, judgment is a product of perception. Although King does not expressly define judgment in her theory, judgment can be inferred to be defined as the outcome of the nurse's and the client's perception of the situation. The client and the nurse weigh all of their perceptions and arrive at a judgment.

Interactions

Interactions consist of perception and communication of perceptions between the nurse and client (King, 1981). Interactions are mutual, interdependent and consist of both verbal and nonverbal behavior that is directed toward the achievement of a goal. Both the nurse and the client bring to the interaction knowledge, perceptions, experiences, needs, and expectations that influence the interaction.

Through assessment and mutual goal setting the nurse helps the child with asthma identify his needs. Each equips a self with needs, goals and expectation to the nursing situation. Both grow and mature.

Purposeful interactions require openness in the exchange of information and mutual agreement about the strategies to achieve identifiable goals. Nurses need to provide an environment that is conducive to the exchange of feelings. Furthermore, the child with asthma must be open about his feelings about his body. The nurse helps the child learn about his medication, prevention of attacks, warning signs and interventions to minimize an attack. Providing information and facilitating open communication are the major aspects of interactions.

Transactions

Transactions are defined as a series of interactions in which individuals communicate with the environment to achieve goals that are valued (King, 1981). Communication and perception are the basis for transactions. Transactions are valued by individuals because the goal is meaningful and valued by the individuals. For the asthmatic child the nurse and client might exchange the following valued things: increased independence, self-management, knowledge and optimum health. The same valued things are exchanged in interactions with the healthy child.

Relationship of King's Model to Body Image and Body Esteem

King's theory supports the systematic investigation of the psychosocial dimensions of asthma in children. Her theory of goal attainment can be usefully applied to children. King identifies body image as an "integral component" of growth and development which in turn influences the self-concept (1981). Both body image and growth and development are central concepts to understanding child development. Furthermore, King's theory of goal attainment can be usefully applied to the child with asthma to assist the child's development of skills and knowledge.

King's (1981) conceptualization of body image is central to the study of asthmatic children. Murray (1976) reported that asthma causes a delay in physical growth. Subsequently, asthma has been observed to affect a child's ability to perform physical activities (Voorhorst-Smeek, 1977). Self-concept is tied to body image. Feelings about the body are commensurate with feelings about the self. Visual or perceptual changes in the body may be assumed to impact the way a child views both his

physical and personal self. Visual or perceptual changes in the body may impact the way a child feels about his body, his body esteem.

King (1982) suggests that body image is a personal and subjective concept. Individuals behave in terms of their perceptions of self, others and situations. As experiences and perceptions change, body image changes. Consequently, the individual's feelings and attitudes about this body also change. King suggests that individuals identify themselves in relation to their body appearance and other reactions to them.

King's Model Modified to the School-Aged Child with Asthma

King's model can be adapted to body image and body esteem in school-aged children with asthma (Figure 3). The child formulates a picture of his body that is unique and a result of his sensorimotor experiences and affective experiences (Blaesing & Brockhaus, 1972). Consequently, his body image is fluid and changes over time.

In addition, the child forms a judgment based on his body image. The judgment is an evaluation consisting of feelings and attitudes of his body and is his body esteem. The child's body esteem is an evaluation on how his body is altered by asthma. Consequently, the child's actions are based on his body image and body esteem.

The nurse, too, develops perceptions of the child's body. She measures the child's height and weight and notes the child's physical characteristics. She assesses the child's physical and mental status. Based on her assessment and perceptions she formulates a judgment about

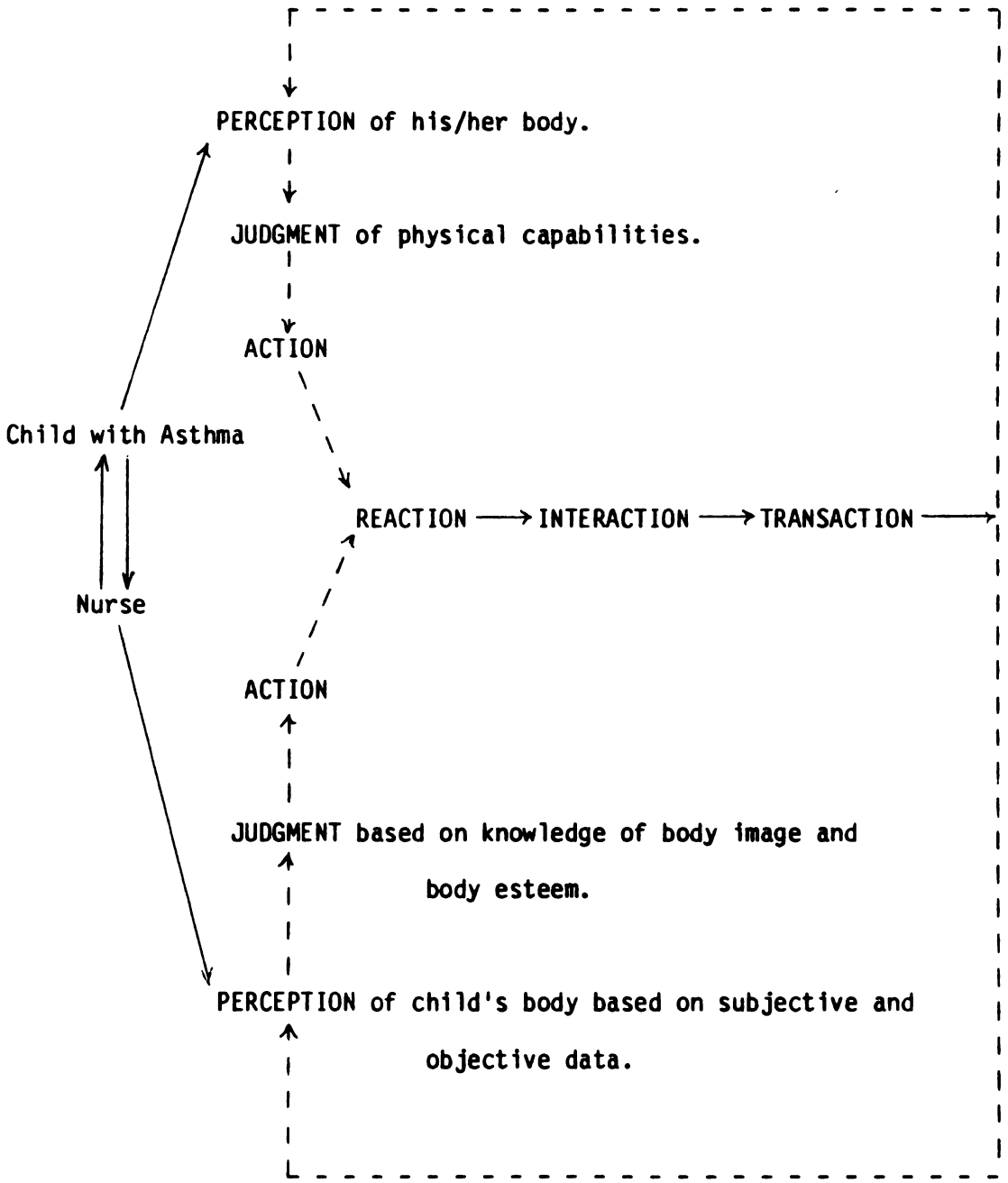

Figure 3. King's Theory of Goal Attainment Adapted to Children with Asthma

how asthma has impacted the child's body image. Utilizing nursing theory, subjective and objective data, and knowledge of asthma, the nurse formulates a plan to assist the child in developing a realistic body image and facilitating the child's development of good feelings about his body so that the child can achieve those goals that are important to him.

The nurse and the child communicate their perceptions and their judgments. They communicate possible goals that could be achieved. The nurse and the child may disagree about the goals or the strategies to achieve those goals or they may prioritize the goals differently. The child's goals or the nurse's goals may be unrealistic. The nurse may want to teach the child about his medication; the child may not want to learn about the medication. Therefore, both the nurse and the child may negotiate and compromise until they mutually decide on a goal.

Interventions Based on King's Model for Healthy and Asthmatic Children

In terms of the personal system, body image must be assessed continuously. The well child and the chronically ill child must be encouraged to verbalize how he perceives himself and how he feels his peers, siblings and parents perceive him. At the initial contact the nurse must obtain baseline data concerning the child's feelings about his body. At subsequent visits the nurse must assess any variations in the child's feelings about his body.

In terms of interpersonal systems, the nurse needs to assess the client's family relationships. The mother needs to be assessed regarding her feelings about asthma and the attacks. By encouraging openness and sharing of feelings and perceptions the nurse is facilitating

interactions and attainment of mutually identified goals. Perceptions will need to be clear so that transactions will aid in attainment of goals.

In terms of goals, the nurse needs to determine the child's goals for himself. She also needs to examine her own goals for the child. Together they need to communicate their perceptions of the child, the situation and negotiate mutually satisfactory goals.

King conceptualizes the practice of nursing as an active, helping process (1981). By being empathetic and utilizing active listening skills the nurse is able to accurately assess the patient's body image and body esteem. It is the nurse's responsibility to maintain an open communication system with the asthmatic child. Together the nurse and client can relate their perceptions of body image. While occasionally they may share the same perceptions they may not always. When they do not share the same goals communication involves negotiation, bargaining and contracting with the client so that mutual goals are identified and the child and nurse are committed to their attainment.

This research proposal is an attempt to compare the body image and body esteem of children with asthma to healthy children during the school age years. Research indicates that children with asthma have a variety of psychosocial adjustments. By determining the extent to which body image and body esteem is impacted nurses can assist children in adjusting to asthma.

Finally, research needs to be conducted on children of all ages to determine differences in body image and body esteem at each developmental period. Methods measuring body image and body esteem need to be

established for reliability and validity. Assessment tools to be used clinically to measure body image and body esteem need to be developed.

Conclusion

In Chapter II, the conceptual model for body image and body esteem in school-aged children with asthma was presented. Imogene King's theory of nursing was discussed as the theory related to body image in school-aged children with asthma. In Chapter III, the review of body image literature and research on asthma in school-aged children will be presented.

CHAPTER III

Review of Literature

Overview

The review of literature will be divided into two sections: literature reviewing asthma in children and literature reviewing body image and body esteem in healthy children and children who are ill.

Asthma in Children

Asthma is a common childhood disease responsible for a large number of hospital admissions and outpatient visits. The overall prevalence rate of asthma and chronic bronchitis in children under 17 years is approximately 9% in the United States (Dodge & Burrows, 1980). Data from the National Hospital Discharge Survey indicate that the rate of hospitalizations for childhood asthma increased more than 100% from 1970 to 1978 and by 45% from 1979 to 1984 (Halfon & Newacheck, 1986).

Asthma prevalence has been reported to be higher in boys than girls with male/female ratios nearly two to one. Differing prevalence rates in boys and girls has been attributed to differing patterns of lung growth, differences in environmental exposure or biases in disease reporting or detection (O'Connor, Weiss & Speizer, 1986).

The prevalence of asthma varies with age. Prevalence is high in childhood, declines in adolescence and young adulthood, and then rises during middle age (O'Connor et al., 1986). Childhood onset of asthma usually occurs within the first few years of age with 30% of children having the onset before two years of age and 80% develop symptoms before age five (Siegel & Rachelefsky, 1985).

There are several anatomical and physiological factors which create an increased risk for developing asthma in infants and children. First, children have disproportionately smaller airways than adults (O'Connor et al., 1986). Another factor believed to put children at an increased risk is the more rigid and lack of elastic recoil in the infant which predisposes the child to early airway closure. Finally, children have an increased percentage of mucous glands in the walls of the bronchi which contribute to increased quantities of mucous secretions.

Leukotrienes have been proposed to be mediators of acute asthmatic attacks (Schwartzberg, Shelov & van Pragg, 1986). Leukotrienes are bronchoconstrictors. Leukotrienes inhibit mucociliary clearance, increased blood flow and permeability, and attract and activate leukocytes (Bisgaard, 1984). Research on blood leukotriene levels during acute asthmatic attacks indicate that decreased levels of leukotrienes accompany improved clinical condition of children (Schwartzberg et al., 1986).

Several childhood illnesses predispose to the development of childhood asthma. Children with croup, cystic fibrosis and bronchopulmonary dysplasia are predisposed to developing asthma. Five to 50% of infants who have bronchiolitis during the first months of life develop asthma (Wohl, 1978). Children with recurrent croup have increased upper and lower airway reactivity indicating that they are at risk for developing asthma (Zach, Schnall & Landau, 1980).

There are several factors that can trigger asthma. Viral infections, allergies, exercise, environmental factors and sinusitis can precipitate an episode of wheezing. The viral infections that have been

implicated include respiratory syncytial virus (RSV), parainfluenza viruses, and rhinovirus. The major allergens associated with childhood asthma include house dust, animal dander, mold and pollen. Exercise induced asthma occurs in 95% of children with asthma. The degree of exercise induced asthma does not correlate with the severity of asthma. The occurrence and severity of exercise induced asthma is affected by the type of exercise, pollutants, environmental humidity and temperature and irritants.

Asthma can cause scholastic underachievement in children (Voorhorst-Smeek, 1977). Underachievement has been attributed to absenteeism, limited alertness and decreased stamina (Pless & Pinkerton, 1975; Walker & Jacobs, 1975). Asthma accounts for 25% of all school days missed in the United States (Parcel, 1979).

Several researchers have studied perception of asthmatic attacks. Weiss (1966) reported that children experienced an increase in negative mood states such as anxiety and fatigue. However, they also reported some positive mood states, too. He concluded that children who experienced positive mood states had adapted to asthma.

Norrish et al. (1977) found that there was no significant relationship between severity of asthma and emotional or conduct disorders when administered a series of personality tests. Children were divided into three groups according to severity of asthma (mild, moderate and severe). No significant relationship was found between the severity of illness and conduct disorder.

Aaron (1967) examined how 20 asthmatic children, 20 nonasthmatic children with allergies and 20 healthy control subjects performed on two

personality tests. She reported that no difference existed between groups although asthmatic children experienced general feelings of loneliness, desertion and rejection by parents significantly more than healthy controls.

Creer et al. (1983) studied the parents of 78 asthmatic children. The instrument he utilized was designed to cover parent's perceptions of their child's asthma, behaviors to prevent attacks, attack related behaviors, behavioral consequences of asthma and socioeconomic factors. Almost 40% of the parents felt that their child was preoccupied with their body. In addition, many parents reported that their children were concerned about the lack of growth he experienced or "other physical changes." Although this study did not directly examine body image, the study does indicate that parents of asthmatic children perceive their children as being concerned about their bodies.

Viney & Westbrook (1985) studied school-aged asthmatic and nonasthmatic children utilizing interviews. Children were matched according to sex and age. Tape recordings of the interviews were analyzed for anxiety, depression, anger, uncertainty, helplessness and competence, social ability and good feelings. Depression in the asthmatic group tended to increase with age while that of the control group decreased. Indirectly expressed anger also tended to increase with age. Severity of illness was not considered in the study so it is not clear how ill the children were. In addition, the study was broken down into three groups of children according to age. The groups differed considerably in size from 27%, the smallest group, to 37%, the largest group.

In a study comparing asthmatic children and normal well children between the ages of three and seven years of age, Kim, Ferrara, and Chess (1980) reported that the asthmatic children were significantly different from the two other control groups in their temperament. The asthmatic children were characterized by lower rhythmicity, lower adaptability, lower intensity of reaction, lower mood value, and lower persistence.

Bender, Belleau, Fukuhara, Mrazek and Strunk (1987) studied the motor performance of 67 asthmatic children. Intellectual ability, psychosocial functioning, medical history and pulmonary functioning were included in the study. As a group, the children possessed average neuromotor skills across measures of speed, ability, strength, dexterity, and coordination. However, poor psychosocial functioning was correlated with decreased neuromotor skills. The author suggested that decreased psychosocial functioning may be the result, rather than the cause, of decreased neuromotor functioning. Therefore, asthmatic children with psychologic difficulties may also have deficient neuromotor development.

Several studies have associated psychologic factors as impacting pediatric asthma death. Strunk, Mrazek and Fuhrmann (1985) conducted a case controlled study of 21 patients with severe asthma hospitalized between 1973 and 1982 who died of asthma following hospital discharge. Average age of death was 13 (range 8 to 18). Twenty-one asthmatic control cases were matched for age at the time of hospitalization, sex and severity of illness. Psychologic characteristics which differentiated the two groups included poor self-image, sleep disturbances, appetite problems, deficient self-care, parent-staff conflict and manipulative use of asthma in the family setting.

In terms of severity of asthma and body image, the literature indicates that severity of asthma may correlate with disturbance in body image. However, severity of asthma has not been thoroughly examined in the literature. Creer et al. (1983) considered severity of asthma. Bender et al. (1987) examined severity of asthma in relation to neuromotor skills and discovered that severity of asthma was correlated with poorer psychological functioning. However, body image was not an isolated variable.

Body Image and Body Esteem

Body image is personal and subjective concept. It is acquired or learned during the process of growth development (King, 1981). Body image is a dynamic concept that reflects an individual's changes regarding his experiences and perceptions of those experiences. Norris (1984) suggests that body image includes "kinaesthetic, proprioceptive, visceroceptive and tactile input" (p. 840). Body image is a part of each stage of growth and development and is subject to the impact of sociocultural factors which may influence how an individual perceives his body. As an individual passes from one age group to another, his body image may change.

Schidler (1951) has defined body image as the picture an individual forms in his mind of his body. It is unique to the child and is the result of his sensorimotor and affective experiences (Blaesing & Brockhaus, 1972). Because the child is constantly learning and meeting new challenges, the body image is fluid. King (1981) defines body image as a "persons' perceptions of his own body, other's reactions to his appearance and is a result of other's reactions to self" (p. 33).

Body image is an important concept because it is part of an individual's self-concept. Children who view their bodies as being attractive, efficient and worthwhile will see themselves positively as separate unique individuals. In Bauman's (1981) discussion of the importance of body image, she suggested that body image is an important construct clinically when discussing the part of the self-image that relates to the body. It is especially useful to the clinician when the patient's description of his body differs significantly from the clinician's.

Researchers have developed several dimensions of body image. These dimensions include physical attractiveness, physical effectiveness, body esteem and perceived physical competence. Physical attractiveness is other's perception of the child's body. Physical effectiveness refers to how well the child's body parts help the child to be effective in the child's daily functions. The child's feelings about his body refer to body esteem. Perceived physical competence is the child's perception of how well his body performs physically. Researchers do not consistently separate physical attractiveness, physical effectiveness, body esteem and perceived physical competence and include these dimensions when they refer to body image.

In summary, body image is a personal, dynamic and fluid concept that is acquired during the process of growth and development. Because body image is part of an individual's self-concept and is fundamentally an individual's picture of his body. Body image is important to the clinician if the individual's perception of his body is different from the clinician's perception. Body esteem is a separate concept; it is an

individual's feelings, attitudes and evaluation of his body. Although most researchers do not separate the two concepts, both concepts are important to understand. Finally, researchers have defined physical attractiveness, physical effectiveness, body esteem and perceived physical competence to describe dimensions of body image. All of the dimensions contribute to understanding body image.

Body Image and Body Esteem in Healthy Children

Early research on body image can be traced to the development of basic body builds or somatotypes (Sheldon, 1940). Sheldon considered three body types: endomorphs (short, stocky, fat); ectomorphs (tall, thin); and mesomorph (muscular). Sheldon assumed that each somatotype was also associated with a particular temperament type. He associated endomorphs with warmth, fun loving, calmness and dependency characteristics. Ectomorphs were associated with anxiousness, self-centeredness and detachment. Mesomorphs were considered dominant, active and risk takers. Sheldon's hypothesis has been rejected that differences in temperament and body builds are determined by one's body build.

The research on body image in preschool children and school-aged children is sparse. Preschool children are able to name and draw body parts, an important indicator of the young child's conceptualization of the body. In their study of nursery school children, Brittain and Chien (1983) asked children to draw a person, name body parts, point to body parts, and assemble body parts. They found that between the ages of three and four and one-half, most kinds are drawing a recognizable person. The researchers did not determine if there are differences in the ability of younger or older children to point to, name, or assemble

body parts. However, the researchers discovered that children who could successfully name and point to body parts were better at drawing and assembling body parts. Although the improvement in the ability to draw body parts could be attributed to improved motor skills, this research indicates that young children have a basic understanding of their bodies and are receptive to body image research.

Lerner and Lerner (1977) studied physical attractiveness in school-aged children in the fourth and sixth grade. Actual and perceived academic performance, school adjustment, peer relations and physical attractiveness ratings were obtained on each participant. Physical attractiveness was positively related to positive peer relations and academic ability and negatively related to negative peer relations. Consequently, physically attractive children perform better academically and have better peer relations than children who are not physically attractive. This research supports the notion that physically attractive and physically unattractive children elicit different reactions from their peers and teachers.

Acceptance by one's peer group is important to the school-aged child and the adolescent. Hendry and Gillies (1978) explored the relationship between a measurement of leanness, fitness, teacher's ratings of students, pupil's assessment of self, personality, dependence and independence, body esteem, social class, academic attainment, extracurricular school sport, leisure sport, leisure companion, and television viewing. They studied 2,600 adolescents ages 15 to 16. Participants were administered a body esteem scale which contained six affective dimensions. Overweight participants possessed lower body

esteem scores overall ($p < .001$). In addition, overweight and underweight children were perceived as having less physical ability than average weight children. However, the researchers did not define body esteem, not the dimensions of body esteem that were measured. This research indicates that overweight children do not feel as good about their bodies as average weight children.

In a study of preadolescent girls, Rierdan and Koff (1980) reported that early adolescents (ages 11 to 12) emphasized and were more preoccupied with body parts than later adolescents (ages 13 to 14). The subjects' ages ranged from 11 to 14 years old. Each girl was asked to draw a whole person rather than a stick figure drawing and to draw a person of the opposite sex. (Only the female figure was examined.) The girls were then administered a questionnaire which asked them questions concerning "growing up" such as menstruating and wearing a bra. The researchers hypothesized that premenarcheal girls would represent breasts more explicitly than postmenarcheal girls. However, there was no difference between menarcheal status and explicit representation of breasts. The researchers further hypothesized that independent of menarcheal status, early adolescents would more frequently draw explicit sexual characteristics than older adolescents. There were significant differences between the drawings from girls in the sixth and seventh grade combined and from girls in the eighth grade. Younger girls more frequently represented breasts explicitly than older girls.

This research supports the idea that during puberty the adolescent experiences changes in body image. The researchers assumed that body growth and development changes are assimilated in to the body image and

then reflected in human figure drawings. Therefore, the finding that explicit representation of secondary characteristics decreased from early to late adolescence indicates that early adolescents emphasize and are somewhat preoccupied with body parts whose changes dignify the onset of puberty. Later adolescents have a more integrated body image.

In a study on self-image in adolescents, Simmons, Rosenberg and Rosenberg (1973) reported that early adolescents ages 12 to 14 exhibited heightened self-consciousness, greater instability of the self-image and lower self-esteem when compared to children ages eight to 11. Children in grades three through 12 were asked to complete a self-image tool containing items measuring self-image, self-consciousness, stability of self and self-esteem. Adolescents (15 years and more) scored higher on all items than the group of early adolescents. The researchers, however, did not study the effects of pubertal changes in adolescence.

The onset of puberty and resulting alterations in body image has been the subject of research. Blyth, Simmons and Zakin (1985) studied the effects of pubertal timing on body image and self-esteem among early, mid and later matures in different school environments. This longitudinal study covered a five year period. Comparisons were made between children who attended an elementary school and then shifted to a four year high school and children who attended an elementary school, shifted to a seventh through ninth grade junior high and then a tenth through twelfth grade school. Children were examined by a registered nurse to establish physical maturity based on Tanner scales. An instrument developed by the researcher to measure satisfaction with body image and a self-esteem scale developed by Simmons et al. (1973) were

administered to children in the seventh, ninth and tenth grades. Early maturing females weighed more and were less satisfied with their weight than late matures. However, the early maturing girls did not rate themselves as less attractive or having lower self-esteem. Researchers predicted that earlier developers would do better in a school with older children. Indeed, in K-8 schools, satisfaction with height and figure development were lower for the taller and early developers.

In another longitudinal study, Petersen and Crockett (1985) studied adolescents over a three year period from the sixth through eight grade. Boys had significantly higher body image than girls. In terms of pubertal timing, for early maturing boys, average body image scores were stable across the three grade level. However, body image scores dropped for on time and late matures between sixth and seventh grade, but increased again by eight grade. To contrast, the body image scores for girls were quite different. The body image scores for early maturing girls dropped steadily over the three year period while scores for the late maturing girls dropped after seventh grade. Scores for the on-time girls remained stable over time. Consequently, early maturing girls ended upon with somewhat lower body image scores than any of the groups.

Zakin et al. (1984) studied the relationship between early pubertal development (ages 11 to 12) and physical attractiveness in the popularity, body image and self-esteem in sixth grade girls. The purpose of the research was to study whether early physical development is mediated by the individual's level of physical attractiveness. The researchers hypothesized that the attractive early-maturing girl will have a healthier body image and higher self-esteem than the unattractive

girl. Physical attractiveness was rated by a nurse according to "perceived degree of thinness" and "perceived looks." Girls were also rated according to pubertal statuses "developing" (early or on time with their peers) or "undeveloped" (undeveloped in relation to their peers). Unattractive girls perceived themselves as less good looking, less satisfied with their figure and less satisfied with their weight than attractive girls. Developing girls were less satisfied with their weight than girls who were undeveloped. In terms of self-esteem, undeveloped girls who were unattractive in appearance demonstrated lower self-esteem than girls who were attractive. Among developing girls, however, the unattractive participants exhibited higher self-esteem than the attractive participants. Consequently, pubertal development meant a loss in self-esteem for attractive girls and an increase in self-esteem for unattractive girls. The researchers suggested that girls who have "more to loose" from changes in their appearance (the attractive girls) react negatively to the onset of puberty. Similarly, girls who have the "least to lose" from physical changes (the unattractive girls) react more favorably to the onset of puberty.

Duke et al. (1982) examined early and late matures ages 12 to 17 to determine the relationship between educational achievement and maturity. Based on Tanner scales, each child was assigned to one of three groups: an early developing group; a late developing group; and a mid developing group (for those children who were neither early or late in their development). Except for 12 year olds, late maturing white males were less likely to want to complete college and less frequently expected to do so. The mean scores on the Wechsler Intelligence Scales for Children

and the Wide Range Achievement test were lower in the late maturation group, except for the 12 year old boys. The relationship between education variables and birth order and family size were not strong or consistent. Early matures did better on educational achievement than mid matures. The researcher suggested that physical size affects self-esteem. Furthermore, late maturation may cause lower academic aspiration in adolescent males.

Mendelson and White (1985) studied self-esteem and body esteem in overweight children. Coopersmith's Self-Esteem Inventory and Mendelson's Body Esteem Scale was administered to children ages eight to 17. At all ages, overweight children had lower body esteem than normal weight children. Furthermore, self-esteem and body esteem were correlated.

Preadolescent and adolescent girls were assessed to detect changes in the ability of adolescents to recognize the body as they progressed through the early to the late stages of development (Collins & Propert, 1983). The researchers were interested in determining whether adolescents were able to accurately recognize their bodies in view of the rapid physical changes they are experiencing. The subjects, 157 girls, were photographed and subsequently asked to identify their picture from a group of five pictures (head occluded). Percentage of correct identification for premenarcheal girls was 59, menarcheal 67, and postmenarcheal 84. The results indicated that postmenarcheal adolescent girls are well aware of their bodies and can recognize them accurately. However, premenarcheal and menarcheal girls experience some lag in their body image due to the rapid physical changes that are occurring.

In summary, a review of the literature on body image in healthy children reveals that perceptions of body image impact children and can be traced to young children. Preschool children can name body parts, point to body parts, assemble body parts and draw human figures (Brittain & Chien, 1983).

For the school-aged child, physically attractive children do better academically and have better peer relations than unattractive children (Lerner & Lerner, 1977). In addition, overweight children have a poorer attitude toward their bodies than children who are average weight (Hendry & Gillies, 1978). In addition, preadolescent girls are preoccupied with their body parts, especially the body parts that signal the onset of puberty (Rierdal & Koff, 1980).

Several studies have examined the relationship between the onset of puberty and body image (Blyth et al., 1985; Duncan, Ritter, Dornsbusch, Gross & Carlsmith, 1985; Petersen & Crockett, 1985). In general, early developing girls have less positive body images than their late maturing counterparts. As girls become more mature they experience an increase in subscapular skinfolds, hence they experience an increase in weight. On the other hand, unattractive early developing girls experience an increase in self-esteem.

In comparison to girls, adolescent boys score better on body image instruments that girls. The skinfolds measurement remains constant in boys throughout maturation, subsequently boys experience an increase in muscle mass rather than fat. However, early maturing boys are less satisfied with their body images than on-time or early maturing boys.

Body Image and Body Esteem of Children During Physical Illness

A recent study of children with vitiligo, a disfigurement involving depigmentation of the skin, indicated that age was an important factor in adjustment to the disfigurement (Hill-Beuf & Porter, 1984). In depth interviews were conducted on 19 children, ages three to 18 years of age, and their parents. Prepubertal or early adolescent children had the most difficulty in adjusting to the disfigurement. However, children who had developed competencies in other areas such as sports, hobbies or school, reported only mid emotional response to vitiligo. There was little difference in response to the disfigurement by either boys or girls. Therefore, when children feel they are competent in an area they are better able to respond to a disfiguring illness.

Adolescent females with anorexia were compared to non-anorexic adolescent females (Leon, Lucas, Colligan, Ferdinando & Kamp, 1985). Female patients on an adolescent psychiatric unit with anorexia were included in the investigation. Subjects were administered a questionnaire that measured body image, personality, sexuality and family environment before treatment at the hospital and after treatment. The anorexic group received a treatment consisting of encouragement to eat by a staff member, individual psychotherapy, and work with the family; the non-anorexic group received no treatment. The anorexic group evaluated their bodies less favorably than did the non-anorexic group before treatment. However, after treatment the anorexic group evaluated their bodies more favorably. The anorexic group at admission also reported more negative attitudes regarding sexual and feminine appearance, evaluation of sexual feelings, and sexual interest and arousal than the

non-anorexic group. There were also significant differences between the anorexic and non-anorexic group on general and personality and social skills.

Strober (1981) studied adolescent females with anorexia to determine the relationship between personality factors and body image measures during the acute stage of anorexia. Subjects ranged in age from 14 to 17. They were administered the MMPI, a body image questionnaire, and their body perception was determined using a "distorting photographic technique." Body image disturbance was associated with "self-dissatisfaction, dysphoria and anxious rumination." Size over-estimation was correlated with introversion and lack of stable interpersonal bonds.

Differences in body image perception was detected in anorexic, obese, emotionally disturbed and healthy female subjects ages 11 to 22 years (Norris, 1984). Participants were required to estimate the width of various body parts of utilizing an apparatus which provides a continuous horizontal slit of light of variable length. Participants were then asked to face a full-length mirror and to examine her body in stages from head to foot, noting size. Participants were then asked to dress and the estimation procedure was repeated for the anorexic group, the differences in estimation before and after mirror confrontation were significant for all body widths. For all groups, the head and the thigh were over-estimated the most frequently and the hip the least frequently. Neither the age of the participants nor the duration of illness was significant in any of the measurements. The researchers developed a change index based on scores before and after mirror confrontation. The

anorexics had high change index score, which the researchers attributed to a greater degree of instability of their body image.

Grant and Fodor (1986) studied the relationship between anorexia and body image. Subjects were 168 males and females 15 to 18. Body image was measured according to physical attractiveness, self-esteem and physical effectiveness. Self-report measures were developed to detect the presence of anorexic symptoms of thinness, interoceptive awareness, bulimia, body dissatisfaction, ineffectiveness, maturity fears, perfectionism, and interpersonal trust. Multiple regression analyses were performed indicating that self-esteem was the most important predictor of tendencies toward anorexia behavior.

Hong and Kim (1981) explored the relationship between children's understanding of their physical illnesses and body image and self-concept. The study included 19 boys ages six to 12 years. Boys were interviewed to discover their understanding of their physical illness. In addition, participants were asked to draw the organ involved in their illness. The illnesses included seizure disorder, mental stenosis and peritonitis. In addition, participants were asked to draw the organ involved in their illness. They were subsequently asked to draw "a whole person," "a person of the opposite sex," and "a picture of yourself." The children were then administered the Piers-Harris Children's Self-Concept Scale. The Scores on the Piers-Harris were within the normal range for all of the children. However, the researcher concluded that 37% of the children had body image disturbances because these children either emphasized or minimized the lesion involved in their illness.

Because the sample of this study was small, the results may not be generalizable. The researchers did not state whether the figures that the children were asked to draw were stick figures or a picture. Also, the interpretation of the figures were subjective. However, as the researchers pointed out, it is probable that acute illness does not significantly impact a child's self-concept if the child has a positive parent-child relationship and adequately developed personalities. Nevertheless, there seems to be a relationship between body image disturbance and physical illness.

Children with psychiatric disturbances were interviewed to determine satisfaction weight height and weight (Ham, Easton, Himburg & Greenberg, 1983). The researcher did not describe the type of psychiatric disturbance of the patients. A questionnaire-interview was conducted on 35 children, ages six to 18. Figures were shown to the subjects and they were asked to choose which they most resembled. Height, weight and age data were obtained from medical records. A weight-for-height index, a ration was used to classify the patient as overweight, normal or underweight. Dissatisfaction is defined as the expressed desire to change present height or weight. Seventy percent of the males and 43% of the females were dissatisfied with their present height. Sixty-two percent of the males and 82% of the females were dissatisfied with the weight. Chi-square values indicated that the dissatisfaction with height and weight was significant compared to the expected values ($p < .05$). Males were more dissatisfied with height and females were more dissatisfied with weight in this study. This research confirms the

notion that girls are dissatisfied with their weight and desire to be thin.

The body image of physically abused and normal adolescents was studied (Hjorth & Harway, 1981). Both boys and girls, ages 12 to 16 years, were asked to Draw-A-Person. The drawings of physically abused children contained fewer details, lacked clothing, omitted fingers, lacked symmetry and was absent of arm condition. The researchers concluded that based on the drawings, physically abused children have poor interpersonal relationships, introverted tendencies, insecurity, anxiety, poor body image, poor adjustment, poor self-concept, and sex role confusion.

Researchers have suggested that depression distorts self-image. Beck (1973, 1976) included "distortion of body image" as a symptom of depression. Noles, Cash and Winstead (1985) studied college undergraduates and discovered that depressed subjects were less satisfied with their appearance, less satisfied with their body parts and viewed themselves as less attractive than did nondepressed patients. Furthermore, depressed individuals distorted their body image more negatively and perceived themselves to be less attractive than the ratings of objective raters.

In summary, variations in body image and body esteem occur between girls and boys and are believed to be a result of girls desire to be more thin. These differences occur during late adolescence. Neither body image or body esteem in school-aged children has not been researched carefully. When school-aged children, ages seven to 11, have been studied they have been categorized with adolescents and have not been

studied alone (Ham et al., 1983). Most of the research was correlated body image with obesity or anorexic behavior (Mendelson & White, 1985). Only one studied examined body image in ill children.

Adolescents have been the primary targets of research on body image. Few studies have focused on body image in prepubescent and school-aged children. Although Ham et al. (1982) included school-aged children in his study of body image in youngsters with psychiatric disturbances, children ages six to 12 were grouped together and data did not indicate whether prepubescent or younger children were more dissatisfied with their body image. Lerner and Karabenick (1974) studied the effects of age and physique on male students in three age groups. He reported that five to six year olds held only minimal unfavorable perception of specific body parts.

Dissatisfaction with the body is more prevalent in females. Girls desire to be thinner while boys are either satisfied with their current weight or desire to have larger proportions (Lerner & Lerner, 1977). Body image and self-esteem have been found to be related. Garner and Garfinkel (1981) found a relationship between self-report measures of body dissatisfaction and self-esteem, the more satisfied the individuals tended to be with his or her body. This linkage of self-esteem to feelings about body are more characteristics of women than men (Lerner & Karabenick, 1974; Lerner, Orlos & Knapp, 1976). Mendelson and White (1985) reported that body esteem, the effective component of body image and self-esteem were correlated regardless of body weight. She concluded that children who were dissatisfied with their personal appearance were also unhappy about other aspects of their lives such as

school, and academic and peer relationships. Body esteem were also correlated with body weight. Therefore, children who were overweight had lower opinions about their bodies.

There are several gaps in the literature concerning body image and body esteem. First, body image has been almost exclusively done on adolescents. More research needs to be done on school-aged children, ages seven to 11, and young children to determine their perceptions of body image. Larger numbers of school-aged children need to be studied and their ages need to be examined closely.

Secondly, body image research has been done on select groups of subjects with selective problems. These problems include anorexia, obesity and depression. More research is needed to be done on children with chronic illnesses.

Measurement of Body Image and Body Esteem

A variety of techniques have been derived to measure different aspects of body image. Questionnaires, projective techniques, figure drawings and size estimation have been used to measure body image. These techniques measure body image with differing levels of sensitivity. Depending on the focus of the research and the population studied some techniques have been used more frequently than others.

Questionnaires have been developed to measure body image in children. Ham et al. (1983) combined a questionnaire and an interview to study body image in 75 children. The questionnaire included items about whether others (family, authority gaffers and peers) perceived them as overweight, underweight or normal. The children were also asked whether they were satisfied with their weight and height. As part of the

interview, children were asked to choose which figure most resembled them and which figure they would most like to resemble. It is unclear whether the figures were stick figures or pictures of boys and girls. Body image, therefore, was measured by the child's perception of how others perceive them, satisfaction with their weight and choosing a figure which best resembled them. The researchers did not indicate how many items were contained on the questionnaire or whether the scale was a Likert scale.

Noles et al. (1985) also used a questionnaire to study body image in undergraduate males and females. He administered the Body Parts Satisfaction Scale developed by Berscheid which consisted of a list of 24 body parts plus an overall appearance item on a six-point Likert scale ranging from extremely dissatisfied to extremely satisfied. He also used the Body-Self Relations Questionnaire consisting of 140 items with a five-point Likert scale. It contains items measuring the person's attitudes and actions toward physical appearance, physical fitness, and physical health. Noles then asked 13 individuals to rate each subject on a seven-point Likert scale, ranging from very physically unattractive to very physically attractive. The raters viewed each subject's static, standing, smiling pose from a video recording. Raters were instructed that their ratings should resemble a normal distribution and should be based on how they felt the average person would rate the individual subjects. Body image was operationalized as satisfaction with one's appearance, satisfaction with parts of the body, and attitudes toward physical appearance, physical fitness and physical health.

Interviews were conducted by Hill-Beuf and Porter (1984) to detect disturbances in body image in children with vitiligo. In depth interviews were conducted with 19 children ages three to 18 years. Children were asked about their illness and treatment. They were also asked about their feelings about vitiligo, experiences they had with other people because of vitiligo, what kinds of situations made them anxious about vitiligo and whether they believed that their reaction to vitiligo had changed over time. Children were asked questions concerning their feelings of competency by examining their interest and participation in the classroom, hobbies, sports, career, and vocational aspirations. In addition, subjects were asked about sources of support to them and whether they used cosmetic techniques to disguise vitiligo. They were asked what advice they would give another child recently diagnosed with vitiligo. In a separate interview, parents were asked about the child's emotional response to vitiligo and the success of treatment. The criteria to detect disturbances in body image was not included.

Brenner and Hinsdale (1978) studied body image in children ages five through 20 years. Children were shown pictures of physiques by displaying side view profiles of three body types; endomorph, mesomorph, and ectomorph for the appropriate age group. Children were also given a Verbal Check List, devised by Lerner, consisting of pairs of descriptive terms relating to description of physical, social and personal characteristics. Physical terms consisted of "thin" or "fat" or "good looking" or "ugly." The social characteristics were "helps others" or "selfish" or "friendly" or "mean to others." Personal characteristics

consisted of "kind" and "unkind" and "neat" and "sloppy." Children were asked to choose the picture that most looked like themselves and the one they would most like to look like. In addition, they were asked to indicate which picture best fit the adjectives. The researchers did not define body image. However, they associated body image with certain physical, social and personal characteristics.

Mendelson and White (1982) developed a scale to measure body esteem, the feelings an individual has about his body. It is a 24-item self-report designed for children with at least a second grade reading ability. The scale consists of items asking if the children likes what he/she looks like and how others (peers, family, parents) perceive their looks. children respond to the items with either a "yes" or a "no." Reliability was established by administering the Piers-Harris Children's Self-concept Scale called "Physical Appearance and Attributes" ($r = .62$).

Strober (1981) studied body image in female adolescents diagnosed with anorexia nervosa. He administered the distorting photograph technique developed by Glucksman and Hirsch. This technique uses the subjects own photographically projected image as a stimulus. A standard full-length slide photographic of the subject (in a two-piece bathing suit) was projected onto a screen through a lens capable of distorting the image. The subject was instructed to adjust the distorted image on the screen until the image corresponded the subjects' perceived size at that moment. The amount of distortion was read from a calibrated dial.

Strober also utilized the Fisher Body Distortion Questionnaire, a self-report questionnaire, to detect body image disturbance. The

instrument consisted of 82 questions answered on a "yes" and "no" and "undecided" basis. The scale measures the perception of body parts as excessibly large or small, loss of body boundaries, blockage of body openings, unusual sensations and body depersonalization experiences. This scale is specifically designed to be utilized on anorectics who may have problems with body boundaries, body depersonalization and blockage of body openings.

Norris (1984) used a modification of the Slade and Russell (1973) index for calculating a Body Perception Index. An apparatus consisting of two lights mounted on a horizontal bar (one fixed and the other movable) is adjusted to estimate the participant's body width for head, chest, waist, and hips. Norris used a continuous horizontal slit of light. Participants were required to estimate each designated width by stopping the researcher as the researcher varied the light slit. Norris developed a formula to determine the Body Perception Index:

$$BPI = \frac{\text{perceived body width}}{\text{actual body width}} \times 1$$

There are advantages and disadvantages to utilizing the various methods of detecting body image in children. By utilizing questionnaires, the researcher can establish the reliability and validity of the questionnaire. The questionnaire, however, may not be adequately sensitive to differing aspects or levels of body image. The drawings of body types have the advantage of communicating to the child the precise construct the researcher is attempting to study. However, frequently, investigators have not established the reliability of using figure drawings. Furthermore, figures are limited only to the perception of the

child at the time of the study. Figures do not include how the child feels about his perception, or how others perceive him. Most of the measures contain an evaluative aspect of body image. That is, children are asked how they perceive others (parents, peers, teachers) perceive their body.

Tools to measure body image usually ask the child how he perceives his body. In some studies, children are asked to evaluate their perception of different body parts. Objective raters are utilized to rate physical attractiveness and this rating is compared with the child's perception.

The major difficulty with body image research relates to the composition and utilization of experimental and control groups. In many studies the diagnostic criteria are unclear. Frequently, investigators do not indicate how patients were selected or fail to include relevant demographic characteristics such as duration of illness or stage of treatment. When control groups are utilized, investigators may have neglected such variables as socioeconomic status, dietary restrictions, psychopathology and I.Q.

In summary, body image is the individual's picture of his body. A review of the literature indicates that children with anorexia, psychiatric disturbances and obesity have disturbances in body image. Although body image has not been studied in children with chronic illness, it is important to how chronically ill picture their bodies and their feelings, attitudes and evaluation of their bodies.

Self-Esteem

Coopersmith (1967) defines self-esteem as the evaluation which the individual makes and maintains with regard to himself. Furthermore, self-esteem expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself to be capable, significant, successful and worthy. Self-esteem is based on the self-concept and refers to how an individual feels about how he sees himself (Stanwych, 1983). Self-esteem is, therefore, a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself.

Coopersmith identifies five characteristics that are related to self-esteem: physical attributes, general capacities, and ability and performance, affective states, problems and pathology, and personal values. In his study of preadolescent males, Coopersmith found that physical attractiveness was unrelated to self-esteem (x +2.10, $df = 2$, $p < .50$). In terms of physique, Coopersmith reported that the bodies of children with low self-esteem are less likely to be well formed, robust, and coordinated than the bodies of persons with more favorable opinions of themselves. For preadolescent males, physique tends to be associated with physical strength and prowess and a more significant source of self-esteem than physical attractiveness.

The level of self-esteem of the mother is an important factor in the development of self-esteem in the child. Coopersmith (1967) found that children with high self-esteem tended to have mothers with high esteem. Children with low self-esteem were members of families in which the mother lacked self-esteem.

Promoting self-esteem in children is important to health care providers. Reasoner (1983) noted that children who participated in a program to enhance self-esteem were more likely to increase their motivation, productivity and leadership skills than children who did not participate in the program.

Growth and Development

During the school-aged years children grow at an individual pace. During this time they begin to assume adult proportions. Girls begin their growth spurt around the age of ten. Boys begin their spurt later but catch up to girls by the age of 13 or 14. The central nervous system matures during these years so the coordination is improved. Sexual development begins at ten to 12 years of age for the prepubescent female. Boys develop most of the secondary sexual characteristics during adolescence.

In terms of personality development, school-aged children become more independent. They begin to assume greater responsibilities which provide an opportunity to gain self-confidence and learn new skills. Self-esteem is important to the school-aged child. Children want to attain peer approval from their peers. The peer group is an important aspects of the child's life during the school-aged years. School-aged children want to be accepted and approved by their friends. Havighurst (1972) defined the principal developmental tasks of school-aged children as gaining mastery over one's body and developing intrapersonal and interpersonal skills. Mastering one's body is important to the child's self-image.

Conclusion

The review of literature covering childhood asthma and body image in children was presented in Chapter III. The methods to conduct a pretest on an instrument designed to measure body image and body esteem in school-aged children will be discussed in Chapter IV.

CHAPTER IV

Methodology

Overview

The purpose of this proposal is to design and pretest an instrument to explore the relationship between selected variables of body image and body esteem in school-aged children with asthma. In this chapter, the methods adopted to address this problem are described. The instrument will be pretested for literacy by school-aged children. To establish norms, the instrument will be administered to a group of healthy school-aged children.

Purpose of the Project

The purpose of this project is to design and pretest an instrument that would answer the following research question:

> What is the relationship between body image and body esteem in school-aged children with asthma?

To establish norms, the instrument will be administered to a group of health school-aged children.

Pretest Methodology

To pretest the instrument, respondents will be drawn from a pool of parents who have previously attended a family support group for parents of asthmatic children. The support group is affiliated with the American Lung Association of Western Pennsylvania. To be eligible for inclusion, the following criteria must be met:

1. Children ages seven to ten.

2. Able to read and write in the English language.
3. Weight and height within the twenty-fifth and seventy-fifth percentiles of the National Center for Health Statistics Growth Charts. The literature reveals that body image and body esteem disturbances occur in children who are obese and underweight.
4. No previous history of anorexia nervosa. The literature reveals that children with anorexia have disturbed body image.
5. Children who have been medically diagnosed as asthmatic.

To establish norms, a comparison group of healthy school-aged children will be administered the instrument. A convenience sample of children in a Pittsburgh public school will be selected to be a part of the pretest. Consent forms and questionnaires will be given to nine children who are acquaintances of the researcher. Because this is a nonequivalent control group, the asthmatic children may differ from healthy children with respect to other characteristics not measured.

Procedures for Pretesting the Instrument

Data will be collected by means of structured questionnaires. The researcher will met with an administrator of the American Lung Association of Western Pennsylvania and discuss the purpose of the pretest and the potential benefits of the research to school-aged children with asthma. The American Lung Association maintains a list of parents, children and their ages who have been a member of the support group. In their monthly newsletter, the American Lung Association will ask readers if they or their children would like to participate in a study of children with asthma. Those parents who indicate a willingness to participate in the study will be asked to call the Lung Association.

The American Lung Association will mail the instrument and the consent form to those parents. A description of the purpose of the instrument, its potential benefits to society, the requirements for participation in the pretest of the instrument, questionnaire, and the consent form will be mailed to the parents. Questionnaires will be numbered to coincide with the numbers on the consent form, but no lists of names will be made. When the questionnaire is completed, it will be mailed to the investigator. To assure anonymity, the consent form will be mailed separately to the American Lung Association.

Respondents will be asked to evaluate the overall content and readability of the questionnaire and to record any comments on it. Subjects wishing a report on the results of the pretest will be asked to leave their names with the American Lung Association and a follow-up letter will be sent to them when the results are tabulated.

Data for the normal group will be collected by means of a structured questionnaire. The researcher will meet with friends of the researcher and discuss the purpose of the pretest and the potential benefit of the research to school-aged children. The researcher will provide the consent forms and the questionnaire to parents of the participants. When the questionnaire is completed the questionnaire will be returned to the researcher in a sealed envelope.

The rights of the participants will be assured by using the standards of the Michigan State University Committee on Research Involving Humans Subjects Committee. There will be no physical or psychological risks to the participants of the pretest. Participation

will be completely voluntary and participants will be informed of their right to withdraw at any time.

Operationalization of Study Variables

Body image is the mental picture an individual has of himself. Question 17, "I am thin," or question 7, "I am strong," reflect body image. There are 20 items that are hypothesized to measure body image.

Body esteem is defined as an individual's feelings, attitudes and evaluations of his body. Item 4, "My weight makes me happy," item 5, "There are lots of things I would change about my looks if I could," and item 10, "I really like what I weight," measure body esteem. There are 19 items that are designed to measure body esteem.

The literature indicates that in school-aged children the ability to perform in sports is important to their feelings and perceptions of their bodies (Coopersmith, 1967). Feelings and evaluation of psychomotor performance is measured in terms of physical strength, speed, and general sports ability. Items 3, "I am stronger than other kids are," refers to the child's evaluation of his strength. Item 12 evaluates the child's perception of his speed "Other kids my age can run faster than I do." Item 14 measures how a child feels other children perceive his physical abilities, "Kids my age think I am athletic," and item 18, "My classmates would like to run as fast as I do." Item 15 measures how a child feels about himself as compared to others in terms of fatigue in gym class, "I get tired in gym class more often than other kids do." Finally, items 2, "Most kids are better in sports than I am," and 19, "I'm just as good in sports as other kids are," reflect general athletic ability.

A Likert-type scale will be utilized to answer the questions. The format of the questions will be a statement followed by a four-point Likert scale on which the respondent will indicate his/her agreement with the statement, i.e., strongly agree, agree, disagree, and strongly disagree. Numerical scores will be assigned to each of the possible responses on items such that a higher score will indicate a high level of body perception. Responses are assigned four for agreement with a positively stated item and one for agreement with a negatively stated item. Some items are reverse scored to minimize the influence of response set.

Modifying variables and socioeconomic data questions are included (Appendix B) to gather information in relation to personal and environmental factors such as age, sex, race, and grade in school, recent hospitalizations, school absenteeism, and Emergency Room visits.

Extraneous variables are defined as variables which could have an effect on the dependent variable under investigation (Polit & Hungler, 1983). Examples of extraneous variables which may influence the research findings include socioeconomic status of the respondents, obesity, a chronic illness or an acute illness.

Development of Instrument

The Body Perception Scale was developed by the investigator based on a review of the Body Esteem Scale (Mendelson & White, 1982), the Coopersmith Self-Esteem Inventory (1967), and a review of the literature concerning body image and asthmatic children.

The Body Esteem Scale developed by Mendelson and White (1982) was constructed to measure body esteem in obese and normal children. Body

esteem is the affective component of body image (Mendelson & White, 1982). Body esteem refers to an individual's feelings, attitudes and evaluation about his body. It is a 24-item self-report instrument designed for children with at least a second grade reading ability. The scale contains 24 items with "yes" or "no" responses. The scale was scored by counting the number of responses indicating high esteem.

The Body Esteem Scale was administered to 36 randomly selected children ranging in age from 7.5 to 12 years. Validity was established by administering the Piers-Harris Children's Self-Concept Scale called "Physical Appearance and Attributes" ($r = .67$, $p < .002$). The researchers also reported a split-half reliability of .85 ($p < .002$).

Items were adapted by the investigator from the Body Esteem Scale (1982) for the purpose of assessing the child's body esteem. Adaptations from the Body Esteem are as follows: items 1 and 2 on the Body Perception Scale are reproduced from the Body Esteem Scale, "I like what I look like in pictures" and "Most kids have a nicer body than I do"; items 4 and 5 are reproduced from the Body Esteem Scale, "My weight makes me unhappy" and "There are lots of things I would change about my looks if I could." Items 6, "I'm proud of my body," and 7, "I think I have a good body," are reproduced from the Body-Esteem Scale.

Item 9, "Kids my own age like my looks," item 10, "I really like what I weigh," and item 11, "My classmates would like to look like me," are reproduced from the Body Esteem Scale. Finally, item 13, "My parents like my looks," is adapted from the Body Esteem Scale (see Appendix A for all items).

Based on the review of literature, additional items were developed by the investigator to assess the child's perception, attitudes and evaluation of his/her gross and fine motor performance (items 12, 18, 19, 20, 23, 26, 27, 28, 32, 34, 35, 36, 37, 38, 39, and 41).

Body image is the mental picture an individual has concerning his body. Items such as "I am think" or "I am strong" reflect the child's mental picture of himself as being thin or strong. Items 3, 8, 15, 17, 18, 19, 20, 21, 23, 26, 27, 28, 32, 33, 34, 35, 36, 37, 38, and 40 were developed by the investigator to assess body image.

Statistical Analysis of Data

Sociodemographic data and information regarding illness factors will be analyzed using descriptive statistics. The range, mean and percentages, in addition to tables summarizing frequencies of sociodemographic components and factors relating to illness will be presented in Chapter V.

Summary of Responses

After the pretest of the instrument, responses will be summarized to determine variations in responses to scale items and improve the instrument. The results of the pretest will provide the basis to design an additional study to answer research questions outlined previously. Readability of the questionnaire will be checked.

Protection of Human Rights

Specific procedures would be followed to insure that the rights of study participants are not violated. The researcher would use standards of the Michigan State University Committee on Research Involving Human Subjects. It is anticipated that there would not be any physical or

psychological risks to the participants involved in this research study. However, parents would be informed that participation is completely voluntary and participants would be free to withdraw from the study at any time.

An explanation of the research study and goals, the approximate time involved in the participation, the nature of the questions to be encountered and assurances of anonymity will be provided each participant as part of the letter of explanation and consent form. Numbered coded questionnaires will be separated from patient's identifying data upon receipt of the investigator and all data will be transcribed in aggregate form for computer analysis.

Results of the Pretest

The results of the pretest will be used to refine the Body Perception Scale to utilize in a subsequent research study. Items that are confusing to the respondents will be deleted or altered to better measure either body image or body esteem.

Proposed Research Design and Sample: Future Research

A survey design will be used to answer the research question: "Is there a difference between body image and body esteem in school-aged children with asthma and healthy school-aged children"? A convenience sample will be drawn from parents who attend a pediatric clinic.

Criteria for the sample would be:

1. Children ages seven to ten.
2. Able to read and write in the English language.
3. Weight and height within the twenty-fifth and seventy-fifth percentiles of the National Center for Health Statistics Growth

Charts. The literature reveals that body image and body esteem disturbances occur in children who are obese and underweight.

4. No previous history of anorexia nervosa. The literature reveals that children with anorexia have disturbed body image.
5. Children in Tanner Stage 1.

Because the sample will be voluntary and not the result of random selection, the results of this study can be generalized only to children with asthma who possess the characteristics which are similar to those of the sample. Results could not be considered to be representative of all children with asthma.

Proposed Data Collection: Future Research

Data would be collected by means of structured questionnaires. The nurse will ascertain the patient appropriateness for inclusion of the study by using a written checklist furnished by the investigator.

The patients would be informed that becoming a participant in the study would not change the medical treatment that they were receiving and that they might withdraw from the study at any time. The investigator would describe the purpose of the study, its potential benefits to society and the requirements for participation in the study. Subjects willing to participate would be asked to sign an consent form.

Reliability and Validity

The quality and adequacy of a measurement instrument are evaluated by the reliability of the instrument (Polit & Hungler, 1983). Reliability is concerned with the degree of internal consistency within the instrument. One of the most important sources of measurement error is the sampling of items (Polit & Hungler, 1983). By measuring an

instruments internal consistency, the instrument can be said to be measuring the same thing. The coefficient alpha is expressed in terms of a coefficient with a range of 0 to 1.0 (Polit & Hungler, 1983). A reliability coefficient of .60 or .70 is usually sufficient for establishing reliability of an instrument (Polit & Hungler, 1983). The reliability of the Body Perception Scale will be determined by calculating the coefficient alpha.

Validity refers to the degree to which an instrument measures what it is designed to measure. One way to evaluate the validity of an instrument is to utilize experts in the content area and based on their analysis determine if the content is reflected in the correct proportions (Polit & Hungler, 1983). The content validity of an instrument is based on the investigator's judgment and the judgment of experts. The Body Perception Scale was developed by reviewing the literature, interviewing experts, and is based on the knowledge and judgment of the investigator.

Proposed Statistical Analysis

Descriptive and inferential statistical techniques would be utilized to answer the research question proposed in this study. Descriptive statistics would be used to analyze sociodemographic data i.e., range, distribution, percentages and means. Pearson product moment correlations (Pearson r) would be calculated to describe the relationships between the modifying variables of age, race, grade in school, height percentile, weight percentile, age at onset of wheezing; and of the relationships among and between the major study variables of body image and body esteem.

Point-by-point correlations could be calculated to determine the relationship between body image and body esteem. A multiple regression correlation would be used to determine the relationship between the variables. The correlation describes the strength of the relationship among several independent variables and one dependent variable.

Conclusion

In Chapter IV the methods to pretest an instrument developed to measure body image and body esteem in school-aged children was presented. The results of the pretest will be discussed in Chapter V.

CHAPTER V

Results of the Instrument Pretest

Overview

In Chapter V, the pretest sample will be described in relation to sociodemographic characteristics. The data obtained from the pretest will be presented and described for the purpose of improving the final instrument. In addition, a summary of the responses to body image and body esteem in the pretest will be presented. Participants consisted of a convenience sample of healthy school-aged children. School-aged children with asthma were solicited from a support group of the American Lung Association of Western Pennsylvania.

Pretest Respondents: Sociodemographic Data

Thirteen school-aged children completed the instrument. Nine of the children were healthy children, four of the children had been previously diagnosed with asthma.

In the healthy children's group, the age of the respondents ranged from seven to nine years old. In the asthmatic group, the age of the respondents ranged from seven to nine years of age.

In the healthy children's group, there were three boys and six girls. In the asthmatic group, three respondents were boys and one respondent was a girl.

In the healthy children's group, the grade in school ranged from first to fourth grade. Two healthy children were in the first grade, five children were in the second grade and one child was in the fourth

grade. In the asthmatic group, two children were in the second grade, one child was in third grade and one child was in fourth grade.

In the healthy children's group, all children were between the twenty-fifth and fiftieth percentile in height. For the asthmatic children, all four children were between the twenty-fifth and fiftieth percentile.

One child in the healthy group was above the ninety-fifth percentile in weight. Five children were between the twenty-fifth and the fiftieth percentile and one child was at the tenth percentile. For the asthmatic children, one child was at the ninetieth percentile, two children were at the fiftieth percentile, and one child was at the twenty-fifth percentile in weight.

Health Related Descriptive Variables

For the healthy group, children ranged from zero to three days absent to four to seven days absent from school during the previous six months. Three asthmatic children were absent zero to three days and four to seven days during the previous six months. One healthy child was absent ten to 13 days during the previous six months. The instrument did not permit children to indicate absences were due to asthma. Therefore, the instrument should be modified to include reasons for children's absences from school.

None of the healthy group had been hospitalized in the last six months. None of the asthmatic children had been hospitalized in the last six months.

None of the healthy children had visited the Emergency Room in the last six months. One of the asthmatic children had not been in the

Emergency Room in the last six months. The other three children had been to the Emergency Room once. One child had gone to the Emergency Room because of an asthmatic attack, one child had visited the Emergency Room due to bronchitis and one child went to the Emergency Room for a chest x-ray and did not explain why he needed a chest x-ray.

For the healthy children, respiratory infections ranged from zero to seven in the past six months. Four of the children in the healthy group had zero to three infections and four of the children had four to seven infections. In the last six months, three of the children with asthma had one to three episodes of respiratory infections. The other child had five or more respiratory infections.

Children had been diagnosed with asthma from one to six years. The mean age of onset was three years of age (range two to six years). One child answered the question "six years" so it was difficult to determine if the child was diagnosed at age six or if the onset of asthma occurred six years ago. This question needs to be clearer so respondents can indicate how old they were when they first heard they had asthma and how many years ago they first heard they had asthma.

Only one of the children was currently taking medications. That child was on Slow Bid and Ventolin. The other children were not on any medications. The instrument should be modified to include other parameters of severity of asthma such as pulmonary function tests. The instrument could also be modified to include a question whether the well children were on medications.

Summary and Implications of Sociodemographic Section

In Table 1 the distribution of the participants by sociodemographic variables is depicted for healthy school-aged children and school-aged children with asthma. In Table 2, the distribution of the participants by health related measures is depicted for healthy school-aged children and school-aged children with asthma. In this pretest, all of the healthy participants were caucasian or oriental. Sociodemographic variables should be modified to include race.

The groups were similar in age. Both groups ranged in age from seven to nine. The groups were different in terms of sex. Fifty-six percent of the healthy children were girls, whereas seventy-five percent of the asthmatic children were boys. The groups were similar in weight. All of the healthy children were between the tenth and fiftieth percentile in their weight. Seventy-five percent of the asthmatic children were in the tenth to fiftieth percentile in weight. The groups were also similar in height. All of the children were between the twenty-fifth and fiftieth percentile in height for both the healthy children and the children with asthma. Absence from school during the previous six months was similar for both groups. However, Emergency Room visits differed for the healthy and the asthmatic groups. None of the children in the healthy group had been to the Emergency Room in the last six months, whereas all of the children with asthma had been to the Emergency Room. The incidence of respiratory infections in the last six months was similar for both the healthy children and the children with asthma. Therefore, the healthy school-aged children and the asthmatic school-aged children were similar in the sociodemographic variables.

Table 1: Distribution and Percentages of Healthy and Asthmatic School Aged Children with Asthma by Sociodemographic Variables

	Number of Respondents			
	Healthy (n = 9)	%	Asthmatic (n = 4)	%
Age				
7	5	56	1	25
8	3	33	2	50
9	1	11	1	25
Sex				
Boys	3	33	3	75
Girls	6	56	1	25
Grade				
First	4	45	0	0
Second	4	45	2	50
Third	0	0	1	25
Fourth	1	11	1	25
Weight				
10-25%	1	11	1	25
25-50%	7	77	2	50
50-75%	0	0	0	0
75-90%	0	0	1	25
> 90%	1	11	0	0
Height				
10-25%	0	0	0	0
25-50%	9	100	4	100

Table 2: Health Related Measures in Healthy and Asthmatic School-Aged Children

	Number of Respondents			
	Healthy (n = 9)	%	Asthmatic (n = 4)	%
Absence from School				
0 - 3	4	45	2	50
4 - 7	4	45	1	25
8 - 12	0	0	1	25
13 or more	1	11	0	0
Emergency Room Visitations				
None	0	0	1	25
Once or more	0	0	3	75
Respiratory Infections				
None	0	0	0	0
One to three	3	33	3	75
Four to six	5	56	1	25
Seven or more	0	0	0	0

Variables Related to Body Perception: Body Image and Body Esteem

In this section, the pretest results of the instrument exploring body image and body esteem in the school-aged child will be discussed. Body perception was obtained from questions relating to body image and body esteem. An overall body perception score was obtained by combining the body image score and the body esteem score. In healthy children, the range of body perception score was 107 - 126. The mean score was 113.

In the asthmatic group the range of body perception scores was 87 - 122. The mean score was 109.

Body image is defined as an individual's feelings, attitudes and evaluations about his body. Body image was explored with questions 3, 8, 15, 17, 18, 19, 20, 21, 23, 26, 27, 28, 32, 34, 35, 36 37, 38, 39, and 41 (see Appendix C). A variety of responses were obtained on the Likert scale items. The results of the pretest responses are depicted in Table 4. For the healthy children the scores on body image ranged from 51 - 69 with a mean score of 58. The range of score on body image for the asthmatic children was 48 - 61, with a mean of 57. The chi-square test showed no difference between healthy school-aged children and school-aged children with asthma in body image.

Table 3: Comparison of Body Perceptions, Range and Means of Scores on Body Image and Body Esteem Between Healthy and Asthmatic Children

	Healthy Children	Asthmatic Children
Body Perception		
Range	107 - 126	87 - 122
Mean	113	109
Body Image		
Range	51 - 69	48 - 61
Mean	58	57
Body Esteem		
Range	46 - 64	39 - 57
Mean	55	51

Table 4: Answers Pertaining to Body Image in Asthmatic School-Aged Children (N = 4)

	Strongly Agree	Agree	Disagree	Strongly Disagree
3. I am stronger than other kids are.	1 (0)	4 (2)	3 (2)	1 (0)
8. I am nice looking.	2 (0)	6 (3)	1 (0)	0 (0)
15. I get tired in gym class more often than other kids do.	0 (0)	3 (0)	4 (1)	2 (0)
17. I am thin.	2 (1)	5 (3)	1 (0)	1 (0)
18. My classmates would like to run as fast as I do.	1 (0)	7 (2)	2 (1)	0 (0)
19. I'm just as good in sports as other kids are.	1 (1)	6 (2)	2 (1)	0 (0)
20. I am better at doing things with my hands than other kids.	0 (1)	6 (3)	3 (0)	0 (0)
21. I would like to weigh more.	0 (0)	3 (1)	2 (1)	4 (2)
23. I am better at doing things with my hands than doing good in sports.	0 (1)	2 (1)	4 (1)	3 (1)
26. I am more athletic than most kids my age.	1 (0)	4 (3)	3 (0)	0 (1)
27. I am more muscular than other kids.	1 (1)	4 (2)	2 (0)	2 (1)
28. I am happy with how fast I can run.	3 (0)	6 (4)	0 (0)	0 (0)
32. Other kids think I am stronger than they are.	0 (0)	4 (3)	4 (0)	1 (1)
33. Other kids think I run faster than they do.	2 (0)	3 (4)	3 (0)	2 (0)
34. I am strong.	2 (0)	4 (2)	3 (2)	0 (0)
35. I run fast.	3 (0)	6 (4)	0 (0)	0 (0)
36. I am happy with how fast I run.	3 (0)	6 (4)	0 (0)	0 (0)
37. I am happy with how I do in gym class.	4 (2)	4 (2)	0 (0)	1 (0)
38. My gym teacher thinks I am strong.	0 (0)	7 (2)	1 (1)	0 (1)
40. My gym teacher thinks I can run fast.	1 (0)	7 (4)	0 (0)	0 (0)

Body esteem is defined as an individual's feelings, attitudes and evaluations about his body. Body esteem was explored with questions 1, 2, 4, 5, 6, 7, 9, 11, 13, 14, 16, 22, 24, 25, 29, 30, 31, and 40 (see Appendix C). A variety of responses were obtained on the Likert scale items. The results of the pretest are depicted in Table 5. The scores on body esteem ranged from 46 - 64, with a mean score of 55 in healthy children. In the asthmatic group the range of scores on body esteem was 39 - 57 with a mean of 51. The chi-square test showed no difference between healthy school-aged children and school-aged children with asthma in body esteem.

Summary and Implications: Selected Variables

Children in this pretest were below the fiftieth percentile in weight, perceived themselves as thin and did not want to weigh more. The one obese child had the lowest score on the Body Perception Scale. Overall, healthy school-aged children like their looks, are happy with their weight and are proud of their bodies. The asthmatic children who were not on medication scored similarly to the healthy children. However, the one child who was on medication had the lowest score on body image and body esteem for both the healthy children and the asthmatic children.

All of the asthmatic children disagree with the statement "I get tired in gym class more often than other kids do." Three of the healthy children agreed with that statement.

All of the asthmatic children agreed with the statement "I am thin." However, only one child indicated he wanted to weigh more. The asthmatic children perceived themselves as more athletic and more muscular than

Table 5: Answers Pertaining to Body Esteem in Healthy School-Aged Children (N = 9)

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I like what I look like in pictures	2 (2)	5 (2)	2 (0)	0 (0)
2. Most kids are better in sports than I am.	1 (0)	2 (2)	3 (3)	3 (0)
4. My weight makes me unhappy.	1 (0)	0 (0)	4 (2)	4 (2)
5. There are lots of things I would change about my looks if I could.	0 (0)	5 (1)	3 (3)	1 (0)
6. I'm proud of my body.	3 (0)	6 (4)	0 (0)	0 (0)
7. I think I have a good body.	2 (0)	6 (4)	0 (0)	0 (0)
9. Kids my own age like my looks.	2 (0)	6 (3)	0 (0)	1 (0)
11. My classmates would like to look like me.	0 (0)	3 (0)	5 (4)	1 (0)
13. My parents like my looks.	5 (3)	4 (1)	0 (0)	0 (0)
14. Kids my age think I look athletic.	2 (1)	5 (2)	1 (1)	1 (0)
16. Most kids have a nicer body than I do.	0 (0)	1 (1)	7 (2)	1 (0)
22. Other kids think I am stronger than they are.	1 (0)	4 (2)	4 (1)	0 (1)
24. I would like to weigh less.	1 (0)	2 (1)	3 (2)	3 (1)
25. When I look in the mirror I like how I look.	2 (1)	7 (3)	1 (0)	0 (0)
29. I am happy with how muscular I am.	0 (0)	7 (3)	2 (0)	0 (1)
30. Other kids like my looks.	0 (0)	6 (2)	3 (1)	0 (0)
31. Most kids think I have a nicer body than they do.	0 (0)	3 (2)	4 (1)	2 (0)
40. My gym teachers thinks I can run fast.	1 (0)	7 (4)	0 (0)	0 (0)

other kids except for the child who was on medication who "strongly disagreed" with those statements. However, all of the asthmatic children were happy with how fast they ran and said that they ran fast. In question number 11, six of the children indicated that their classmates would not like to look like them. This item was inconsistent with the other items of feeling proud of their bodies, but was consistent with item 31, "Most kids think I have a nicer body than they do." Therefore, young school-aged children may have difficulty evaluating how other kids perceive their bodies.

Perception of Body Image and Body Esteem in Healthy School-Aged Children

In this section, the results of the Body Perceptions Scale measuring body image and body esteem in school-aged children will be presented individually. The range of Body Perception scores was 107 - 126 (mean was 113). The range on the body image component was 51 - 69 (mean was 58) and the body esteem component was 46 - 64 (mean was 55).

Respondent number one was an eight year old boy in the second grade. His weight was within the twenty-fifth percentile and his height was within the fiftieth percentile. His score on the Body Perception Score was 126. His body image score was 57 and his body esteem score was 69. He had no difficulty completing the questionnaire.

Respondent number two was a seven year old female in the second grade. Her weight was at the tenth percentile and her height was at the twenty-fifth percentile. Her total score on the Body Perception Score was 108. Her body image score was 51 and her body esteem score was 57. She had no difficulty completing the questionnaire.

Respondent number three was an eight year old boy in the second grade. His weight and his height were at the fiftieth percentile. His Body Perception Score was 108. His body image score was 62 and his body esteem score was 46. He had no difficulty completing the questionnaire.

Respondent number four was an eight year old boy in the second grade. His weight and height were between the twenty-fifth and fiftieth percentile. His Body Perception Score was 111. His body image score was 58 and his body esteem score was 53. He had no difficulty answering the questionnaire.

Respondent number five was a seven year old girl in the first grade. Her weight and height were both between the twenty-fifth and fiftieth percentile. Her Body Perception Score was 115. Her body image score was 59 and her body esteem score was 56. She had no difficulty answering the questionnaire. She commented that answering the questions "is fun" and said she wanted to answer more questions.

Respondent number six was a seven year old white female in the first grade. Her weight was at the ninety-fifth percentile. She did not complete her height. Her Body Perception Score was 107. Her body image score was 56 and her body esteem score was 51. She strongly agreed with the statement "My weight makes me unhappy." She disagreed with the statement "I really like what I weigh."

Respondent number seven was a seven year old female in the first grade. Her weight was within the twenty-fifth percentile and her height was within the fiftieth percentile. Her Body Perception Score was 111. Her body image score was 62 and her body esteem score was 49.

Respondent number eight was a nine year old female. Both her height and weight were at the twenty-fifth percentile. Her Body Perception Score was 111. Her body image score was 62 and her body esteem score was 49. She had no difficulty answering the questions.

Respondent number nine was a seven year old white female. Her weight and height were between the twenty-fifth and the fiftieth percentile. Her Body Perception score was 123. Her body image score was 59 and her body esteem score was 64. In summary, none of the healthy children had difficulty in answering the questionnaire.

Perception of Body Image and Body Esteem in School-Aged Children with Asthma

In this section, the results of the pretest to measure body image and body esteem in school-aged children with asthma will be discussed. The range of scores on the Body Perception Scale for asthmatic children was 87 - 122 with a range of 109. The scores on the body image component was 48 - 61 (mean was 57) and body esteem component was 39 - 57 (mean 51).

Respondent number ten was an eight year old asthmatic boy. He said he first heard he had asthma "six years." It is uncertain whether he was diagnosed six years ago or he was six years old when he first heard he had asthma. He is currently not on any medications. His Body Perception Score was 116. His body image score was 61 and his body esteem score was 55. He had no difficulty answering the questions.

Respondent number 11 was a seven year old boy. His weight and height are at the twenty-fifth to the fiftieth percentile. He has had asthma for over a year. He is currently on theophylline and Ventolin. His Body Perception score was 87. His body image score was 48 and his body esteem

score was 39. He scored the lowest on all scores. He said he did not know how if other kids have a nicer body than he or if other kids would like to run as fast as he.

Respondent number 12 as a nine year old boy. His height and weight were between the twenty-fifth and the fiftieth percentile. He has had asthma for six years. He is currently not on any medications. His Body Perception score was 122. His body image score was 65 and his body esteem score was 57. He had no difficulty answering the questionnaire.

Respondent number 13 was an eight year old girl in the second grade. Her weight was between the twenty-fifth and the fiftieth percentile. Her height was at the fiftieth percentile. Her Body Perception Score was 112. Her body image score was 57 and her body esteem score was 55.

Summary and Implications: Results of the Pretest

The results of the pretest responses are depicted in Tables 2 and 3. Overall, children did not have difficulty reading and responding to the questionnaire. However, school-aged children have difficulty answering questions comparing their bodies to other children as evidenced by inconsistent answers.

There are several items that should be revised. First, the sociodemographic portion should include ethnic data. Secondly, a question concerning pulmonary functioning should also be included to give a better assessment of severity of illness. Healthy children need to be questioned concerning medications that they are currently on. In terms of methodology, none of the first grade children encountered difficulties reading the questionnaire. However, some children in first grade may have difficulty reading the questions. Therefore, reading ability will need to

be carefully determined before administering the questionnaire to first grade children.

Conclusion

In Chapter V, the results of the pretest were described. For future research, the implications and recommendations for improving the instrument will be identified in Chapter VI. Finally, the conclusions based on the results of the pretest in addition to the potential contributions to nursing theory, research, advanced nursing practice, primary care and nursing education will be presented.

CHAPTER VI

Recommendations and Implications

Overview

In Chapter VI, a discussion on recommendations for revising the Body Perception Scale will be presented. In addition, implications for applying and utilizing the Body Perception Scale in advanced nursing practice, research, primary care and education will be addressed.

The purpose of this project was to design and pretest an instrument to measure body image and body esteem in school-aged children with asthma. This tool can be used by nurses in advanced nursing practice to plan, develop and implement health care to assist children with asthma to achieve maximum potential for daily living.

Discussion of Findings Related to Perceived Body Image and Body Esteem In Healthy School-Aged Children

The pretest indicated that school-aged children had few difficulties using the questionnaire format and were able to rate body image and body esteem. Overall, these school-aged children were happy with their looks, are proud of their bodies and think other kids like their looks. With the exception of one child, all of the healthy children were between the twenty-fifth and fiftieth percentile in their weight.

Most of the children perceived themselves as thin and did not want to weigh more. This finding may indicate that societal influences of being thin affect children at an early age and may have implications in the development of future eating disorders.

Discussion of Findings Related to Perceived Body Image and Body Esteem In School-Aged Children with Asthma

Three of the asthmatic children had scores that were within the range (107 - 126) of the healthy school-aged children on the overall Body Perception Scale. These three children were not on medication. However, the child on asthmatic medication scored well below the range (87) on the overall Body Perception Scale. In regard to athletic ability, this child agreed that "Most kids are better in sports than I am" and disagreed with the statement "I'm just as good in sports as other kids are." In addition, he disagreed with the statement "Kids my age think I look athletic" and he disagreed with the statement "I'm just as good in sports as other kids are." Therefore, this child considered other children as more athletic than himself.

In regard to physical strength, the asthmatic child on medication strongly disagreed with "Other kids think I am stronger than they are" and disagreed with "I am stronger than other kids are." He strongly disagreed with the statement "I am more muscular than other kids" and he strongly disagreed with the statement "I am strong." Consequently, the asthmatic child on medication considered other kids stronger than himself.

Therefore, severity of illness my contribute to a child's picture of his body and his feelings, attitudes and evaluation of his body. Taking medication may stigmatize a child as being sickly and unable to compete in athletic events. Furthermore, teachers and peers may lower their expectations of strength and athletic ability in a child they know is on medication. The child may incorporate the lower expectations in his

picture of himself and his attitudes, feelings and evaluations of himself and picture his body as not strong. In a future study, severity of illness needs to be closely examined by including questions on pulmonary function tests, a rating of asthmatic symptoms in the past month and days in bed in the past two weeks.

Revision of Tool

A number of revisions of the tool are recommended as a result of the pretest. Suggestions for the overall improvement of the tool would include:

1. Sociodemographic questions will need to include questions pertaining to ethnicity.
2. Body image and body esteem questions need to clearly reflect the difference between the two concepts. Body image is the mental picture an individual has of his body; therefore, body image questions need to assess the mental picture an individual formulates concerning his body. Questions such as "I am thin" or "I am strong" reflect body image and would be retained in revising the tool. Several questions that were considered to measure body image in the pretest measured body esteem instead. These questions are important because they ask children to rate their attitudes, feelings or evaluation of their strength or athletic ability. Therefore, in the revision these items would be incorporated in the body esteem category. The following items measure body esteem and would be retained in the body esteem category rather than the body image category, 3, 8, 15, 18, 19, 20, 21, 23, 26, 27, 28, 32, 33, 36, 37,

38 and 40. Additional questions to be added to measure body image would be: I am muscular. I run slow.

Body esteem is the feelings, attitudes and evaluation an individual has of his body. Body esteem questions need to reflect feelings, attitudes and evaluation an individual has concerning his body. Questions such as "I am happy with how muscular I am" and "I would like to weigh less" reflect body esteem and would be retained in the revision of the instrument. All of the items referring to body esteem in the pretest would be retained. Additional items to be added to measure body esteem would be those already referred to.

3. The tool will need to be revised to include additional items concerning severity of illness such as results of pulmonary function tests, rating of asthmatic symptoms in the last month and days in bed in the last two weeks.

Implications for Future Research

A number of implications for future research were demonstrated from the pretest of this tool. Suggestions for use of the tool in future research include:

1. The revised tool should be tested on a larger sample size and in other parts of the country to increase the generalizability of the findings.
2. Longitudinal studies need to be done to determine how body image and body esteem change in regard to health status and during episodes of illness.

3. Personal in depth interviews should be conducted with a number of school-aged children with asthma to determine important health issues and self-image of school-aged children with asthma.
4. The instrument could be modified to obtain the perception of significant others to determine if there is a difference in the child's perception of his body and the perception of significant others. Significant others should include parents, peers and teachers.
5. In future studies, the instrument developed from this study could be used to compare body image and body esteem in school-aged children with other chronic illnesses such as diabetes and cancer to determine if chronically ill children have similar body image score with healthy children.
6. The instrument will need to be delivered to children during their healthy clinic visits for both asthmatic school-aged children and healthy school-aged children. The clinic site is the preferred site because information concerning the child's medical history is readily available for both healthy and asthmatic school-aged children. A registered nurse should administer the instrument to school-aged children with at least a first grade reading level. The instrument should be completed in an examining room in an environment that is quiet so the child is not distracted in completing the instrument.
7. The finding that young school-aged children perceive themselves as thin but do not want to gain weight needs to be explored on larger numbers of children. In addition, young school-aged children who

perceive themselves as thin but do not want to gain weight need to be followed longitudinally to determine if these children are prone to developing eating disorders in the future.

In summary, even though substantial numbers of children suffer from chronic illnesses, little research has been done on how school-aged children with chronic illnesses picture their bodies and their feelings, attitudes and evaluation of their bodies. Nurses in advanced practice are in a unique position to conduct research and then to implement the research findings in their practice so that the goal of quality patient care is achieved. This instrument can be used by nurses to elicit information concerning the child's picture of his body, his feelings, attitudes and evaluation of his body as part of an overall assessment tool. In addition, this tool can be used in conjunction with a tool assessing a child's self-concept when the nurse is interested in obtaining more information about body image.

Furthermore, this instrument can be used by nurses to research body image and body esteem in school-aged children. The tool will need to be administered on a larger sample of children to determine the reliability and validity of the tool. Test-retest reliability needs to be determined by testing a larger group of healthy children and children with asthma and testing them a week later. Internal consistency reliability could be evaluated for body image and body esteem using the Cronbach's Alpha. Once the reliability and validity have been established the nurse can utilize this tool to conduct research on children with other chronic illnesses and disorders.

The Body Perception Scale can be administered to school-aged children with a first grade reading ability. Although the tool is geared to the reading level of the first grade child, all first grade children may not be able to read the tool. The tool is self-explanatory and instructions on completion of the tool are contained in the directions.

Relationship to Conceptual Framework

The purpose of this project was to develop an instrument to measure body image and body esteem in school-aged children with asthma. The Body Perception Scale could be used by the family clinical nurse specialist to assess body image and body esteem in healthy children and in children with asthma.

King (1981) defines nursing as a process of interactions between the nurse and the client in which the nurse and the client mutually set goals and agreed on the method to achieve those goals. Perceptions are each person's representation of reality. The Body Perception Scale measures the school-aged child's picture of his body, his feelings, attitudes and evaluation of his body. By asking the school-aged child and the asthmatic child to answer the Body Perception Scale, the family clinical nurse specialist can identify how the school-aged child pictures his body, and how he feels about his body.

King states that communication is the vehicle by which relationships are developed and maintained. Utilization of the Body Perception Scale is a method for the child to communicate his picture of his body, his feelings, attitudes and evaluation of his body.

It is important for the family clinical nurse specialist to assess body image and body esteem so that the family clinical nurse specialist

can facilitate the school-aged child's successful completion of the Erikson's developmental tasks of industry. Perceptions relating to body image and body esteem are communicated to the nurse by using the Body Perception Scale. If the child scores lower than healthy school-aged children score on the Body Perception Scale the nurse can utilize counseling techniques to understand the child's picture of himself and his attitudes, feelings and evaluations of his body.

When the nurse and the child's perceptions and communications are goal directed, King identifies this process as an interaction. The purpose of interactions is to assist the client in coping with his health problems. Purposeful interactions require openness in the exchange of information and require accuracy of perceptions. It is important for the nurse to identify the child's goals for his body, such as the type of athletic even or organization that the child would like to participate in. Together, the nurse and the child can set mutual achievable goals and develop strategies to attain those goals.

The investigator's analysis of the findings of this pretest support the conceptual framework explained in Chapter II. School-aged children have a picture, feelings and attitudes concerning their bodies. Furthermore, they are able to answer a questionnaire concerning their perceptions.

Implications for Nursing Practice

Primary care consists of an individual's first contact with the health care system and involves health maintenance. The family clinical nurse specialist in primary care provides care that is accessible,

coordinated, continuous, individualized and comprehensive. Primary care of the chronically ill child is efficiently and effectively managed by the family clinical nurse specialist in advanced practice. The role of the clinical nurse specialist is to assist the child to maintain his maximum level of functioning by assessing, educating, counseling and treating the child and the family.

An assessor, the clinical nurse specialist needs to collect data concerning the school-aged child's body image and body esteem. The child's body image and body esteem needs to be assessed at the initial contact with the clinical nurse specialist and then at subsequent visits. The Body Perception Scale can be used at the initial visit by the clinical nurse specialist to establish the child's baseline body image and body esteem. The tool could be administered to first grade children with at least a first grade reading level. If a child scores lower than healthy school-aged children normally score on the Body Perception Scale, the clinical nurse specialist utilizes counseling techniques to explore the child's picture of his body, his feelings, attitudes and evaluation of his body.

The family clinical nurse specialist assists the child to develop a body image that will help the child achieve a sense of industry and competency. Body image is a fluid concept; therefore, the nurse can provide anticipatory guidance as the child grows and develops. During regular check-ups the clinical nurse specialist can teach the child the normal physical changes his body will undergo in the future. When the asthmatic child reaches pubescence, the clinical nurse specialist can facilitate the child's adjustment to rapid physical changes.

The family clinical nurse specialist applies learning theories to help children identify and meet their health educational needs. The nurse in advanced practice educates the asthmatic child and the family concerning the pathophysiology of asthma, the medication regimen, and activities. Consequently, the child will be active in school activities and sports that contribute to developing feelings of competency about himself and a sense of industry.

The family clinical nurse specialist is an advocate for the client and works to transfer the responsibility of self-care to the client. As an advocate for the school-aged child with asthma, the nurse assists the child in teaching him how to communicate health care needs to health care professionals. The clinical nurse specialist also assists the child in communicating his perceptions to his teachers. The child and the clinical nurse specialist can role play with the clinical nurse specialist as another health care provider or teacher.

As a counselor, the clinical nurse specialist facilitates the expression of the child's feelings concerning his body at the initial visit and at subsequent visits. The clinical nurse specialist can provide emotional support to the child during periods of high stress for the child. The clinical nurse specialist also provides counseling to the parents and siblings. In families of chronically ill children, siblings may assume roles that the mother or father used to perform so that the parents can provide care to the chronically ill child. Consequently, siblings may feel that they have been deprived at time with their parents or deprived of the energy resources of the parents. In addition,

siblings of chronically ill children may have psychosomatic complaints. During acute care visits the family clinical nurse specialist can check the sibling's temperature or his blood pressure so the sibling does not feel left out. It is important that the clinical nurse specialist provide an opportunity for family members to express their feelings and concerns in privacy.

The family clinical specialist utilizes research findings to establish standards of care for the services he/she provides. If little or no research exists in a particular area, the clinical nurse specialist designs a research study to investigate that area. The purpose of the development of the Body Perception Scale was to understand how school-aged children with asthma perceive their bodies. The development of this instrument also facilitates the clinical nurse specialist in assessing the body image of all school-aged children.

The nurse in advanced practice should collaborate with the family of the school-aged child with asthma and with the school nurse and the child's teachers when possible to facilitate the child's optimal development. The family clinical nurse specialist should facilitate support groups for children with asthma and for the families of children with asthma. The family clinical nurse specialist can develop and present educational programs to families and to health care professionals and other professional groups including teachers concerning childhood asthma. Because asthma accounts for a large degree of illness related school absenteeism, the nurse can collaborate with the school nurse and school administrators so that school absenteeism policies are directed toward assisting the child to keep up with school activities

while the child is ill. School policies concerning absenteeism during exacerbations should permit chronically ill school-aged children to attend classes for a half-day because school-aged children need contact with their peers.

Primary health care is community based, offering the families access to health care services. The school-aged child with asthma may have frequent upper respiratory infections and need care that is accessible. Asthmatic children experiencing an asthmatic attack need to be seen immediately. They cannot wait for appointments. Receptionists need to be instructed to forward calls of parents of asthmatic children to the health care provider who can speak with the parents and ask them to bring the child into the clinic. Therefore, the family clinical nurse specialist needs to insure the primary care is accessible to asthmatic children in the community.

The family clinical nurse specialist cares for families. Family members in a family with a chronically ill child also experience stress related to the chronic illness. Siblings may report symptoms similar to the symptoms of the chronically ill child. Mothers and fathers may also experience symptoms as a result of the stress on the family. The family clinical nurse specialist needs to assess family and individual functioning regularly. Additionally, the family clinical nurse specialist needs to provide time to assess, counsel and strategize ways to improve individual and family functioning individually. The family clinical nurse specialist can refer family members to support groups or organize support groups if none are available.

The importance of assessing body image and body esteem in school-aged children is in assisting the child to develop a sense of industry and competency so that the child can successfully complete the tasks of school age period. It is the family clinical nurse specialist's responsibility to determine the child's involvement in activities that assist him in achieving a sense of initiative. A child who believes sports involvement is important but who does not think he is strong and does not participate in activities or organizations , will have difficulty attaining a sense of initiative. Knowledge of the child's body image and body esteem coupled with knowledge of the activities the child is involved in and activities the child thinks are important will help the nurse to set goals and strategies with the child so the child can successfully complete the school-aged developmental stage.

Implications for Nursing Education

Although clinical nurse specialists are educated to manage diverse populations of clients ranging from infants to the elderly, chronic illnesses and children will continue to be an important clientele for the family clinical nurse specialist. It is important that the clinical nurse specialist be cognizant of the unique health care needs of chronically ill children.

Assessing and evaluating body image and body esteem in both healthy and chronically ill children needs to be part of the undergraduate and graduate school curriculum. At the undergraduate level, nursing curriculum needs to include basic concepts of body image and body esteem in children. The inclusion of body image and body esteem needs to be incorporated in assessing psychosocial functioning of children.

At the graduate level, curriculum must include in depth knowledge of body image and body esteem. Clinical nurse specialist need to regularly assess body image and body esteem in all children. Based on the assessment of body image and body esteem, the clinical nurse specialist utilizes counseling strategies and techniques to assist the child in achieving his goals.

Nurses in education must be knowledgeable, test theory and contribute to the body of knowledge regarding health needs of children. More research is needed to be done on developing and measuring psychosocial needs of school-aged children.

Continuing education for nurses must include assessing, diagnosing, and planning for children. Nurses need to develop and utilize various instruments to determine how children perceive themselves. If the clinical nurse specialist is managing a chronically ill child she needs to assess how the child perceives being ill as impacting his activities. The development of an instrument designed to measure body image and body esteem is an important step in assisting the child to cope with a chronic illness. Therefore, continuing education programs for the clinical nurse specialist must focus on improved ways to manage children with chronic illnesses.

Conclusion

This project resulted in the design and pretest of an instrument to measure body image and body esteem in healthy and asthmatic school-aged children with asthma. School-aged children have not always been the targets of research. This pretest indicated that school-aged children can answer questions regarding body image and that they have perceptions

and feelings about their bodies. Therefore, research needs to be conducted on body image and body esteem in healthy school-aged children and school-aged children with chronic illnesses.

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APPENDICES

APPENDIX A

Pretest Questionnaire

BODY PERCEPTION SCALE

This questionnaire will help me understand how kinds your age feel about themselves, especially their bodies. I hope you will answer all of the questions so that I can find out how kids feel about themselves. Then nurses and others will be able to take better care of you. Any time you feel like you do not want to answer the questions, you are free to stop.

In the questions that follow, please CIRCLE the answer that you agree with the most.

EXAMPLE: I like school.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

1. I like what I look like in pictures.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

2. Most kids are better in sports than I am.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

3. I am stronger than other kids are.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

4. My weight makes me unhappy.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

5. There are lots of things I would change about my looks if I could.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

6. I'm proud of my body.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

7. I think I have a good body.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

8. I am nice looking.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

9. Kids my own age like my looks.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

10. I really like what I weigh.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

11. My classmates would like to look like me.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

12. Other kids my age can run faster than I do.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

13. My parents like my looks.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

14. Kids my age think I look athletic.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

15. I get tired in gym class more often than other kids do.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

16. Most kids have a nicer body than I do.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

17. I am thin.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

18. My classmates would like to run as fast as I do.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

19. I'm just as good in sports as other kids are.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

20. I am better at doing things with my hands than other kids.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

21. I would like to weigh more.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

22. Other kids think I am stronger than they are.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

23. I am better at doing things with my hands than doing good in sports.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

24. I would like to weigh less.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

25. When I look in the mirror I like how I look.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

26. I am more athletic than most kids my age.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

27. I am more muscular than other kids.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

28. I am happy with how fast I can run.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

29. I am happy with how muscular I am.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

30. Other kids like my looks.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

31. Most kids think I have a nicer body than they do.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

32. Other kids think I am stronger than they are.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

33. Other kids think I run faster than they do.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

34. I am strong.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

35. I run fast.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

36. I am happy with how fast I run.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

37. I am happy with how I do in gym class.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

38. My gym teacher thinks I am strong.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

39. My teacher likes my looks.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

40. My gym teacher thinks I can run fast.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

SOCIODEMOGRAPHIC INFORMATION

Please answer the following questions about yourself. Please check the correct answer.

1. Your age: (PLEASE CHECK ONE)

   a. 7 years _____
   b. 8 years _____
   c. 9 years _____
   d. 10 years _____

2. Sex: (PLEASE CHECK ONE)

   a. Girl _____
   b. Boy _____

3. Grade in school: (PLEASE CHECK ONE)

   a. First grade _____
   b. Second grade _____
   c. Third grade _____
   d. Fourth grade _____
   e. Fifth grade _____

4. Your weight:

   a. _____ pounds

5. Your height:

   a. _____ feet _____ inches

6. When you first heard you had asthma: (Please indicate month and year.)

   a. _____

7. Current medications -- please list: (Please include all medication you are on.)

8. During the last six months, I was absent from school: (Please check one.)

   a. 0-3 days _____
   b. 4-7 days _____
   c. 8-12 days _____
   d. more than 13 days _____

9. During the last six months I was hospitalized: (Please check one.)

   a. not at all _____
   b. once or more _____

   Please state reasons:

10. During the last six months I went to the Emergency Room: (Please check one).

    a. not at all _____
    b. once _____
    c. twice _____
    d. three or more times _____

    Please state reasons:

11. During the last six months I had respiratory infections, such as colds, bronchitis, pneumonia: (Please check one.)

    a. none _____
    b. 1-3 _____
    c. 4-6 _____
    d. 7 or more _____

APPENDIX B

Consent Form

CONSENT FORM

Children with asthma respond differently to the diagnosis and treatment of asthma. Some children with asthma perceive themselves differently than other children and some children with asthma are unaffected with the diagnosis and treatment of asthma. Researchers at Michigan State University are interested in determining how asthmatic children perceive themselves. Results from this part of the study will be used to improve the instruments used in measuring how children perceive themselves.

In this survey, your child will be asked a number of questions about how he perceives himself, how ill he has been recently, and his height and weight. You may answer the questions related to your child's height and weight, recent hospitalizations, and school absences. However, please insure that your child answer the questionnaire themself. If any of the questions are difficult to understand or unclear, please let me know.

By signing this form, I understand that:

1. I have freely consented that my child take part in this study.
2. The study has been explained to me. Furthermore, I understand the explanation that has been provided to me and I understand what my participation and my child's participation will involve.
3. I have explained this questionnaire to my child and noted that his/her participation is voluntary and that he/she may choose not to participate without penalty. My child voluntarily agrees to participate.
4. My child and I am free to discontinue participation in the study at any time without penalty.
5. My responses and my child's responses will be treated with strict confidentiality and all participants will remain anonymous.
6. My child and I will be responding to written information.
7. It will take approximately 20 minutes to complete the questionnaire.
8. My child and I are not guaranteed any beneficial results from participation from the study.
9. Results of this study will be made available to me at my request.

_____ _____

Signed Dated